

ANDREW BEAUMONT | MEREDITH FETTLING

JACARANDA KEY CONCEPTS IN VCE

Health & Human Development

SEVENTH EDITION UNITS **3 & 4**

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SEVENTH EDITION UNITS

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Contents

About the authors	ix
About this resource	x
Acknowledgements	xiv

Health and Human Development exam terminology	1
---	---

UNIT 3 AUSTRALIA'S HEALTH IN A GLOBALISED WORLD	2
---	---

1 Concepts of health and wellbeing	4
1.1 Overview	5
1.2 Concepts of health and wellbeing and illness	6
1.3 Dimensions of health and wellbeing	13
1.4 Interrelationships between the dimensions of health and wellbeing	23
1.5 Optimal health and wellbeing as a resource	28
1.6 Prerequisites for health: peace, shelter, education and food	35
1.7 Prerequisites for health: income, a stable ecosystem, sustainable resources, social justice and equity	40
1.8 KEY SKILLS	48
1.9 Topic 1 review	54
2 Measuring health status	60
2.1 Overview	61
2.2 Self-assessed health status and life expectancy	62
2.3 Mortality	68
2.4 Morbidity	76
2.5 Burden of disease	83
2.6 KEY SKILLS	91
2.7 Topic 2 review	94
3 Factors influencing health status and burden of disease	100
3.1 Overview	101
3.2 Smoking	102
3.3 Alcohol	109
3.4 High body mass index	115
3.5 Underconsumption of vegetables, fruit and dairy foods	123
3.6 Dietary risks of high intake of fat, salt and sugar	134
3.7 Dietary risks of low intake of fibre and iron	143
3.8 Topic 3 review	150
4 Variations in health status between population groups	158
4.1 Overview	159
4.2 Biological factors contributing to variations in health status	160
4.3 Sociocultural factors contributing to variations in health status	168
4.4 Environmental factors contributing to variations in health status	176
4.5 Differences between Indigenous and non-Indigenous population groups	183
4.6 Differences between male and female population groups	193
4.7 Differences between high and low socioeconomic status population groups	201
4.8 Differences between those living within and outside of Australia's major cities	212
4.9 KEY SKILLS	221
4.10 Topic 4 review	226

5	Changes in Australia’s health status	238
5.1	Overview.....	239
5.2	Changes in Australia’s health status over time	240
5.3	Policy and practice relating to the ‘old public health’ and Australia’s health status.....	249
5.4	The biomedical approach to health.....	255
5.5	Development of new public health and the social model of health	259
5.6	The Ottawa Charter for Health Promotion.....	266
5.7	Improving health status using the social and biomedical approaches to health	275
5.8	KEY SKILLS.....	280
5.9	Topic 5 review.....	285
6	Australia’s health system	296
6.1	Overview.....	297
6.2	Medicare.....	298
6.3	The Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme	304
6.4	Private health insurance	311
6.5	Funding and sustainability and the role of Australia’s health system.....	317
6.6	Access and equity and the role of Australia’s health system	327
6.7	KEY SKILLS.....	331
6.8	Topic 6 review.....	333
7	Targets of health promotion in Australia	342
7.1	Overview.....	343
7.2	Smoking and the role of health promotion in improving population health	344
7.3	Road safety and the role of health promotion in improving population health	354
7.4	Skin cancer and the role of health promotion in improving population health.....	365
7.5	Initiatives to address Indigenous health and wellbeing.....	375
7.6	The Australian Dietary Guidelines	383
7.7	The work of Nutrition Australia.....	396
7.8	The challenges in bringing about dietary change	405
7.9	KEY SKILLS.....	414
7.10	Topic 7 review.....	420
School-Assessed Coursework Unit 3 AOS 2 Outcome 2		427
Unit 4 HEALTH AND HUMAN DEVELOPMENT IN A GLOBAL CONTEXT		428
8	Comparing health status and burden of disease across countries	430
8.1	Overview.....	431
8.2	Economic characteristics of high-, middle- and low-income countries.....	432
8.3	Social and environmental characteristics of high-, middle- and low-income countries	438
8.4	Similarities and differences in health status and burden of disease in low-, middle- and high-income countries.....	444
8.5	Access to safe water and sanitation as factors affecting health status and burden of disease	455
8.6	Poverty as a factor affecting health status and burden of disease	463
8.7	Inequality and discrimination as factors affecting health status and burden of disease	470
8.8	Global distribution and marketing of tobacco, alcohol and processed foods as factors affecting health status and burden of disease.....	480
8.9	KEY SKILLS.....	488
8.10	Topic 8 review.....	494
9	Sustainability and human development	500
9.1	Overview.....	501
9.2	The economic dimension of sustainability	502
9.3	The social dimension of sustainability.....	507

9.4	The environmental dimension of sustainability	512
9.5	The concept of human development	517
9.6	The advantages and limitations of the Human Development Index	523
9.7	KEY SKILLS.....	531
9.8	Topic 9 review.....	533
10	Global trends and health and wellbeing	540
10.1	Overview.....	541
10.2	The implications for health and wellbeing of climate change	542
10.3	The implications for health and wellbeing of conflict and mass migration	552
10.4	The implications for health and wellbeing of world trade and tourism	557
10.5	The implications for health and wellbeing of digital technologies.....	564
10.6	KEY SKILLS.....	568
10.7	Review	571
<hr/>		
School-Assessed Coursework Unit 4 AOS 1 Outcome 1		579
11	Sustainable Development Goals and the World Health Organization	580
11.1	Overview.....	581
11.2	Objectives and rationale for the Sustainable Development Goals and key features of SDG 3.....	582
11.3	Key features of Sustainable Development Goal 3 Good health and wellbeing.....	585
11.4	SDG 3 Key feature of maternal and child health and wellbeing.....	590
11.5	SDG 3 Key feature of communicable diseases.....	596
11.6	SDG 3 Key feature of non-communicable diseases	610
11.7	The relationships between SDG 3 and SDG 1	621
11.8	The relationships between SDG 3 and SDG 2	627
11.9	The relationships between SDG 3 and SDG 4	633
11.10	The relationships between SDG 3 and SDG 5	638
11.11	The relationships between SDG 3 and SDG 6	643
11.12	The relationships between SDG 3 and SDG 13	648
11.13	The UN's Sustainable Development Goals and the World Health Organization	654
11.14	KEY SKILLS.....	667
11.15	Topic 11 Review	672
12	Australian aid and non-government organisations (NGOs)	684
12.1	Overview.....	685
12.2	Types of aid	686
12.3	The features of Australia's aid program.....	694
12.4	The Australian government's aid priorities	700
12.5	World Vision and its role in promoting health and wellbeing and human development globally	712
12.6	Red Cross and its role in promoting health and wellbeing and human development globally	717
12.7	Oxfam and its role in promoting health and wellbeing and human development globally	722
12.8	KEY SKILLS.....	730
12.9	Topic 12 review.....	735
13	Programs addressing the Sustainable Development Goals	742
13.1	Overview.....	743
13.2	Features of effective aid programs.....	744
13.3	Programs to address the SDGs	751
13.4	Aid programs addressing SDG 2 Zero hunger	757
13.5	Aid programs addressing SDG 3 Good health and wellbeing	764
13.6	Aid programs addressing SDG 4 Quality education	772
13.7	Aid programs addressing SDG 5 Gender equality	777
13.8	Aid programs addressing SDG 6 Clean water and sanitation.....	783
13.9	Aid programs addressing SDG 13 Climate action	788

13.10 Taking social action	793
13.11 KEY SKILLS.....	802
13.12 Topic 13 Review	808
<hr/>	
School-Assessed Coursework Unit 4 AOS 2 Outcome 2	816
Glossary	817
Index	830

About the authors

Andrew Beaumont

Andrew has been teaching Health and Human Development since its inception almost 20 years ago and is passionate about promoting teaching and learning in this area. He has been involved in writing many materials including the popular Jacaranda texts, newspaper articles, sample and trial exams, SACs, study guides and course outlines. Andrew has assisted many teachers and students of Health and Human Development, including delivering his well-received preparation and revision sessions for over 15 years for a range of organisations and various teachers' associations. He also runs the Health Teachers' Network through which he distributes resources on a weekly basis to health teachers around Australia.

Meredith Fetting

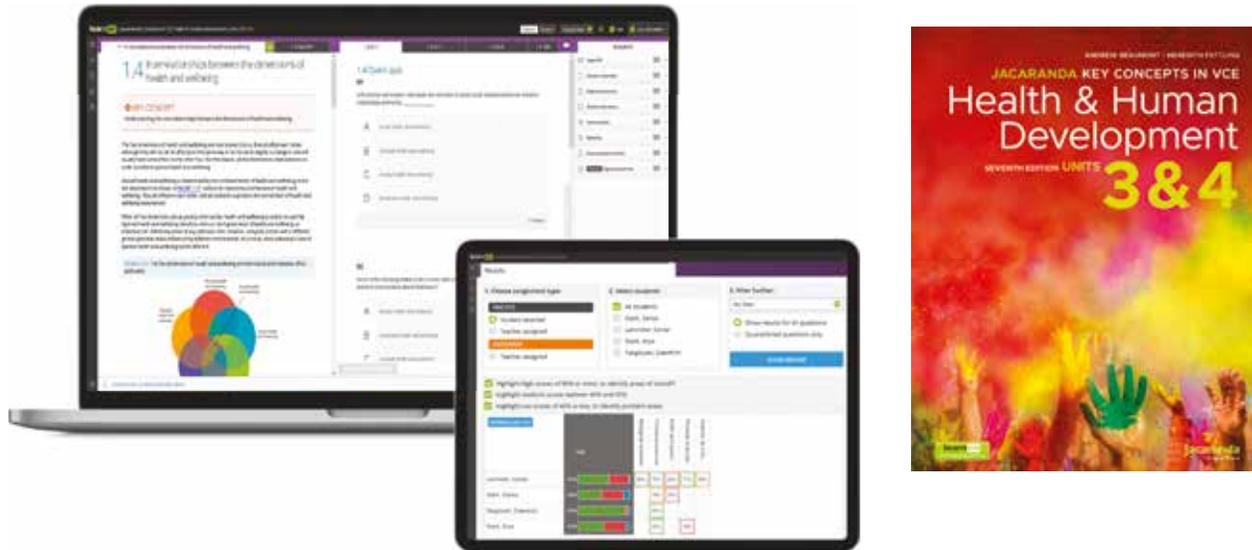
Meredith has been involved with VCE Health and Human Development from the beginning and has considerable experience in the study. She has been involved in writing support material, assessment tasks and textbooks and has previously delivered professional development programs to students and teachers. Meredith is currently assistant principal at Bendigo Senior Secondary College.

About this resource

Jacaranda Key Concepts in VCE Health and Human Development provides students and teachers with the most comprehensive resource on the market. Not only is it explicitly aligned to the Study Design, it is a suite of engaging and purposeful resources.

Formats

Jacaranda Key Concepts in VCE Health and Human Development comes in digital and print formats:



Fully aligned to the VCE Health and Human Development Study Design

Have confidence that you are covering the VCAA curriculum with:

- key knowledge and skills stated at the start of each topic
- key concepts visible at the start of every subtopic
- exercises for each subtopic
- every key skill is broken down and explained in an annotated example
- practice SACs for each outcome
- scaffolded Extended Response section (NEW) to build exam skills
- regular Exam Tips show you how to avoid common mistakes in the exam
- exam practice questions at the end of each topic.

Equity promotes health and wellbeing by ensuring access to:

- education
- employment
- human rights
- resources such as healthcare.

In order to promote health and wellbeing, equity is a key consideration within and between generations. It also extends to issues of social justice and the sustainable use of resources.

Equity as a concept is fundamental to health and wellbeing. Billions of people around the world, such as the homeless, Indigenous people and those living in poverty, do not experience the same level of health and wellbeing as the rest of the population. Promoting equity improves opportunities for these groups and increases their ability to achieve optimal health and wellbeing. For example, equity means that all people can achieve a minimum level of income. This money can be used for food, shelter and healthcare, which can reduce the risk of developing disease, promoting physical health and wellbeing. It can also mean that they feel valued, which can promote self-esteem and enhance mental health and wellbeing.

EXAM TIP

When making links between two or more prerequisites and health outcomes, it is important to ensure you don't 'double dip'. Double dipping is a term used in Health and Human Development to describe an answer that has used two similar responses and therefore shows limited understanding. For example, if you are required to link both income and food to health and wellbeing, each response should show a different aspect of understanding. If the first response discusses how income can be used to purchase food, which in turn provides energy, therefore promoting physical health and wellbeing, there is a risk of double dipping when making the link between food and health and wellbeing. To ensure double dipping does not occur, do not use food in the income link and instead reference another resource, such as being able to afford social activities, adequate shelter or healthcare and then link to the dimension of health and wellbeing from there.

1.7 Exercises [learnON](#)

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON site at [www.jacplus.com.au](#). A **downloadable solutions file** is also available in the resources tab.

1.7 Quick quiz [QIM](#) **1.7 Exercise** **1.7 Exam questions**

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2	3, 4, 5, 6	7, 8, 9, 10

Test your knowledge

- Briefly explain the following terms and include one example that relates to each:
 - ecosystem
 - sustainability
 - social justice
 - equity
- Explain what is meant by a stable ecosystem and discuss why stable ecosystems are important for humans.

46 *Jacaranda Key Concepts in VCE Health and Human Development Units 3 & 4 Seventh Edition*

Exam tips explain common errors and how to avoid them

Use the online auto-marked quick quiz as a pulse check of understanding.

Choose your pathway for a differentiated view of questions.

Apply your knowledge

- Explain how generating an income can assist governments in promoting the health and wellbeing of a country's population.
- Explain how having an adequate income can promote the health and wellbeing of individuals.
- Explain how a stable ecosystem may promote three dimensions of health and wellbeing.
- Explain the difference between social justice and equity.
- Explain why equity is a key consideration in achieving optimal health and wellbeing globally.
- Select two prerequisites from subtopics 1.6 and two from subtopics 1.7 and explain how they are interrelated; that is, how they can impact each other.
- It is not possible to explain all aspects on health and wellbeing for the prerequisites covered in this subtopic. Using examples not provided in this subtopic, explain how a stable ecosystem, sustainable resources, social justice and equity may promote health and wellbeing.

Explain how:

- income can act as a resource nationally
- a stable ecosystem can act as a resource globally
- sustainable resources can act as a resource nationally
- social justice can act as a resource individually and nationally.

1.7 Quick quiz [QIM](#) **1.7 Exercise** **1.7 Exam questions**

Question 1 (6 marks)
Source: VCAA 2018, Health and Human Development Exam, Q.7; © VCAA

Social justice and equity are prerequisites for health.

- Describe** social justice and equity.
- Select either social justice or equity and **explain** why it is a prerequisite for health at an individual level and at a global level. Prerequisite for health selected: _____

Question 2 (2 marks)
Source: VCE 2018, Health and Human Development Exam, Q.13; © VCAA

Peace is a WHO prerequisite for health. **Explain** how peace can lead to improved health outcomes.

Question 3 (2 marks)
Explain why the prerequisite of income is important to health and wellbeing at an individual level.

Question 4 (3 marks)
Other than income and social justice, **identify** three prerequisites of health and wellbeing.

Question 5 (1 mark)
Outline which of the following is not a prerequisite of health and wellbeing: peace, adequate food, equality, education.

More exam questions are available in your learnON site.

TOPIC 1 Concepts of health and wellbeing 47

Offline and online question sets contain test and apply questions with sample responses for every one

Exam questions, including past VCAA exam questions are now in print, at every subtopic.

FIGURE 1.20 The importance of health and wellbeing for individuals

All of these processes contribute to improved health and wellbeing, which increases the ability of individuals to further promote or improve their health and wellbeing, as the example in **FIGURE 1.21** illustrates.

FIGURE 1.21 Optimal health and wellbeing is a resource that can be used to further promote the health and wellbeing of individuals.

As well as promoting health and wellbeing in individuals, a population with optimal levels of health and wellbeing provides benefits at both country and global levels.

TOPIC 1 Concepts of health and wellbeing 39

Extensive visual material helps guide students step-by-step through the key concepts.

OnResources boxes link to targeted digital resources including video eLessons and weblinks.

- CT scans
- PET scans
- bone scans.

Once diagnosed, a range of treatments can take place. These include surgery to remove the affected parts of the lung, radiotherapy and chemotherapy.

Until recently, there was little evidence to suggest that those with terminal lung cancer could be cured, but new technology is being trialled that may give those with advanced cancer the chance to be cured. Improvements in technology have also enabled outcomes of terminal lung cancer to have more effective palliative care to manage the symptoms of the disease and better manage the pain.

It is evident that both the biomedical and social models of health, with a focus on bringing about behavior change and improving diagnosis and treatment services, have contributed to reductions in death rates from lung cancer and improvements in health status.

CT scans: computed tomography scan, which is a specialised x-ray taken from many different angles, to build a three-dimensional picture of the body.

PET scans: involves having an injection of a small amount of radioactive material, which enables a scanner to build up a picture of the body.

Palliative care: an approach designed to maximize the quality of life of patients with a life-threatening illness with little or no prospect of a cure. This is achieved through the prevention and relief of suffering and the treatment of pain.

5.7 Activities

- Access the **Personal consequence ads** and **Breakthrough in lung cancer treatment** weblinks in the Resources tab and then complete the **Smoking** worksheet.
- Select one other example of a disease and research examples of how the biomedical and social models of health have contributed to improvements in health status over time.

Resources

- Digital document** Smoking worksheet (doc-3220)
- Weblinks** Personal consequence ads; Breakthrough in lung cancer treatment

5.7 Exercises [learnON](#)

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON site at [www.jacplus.com.au](#). A **downloadable solutions file** is also available in the resources tab.

5.7 Quick quiz [QIM](#) **5.7 Exercise** **5.7 Exam questions**

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
2, 3, 4, 5	1, 6, 7, 8, 9	10, 11

Test your knowledge

- Why is it important to understand the strengths and limitations of the biomedical and social models of health?
- What did deaths from lung cancer are a specific type of cancer that being recorded?
- What was responsible for the increase in lung cancer deaths for males between 1945 and 1990?
- What factors contributed to the decrease in lung cancer deaths for males from 1990 to the present?
- When were anti-smoking campaigns first introduced in Australia and why?
- To what extent was the social model of health effective in reducing the prevalence of smoking?

42 *Jacaranda Health and Human Development VCE Units 3 and 4 Seventh Edition*

Activities are highlighted throughout each topic to provide practical and group work opportunities.

Key term definitions appear on the same page as the word is found, aiding understanding.

6.7 KEY SKILLS

6.7.1 Analyse the role of Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme in promoting Australia's health

KEY SKILL Analyse the role of Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme in promoting Australia's health

Test me
This skill requires a detailed understanding of the key components of Australia's health system including:

- Medicare
- the Pharmaceutical Benefits Scheme
- the National Disability Insurance Scheme
- private health insurance

Detailed knowledge of the various aspects of each component of the health system as listed is important in explaining the role each plays in promoting health and wellbeing and health status in Australia. This includes:

- the services covered by Medicare
- the services not covered by Medicare
- how Medicare is funded
- the contribution private health insurance makes to the health system
- the options available to an individual with private health insurance
- the incentives used to encourage people to take out private health insurance
- the function of the Pharmaceutical Benefits Scheme
- the support provided by the National Disability Insurance Scheme
- how funding, sustainability, access and equity apply to the health system and any reflected by each component of the health system
- making links between each component of the health system and improved health and wellbeing and health status

Show me
An example of this skill could be explaining the role that Medicare plays in improving health outcomes in Australia in relation to funding and equity. A possible response could be as follows:

Medicare is Australia's universal health insurance scheme and contributes a significant amount of funding for doctors' consultations and treatment in public hospitals.¹ This means that Australians with medical problems can have their checked and treated if necessary, treating symptoms of disease and substantially reducing the risk of premature death and improving mortality rates.² The Medicare Safety Net provides additional subsidies for services such as specialist consultations once a set amount has been paid in relation to Medicare funded services in a calendar year.³ This promotes equity for those with chronic or ongoing medical issues requiring treatment by reducing the cost of treatment and promoting mental health and wellbeing by reducing the level of stress associated with paying the healthcare.⁴

- 1 How Medicare contributes to funding of the health system is specified.
- 2 This statement outlines how Medicare promotes health status in relation to funding.
- 3 How Medicare contributes to equity in the health system is identified.
- 4 This statement explains how Medicare promotes health and wellbeing in relation to equity.

TOPIC 4 Australia's health system 37

Every Key Skill from the Study Design is explained with an annotated example, now supported by a teacher-led video.

Annotations breakdown the model response and explain it, and practice questions reinforce the skill

Source 1
Sources of health system funding over time, constant prices. Constant prices take inflation into account so expenditure in different years can be compared fairly.

Source 2
Sunny is 31 years of age and is a qualified librarian. Last year, he took out private health insurance for the first time. Six months ago, Sunny sustained a significant, permanent disability when he was paralysed after falling while painting the roof of his house. He hasn't been able to work since the accident and has been receiving a government pension. Sunny will require ongoing healthcare but with adequate support he will be able to maintain his social life, continue to live independently and return to his job where he earns \$80 000 a year.

Source 3
The following diagram shows ways that the Australian government, state and territory governments and private health insurance companies contribute funds to the health system.

TOPIC 4 Australia's health system 41

An annotated step-by-step approach is provided.

NEW extended response section models and gives detailed advice on how to answer these tricky exam style questions.

12.9 World Vision and its role in promoting health and wellbeing and human development globally

- Three countries of NGOs are World Vision, the Red Cross and Oxfam.
- World Vision engages governments, institutions, donors, communities and the public to address the underlying causes of poverty, and supports training and projects that empower communities to speak up for their rights and influence change.

12.6 Red Cross and its role in promoting health and wellbeing and human development globally

- Australian Red Cross is present in many countries across the world, with the main focus being the Asia-Pacific region.
- Australian Red Cross overseas aid projects include disaster management, war and sanitation provision, and basic health initiatives.

12.7 Oxfam and its role in promoting health and wellbeing and human development globally

- Oxfam focuses its work around six key goals that help promote health and wellbeing and human development.

on Resources

Digital document Summary (doc-9010)

12.9.2 Key terms

Aid: assistance given to countries or communities in the event of a crisis or for the development of long-term sustainable improvements

Relative and the provision of aid from the government of one country to the government of another country

Emergency aid: rapid assistance given to people or countries in immediate distress to relieve suffering and other emergencies such as wars and natural disasters, for example floods, tsunamis or earthquakes. Emergency aid is also called humanitarian aid.

Governance: the structure and processes that are designed to ensure accountability, transparency, rule of law, inclusiveness and broad-based participation in society

Humanitarian assistance: aid Emergency aid

Infrastructure: the physical and organisational structures, facilities and systems (eg buildings, roads, power) necessary needed for the operation of a society

Microfinance: small, low-cost financial services for poor people that involve low interest loans to develop small businesses

Multilateral aid: aid provided through an international organisation, such as the World Bank, United Nations or World Health Organisation. Multilateral aid combines donations from several countries and then distributes them to the recipient

Non-government organisation (NGO): non-profit organisations work to promote health and wellbeing and human development and they operate separately from governments

Non-government organisation (NGO) aid: NGOs take different approaches to aid, which can include specific projects or programs, emergency aid, volunteering, education and development. The aid provided by NGOs often focuses on communities

Official Development Assistance (ODA): financial assistance provided by donor government agencies to low- and middle-income countries on the multilateral aid agencies. Also known as aid.

Private sector: part of a country's economic system that is run by individuals and companies, rather than the government

Secular: not concerned with religion or religious matters

Sustainable development: development that meets the needs of the present without compromising the ability of future generations to meet their own needs

Theoretical: involving general notions

94 Jacaranda Health and Human Development VCE Units 3 and 4 Seventh Edition

Summary points provide a re-cap of the most important content of the topic.

Summary is also available as a downloadable Word document to aid revision.

11.15 Exercises

To answer questions online and to receive immediate feedback and sample responses for every question, go to your learnON title at www.pearson.com.au.

11.15 Exam questions

Question 1 (8 marks)
Source: VCE 2005, Health and Human Development Exam, Q.11.12 VCAA
Consider the following three sources relating to global trends and other factors.

Source 1
Number of undernourished people (billions) in the world between 2005 and 2018 (projected)

Source:
Adapted from FAO, IFAD, UNICEF, WFP and WHO, The State of Food Security and Nutrition in the World 2019: Safeguarding against economic and climate shocks, Rome, FAO, 2019, P. 8. License CC BY-NC-SA 3.0 IGO

Source 2
In Yemen, Hontle to Motab and his family, protracted conflict ... turned daily life into a living hell. His father's job, transporting goods in a wheelbarrow, provided the family with the bare minimum of food – bread for breakfast, vegetables, usually potatoes, for lunch and anything left over for dinner.

By the time Motab turned 2 years old, the combination of poverty and protracted conflict left him in a struggle for his life. After Motab had suffered seven months of repeated illnesses with vomiting, diarrhoea and weight loss, his mother was diagnosed with a free health centre in Aden, where Motab was diagnosed with SAM (severe acute malnutrition). Motab is just one of the 400 000 children in Yemen who suffered from SAM in 2018.

Source: UNICEF, The State of the World's Children 2019: Children, food and nutrition: Growing well in a changing world, UNICEF, New York, 2019, p. 139

Source 3
What do young people think about healthy eating?
'We lack money here to stay healthy ... Our family is unable to find good jobs.' Girl, 16, India
'Food is not available. We have money to buy meat, but the place is too far away.' Girl, 14, Ghana
'Unhealthy food is easier to come by.' Boy, 7, USA
'I work ... to have money, then I will buy food for my family.' Boy, 12, the Sudan

Source: UNICEF, The State of the World's Children 2019: Children, food and nutrition: Growing well in a changing world, UNICEF, New York, 2019, pp. 28 and 27

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Key terms provide a glossary for each topic to help understanding.

Every topic finished with a set of exam questions, including past VCAA exam questions.

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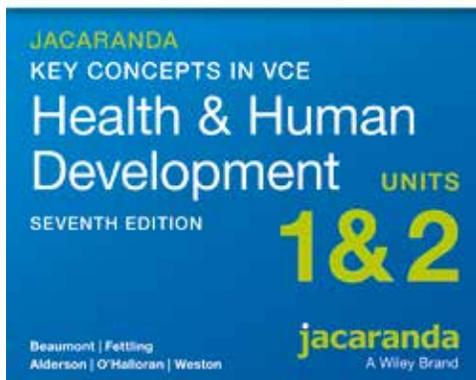
Online questions with a 1:1 correspondence to questions in print.

Access to every relevant past VCAA exam question since 2006, mapped to subtopics.



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Exam terminology

The following terms are often used in the Health and Human Development exam. Refer back to this list when answering the topic practise exam questions to ensure you understand what each question is asking you to do.

Key term	What does it mean?
Analyse	Examine the components of; Look for links, patterns, relationships and anomalies
Apply	Use your knowledge in the given case study/scenario
Assess	Weigh up the value of
Comment	Make relevant remarks about
Compare	Show similarities and/or differences
Contrast	Show differences
Define	Give the precise meaning of
Describe	Provide a general description
Discuss	Give an overall account of
Draw conclusions	Make reasoned decisions or judgement
Evaluate	Make a judgement, weigh up the pros and cons
Explain	Make plain, make clear (may require reasons)
How	The way in which something happens
Identify	List, state
Illustrate	Use examples to show understanding
Justify	Give reasons and/or evidence to support a point of view
List	Make brief points
Outline	Give an overview, a brief summary
Suggest	State ideas
To what extent	Describe the degree or level to which a statement, opinion or contention is correct or valid
What	Provide information about something
Why	Give the reason for something

UNIT

3 Australia's health in a globalised world

AREA OF STUDY 1 UNDERSTANDING HEALTH AND WELLBEING

OUTCOME 1

Explain the complex, dynamic and global nature of health and wellbeing, interpret and apply Australia's health status data and analyse variations in health status

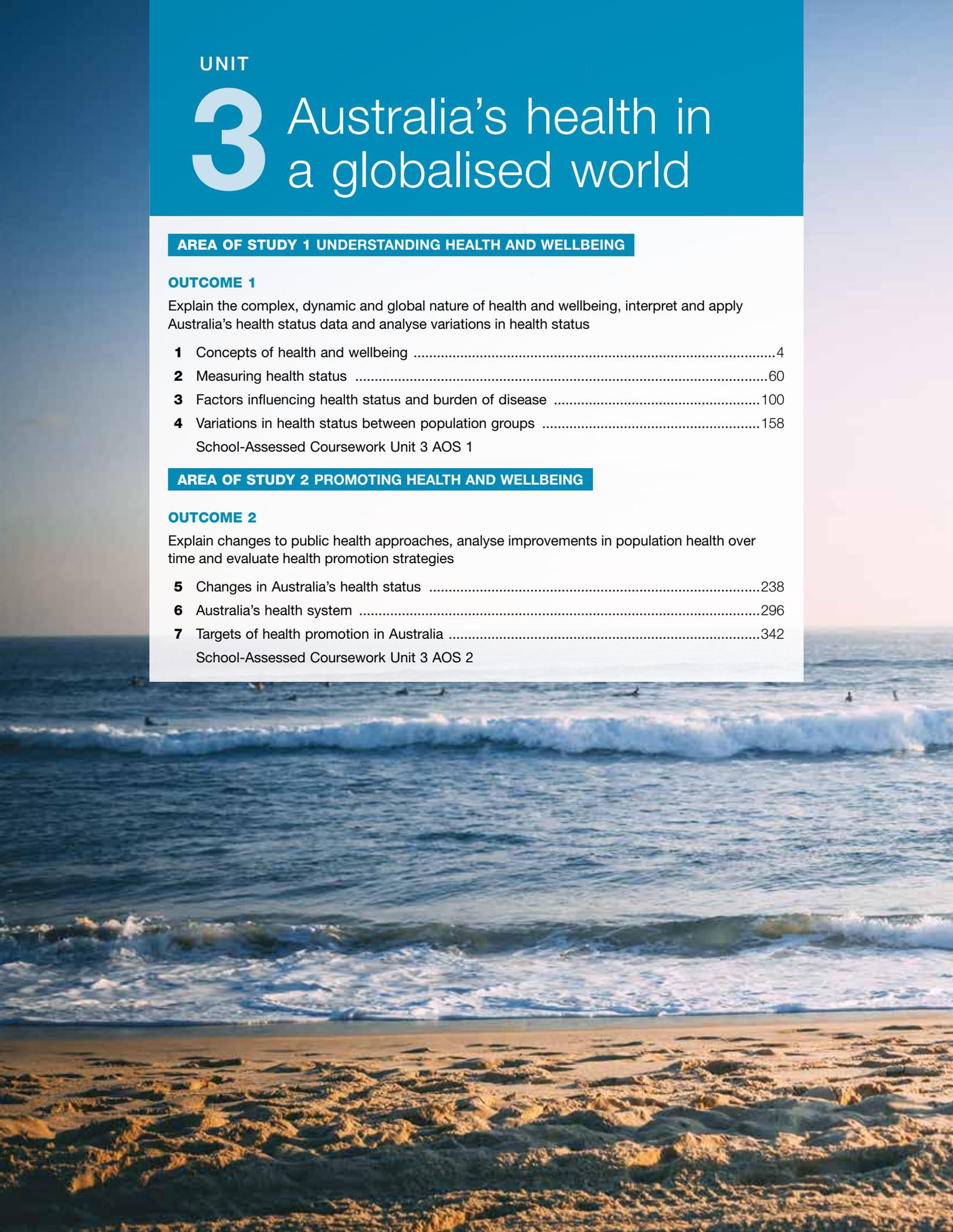
1	Concepts of health and wellbeing	4
2	Measuring health status	60
3	Factors influencing health status and burden of disease	100
4	Variations in health status between population groups	158
School-Assessed Coursework Unit 3 AOS 1		

AREA OF STUDY 2 PROMOTING HEALTH AND WELLBEING

OUTCOME 2

Explain changes to public health approaches, analyse improvements in population health over time and evaluate health promotion strategies

5	Changes in Australia's health status	238
6	Australia's health system	296
7	Targets of health promotion in Australia	342
School-Assessed Coursework Unit 3 AOS 2		

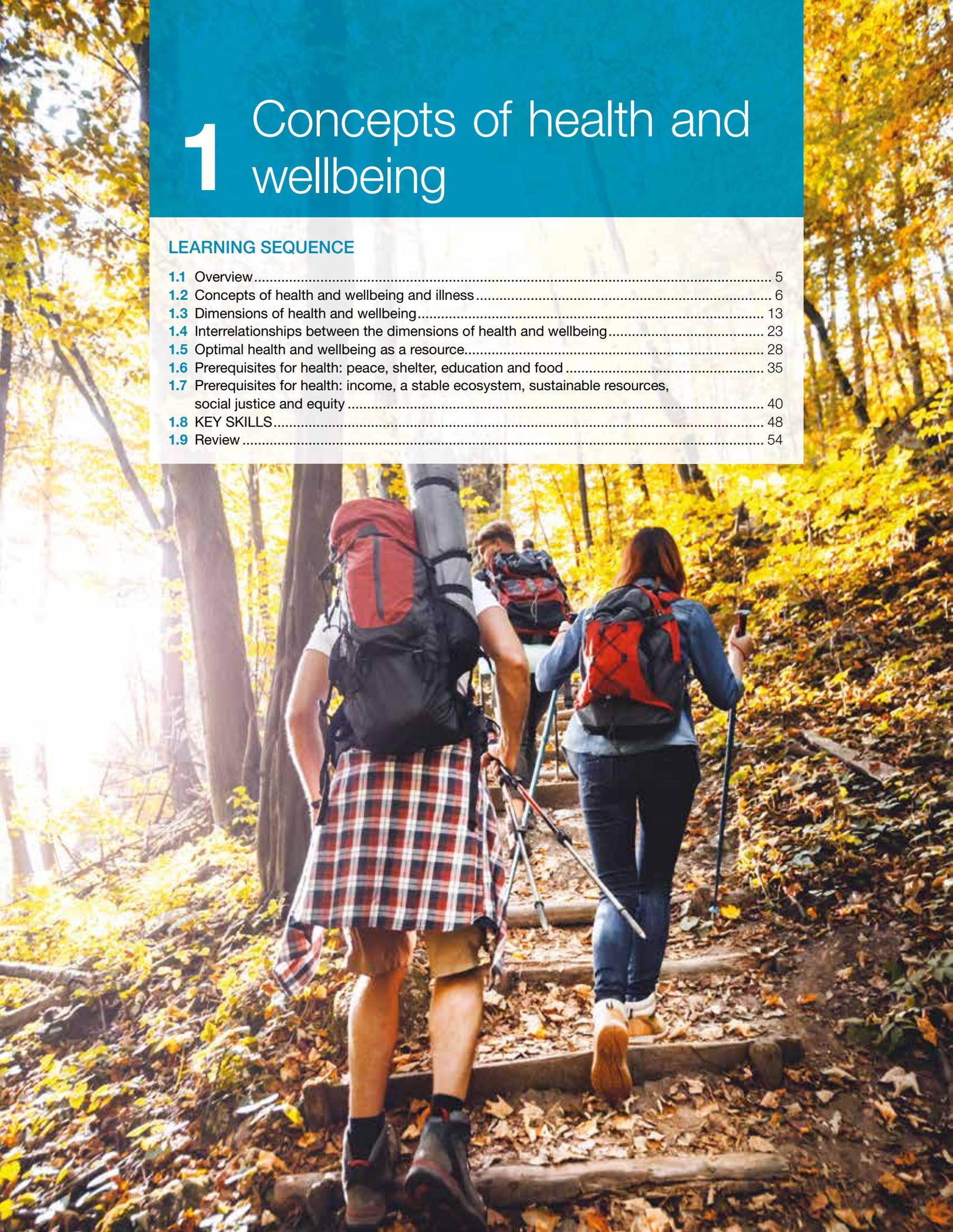




1 Concepts of health and wellbeing

LEARNING SEQUENCE

1.1 Overview.....	5
1.2 Concepts of health and wellbeing and illness.....	6
1.3 Dimensions of health and wellbeing.....	13
1.4 Interrelationships between the dimensions of health and wellbeing.....	23
1.5 Optimal health and wellbeing as a resource.....	28
1.6 Prerequisites for health: peace, shelter, education and food.....	35
1.7 Prerequisites for health: income, a stable ecosystem, sustainable resources, social justice and equity.....	40
1.8 KEY SKILLS.....	48
1.9 Review.....	54



1.1 Overview

Key knowledge	Key skill
Concepts of health and wellbeing (including physical, social, emotional, mental and spiritual dimensions) and illness, and the dynamic and subjective nature of these concepts	<p>Explain the dynamic and subjective nature of the concepts of health and wellbeing and illness</p> <p>Describe interrelationships between dimensions of health and wellbeing</p>
Benefits of optimal health and wellbeing and its importance as a resource individually, nationally and globally	<p>Explain the individual and collective importance of health and wellbeing as a resource</p> <p>Describe global benefits of the pursuit of optimal health and wellbeing</p>
Prerequisites for health as determined by the WHO including peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity	Identify the WHO's prerequisites for health and explain their links to improved health outcomes

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Key terms

Chronic condition	Infirmary
Civic participation	Mental health and wellbeing
Communicable diseases	Pandemic
Dimensions of health and wellbeing	Pathogens
Disease	Physical health and wellbeing
Dynamic	Productivity
Emotional health and wellbeing	Social health and wellbeing
Equilibrium	Spiritual health and wellbeing
Health and wellbeing	Subjective
Illness	Vector

Exam terminology

Explain Make plain, make clear (may require reasons)

Describe Provide a general description

Identify List, state



Resources



Digital document

Key terms glossary (doc-36123)



Exam question booklet

Topic 1 Exam question booklet (eqb-0055)

1.2 Concepts of health and wellbeing and illness

KEY CONCEPT Understanding the dynamic and **subjective** nature of the concepts of health and wellbeing and illness

The concepts of ‘health and wellbeing’ and ‘illness’ are explored in this subtopic.

1.2.1 What is health and wellbeing?

Understanding the concept of **health and wellbeing** is important for gaining an accurate awareness of the quality of people’s lives in Australia. This understanding allows areas for improvement to be identified and targeted. A deep understanding of health and wellbeing will also allow for predictions to be made about the likely effect that introduced strategies and actions will have on the people they are targeting. Health and wellbeing are concepts that were usually considered separately in the past. In modern society, however, they are often considered together, and refer to the overall state of a person’s physical, social, emotional, mental and spiritual existence and is characterised by an **equilibrium** in which the individual feels happy, healthy, capable and engaged.

In this section, the terms ‘health’ and ‘wellbeing’ will first be explored separately. Once each term is explored and discussed, the concept of ‘health and wellbeing’ becomes clearer.

In the past, health was often seen as relating to the body (the physical dimension), and more specifically the absence of **disease**. If a person was not sick or in pain, they were seen to be in a good state of health. In 1946 the World Health Organization (WHO) developed the first globally accepted definition of health, which viewed health as a positive concept:

Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or **infirmity**.

Subjective influenced by or based on personal beliefs, feelings or opinions

Health and wellbeing the state of a person’s physical, social, emotional, mental and spiritual existence, characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged

Equilibrium a state of balance and/or calmness

Disease a physical or mental disturbance involving symptoms, dysfunction or tissue damage

Infirmity the quality or state of being weak or ill; often associated with old age

THE WORLD HEALTH ORGANIZATION (WHO)

When delegates first met to form the United Nations in 1945, establishing a global health body was discussed. The World Health Organization officially came to life in 1948 as the branch of the United Nations concerned with promoting health and wellbeing globally. More than 60 years later, the WHO stands as a global health force offering leadership on global health matters, providing direction for research and technical support to countries, and gathering evidence on and assessment of health trends.

FIGURE 1.1 The WHO headquarters in Geneva, Switzerland



This definition was significant because it was the first time that health had been considered as being more than physical health. It also acknowledged that the absence of disease is only one aspect of health, emphasising that health is a positive concept and not only related to whether a person is sick or not.

Although the WHO definition moved beyond the physical characteristics of health, it was still limiting because it doesn’t give everyone the opportunity to be considered healthy. ‘Complete’ wellbeing in all dimensions is difficult to achieve and beyond the capacity of most people.

Forty years after this definition was drafted, it was clarified by adding that ‘to reach a state of complete physical, mental and social wellbeing, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment’. Being healthy is essential in realising aspirations and satisfying needs and, according to the WHO, ‘health is, therefore, seen as a resource for everyday life, not the objective of living’.

The clarification provided by the WHO makes the concept of health more inclusive and achievable. The notion of complete wellbeing is clarified by stating that health is an individual concept and will differ from person to person depending on many factors, such as health outcomes, biological and sociocultural factors, and the environments in which people live.

Although not identified in the original WHO definition, the emotional and spiritual dimensions of health and wellbeing have been an increasing focus as aspects of overall health and wellbeing and will therefore also be considered in this section.

The WHO definition of health makes reference to the concept of ‘wellbeing’. Wellbeing is related to health and has been used frequently in recent years to describe how well an individual is living. Like health, wellbeing is not just the absence of disease or illness. Wellbeing is a concept that takes health outcomes into account, but also considers other factors in a person’s life such as happiness and life satisfaction. Wellbeing is sometimes described as how a person feels about themselves and their life.

FIGURE 1.2 Health and wellbeing moves beyond the physical aspect and includes social, emotional, mental and spiritual health and wellbeing.



FIGURE 1.3 Overall health and wellbeing includes the five dimensions of health and how an individual feels about their life.



As health and wellbeing are closely related concepts, they will be considered together in this study and will be taken to refer to the state of a person’s physical, social, emotional, mental and spiritual existence and is characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged (see **FIGURE 1.3**).

All aspects of an individual’s life contribute to their overall level of health and wellbeing. The Better Health Channel website identifies a range of factors that are particularly influential on the overall level of health and wellbeing experienced (see **FIGURE 1.4**). Some of these factors, for example ‘a sense of belonging’, relate specifically to a dimension of health and wellbeing (in this case, spiritual). Other factors, such as ‘regular exercise’, influence a dimension of health and wellbeing by enhancing the level of fitness (in this case, physical).

The health and wellbeing experienced by an individual is **dynamic**, meaning that it is constantly changing. These changes are often gradual and may not be obvious as they are happening. For example, gaining weight, the changing nature of relationships, improvements in self-esteem and developing a sense of purpose in life all relate to health and wellbeing, and often occur over a long period of time. Health and wellbeing can also change quickly. It can be good one moment but then events such as accidents, disease, relationship breakdown and stressful events can alter the state of health and wellbeing rapidly. Health and wellbeing also has the potential to improve quickly. A person with a migraine who is experiencing poor health and wellbeing can rest and possibly take medication that can return them to good health and wellbeing. A person experiencing grief after the loss of a loved one may learn strategies to help them deal with their feelings of loss, which can improve their health and wellbeing.

Dynamic continually changing

FIGURE 1.4 The Better Health Channel identifies a range of factors that are particularly influential on overall health and wellbeing.

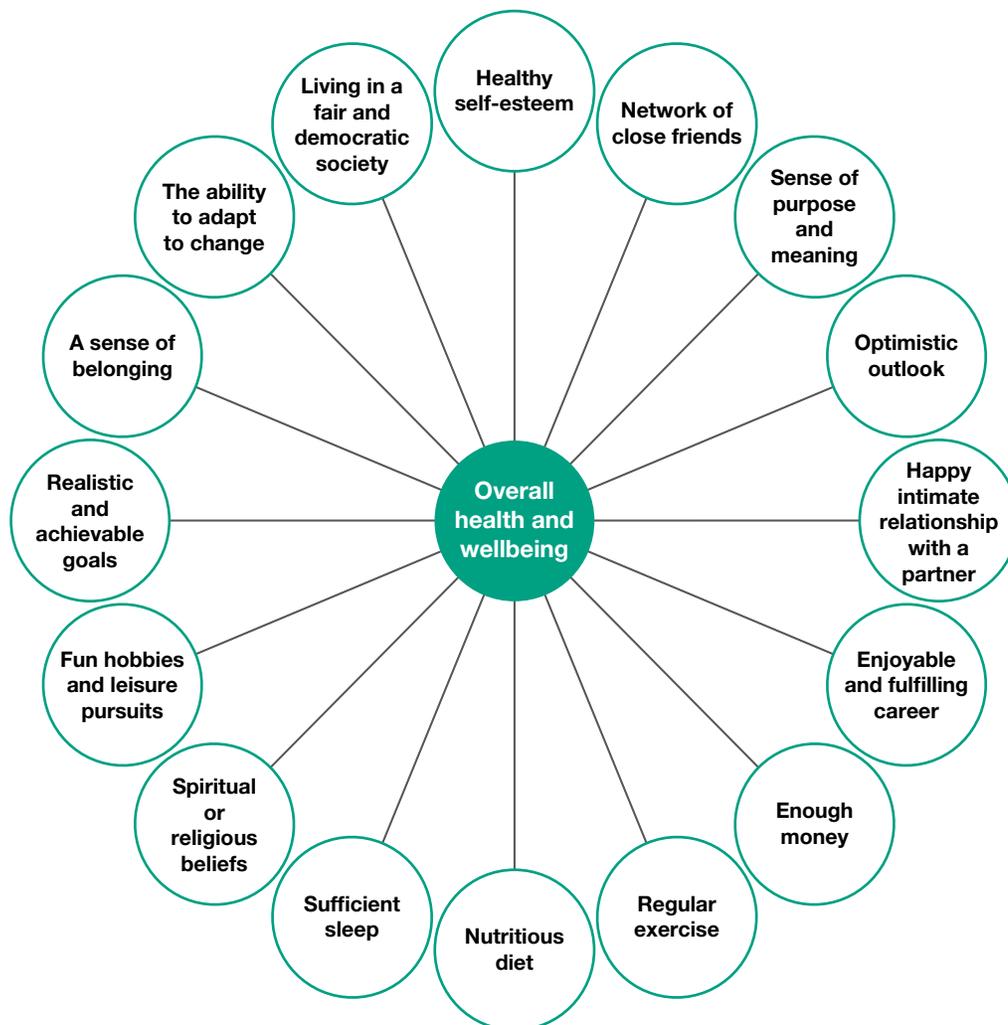
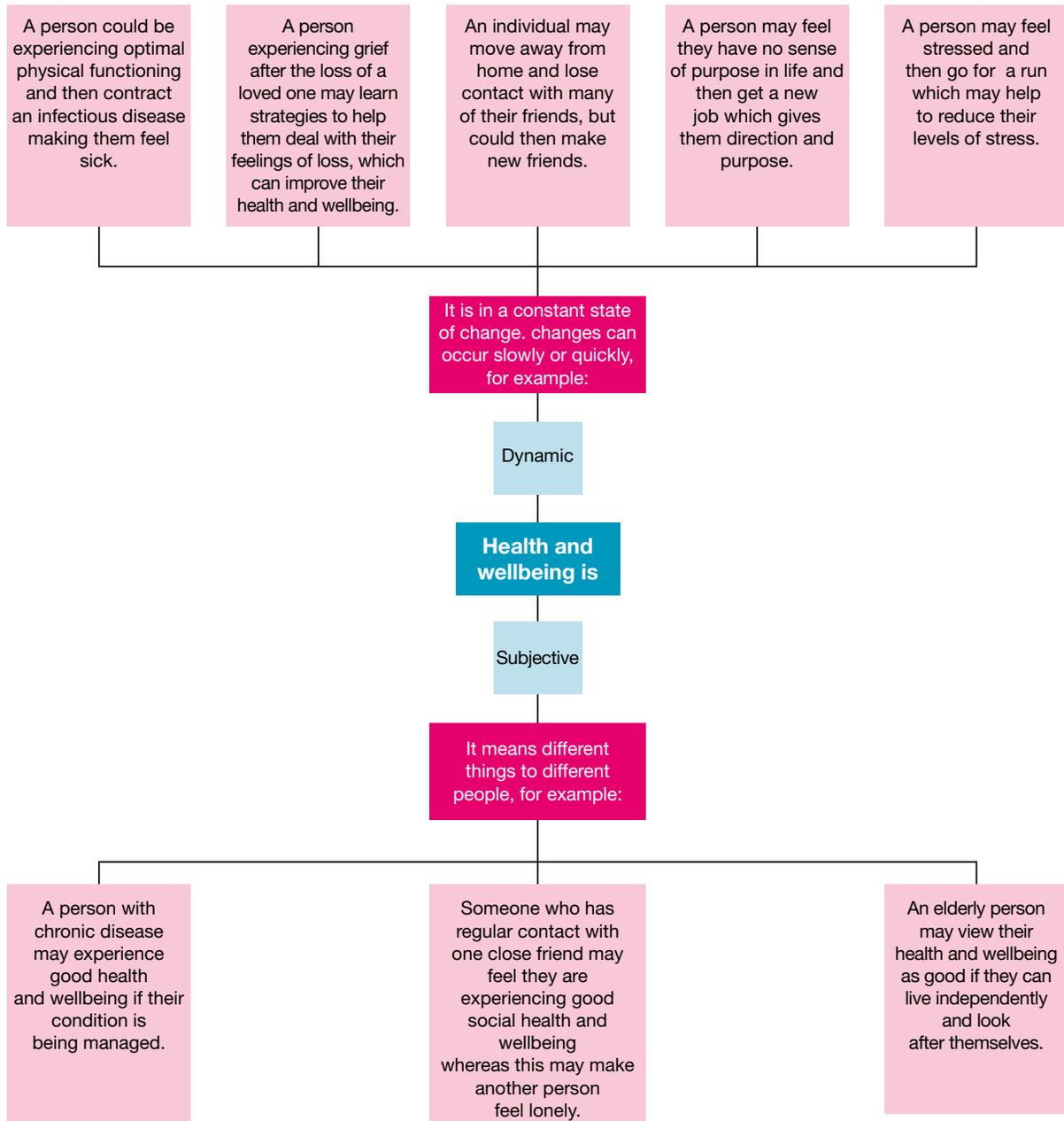


FIGURE 1.5 Health and wellbeing is dynamic and subjective.



In modern times, the concept of health and wellbeing is viewed in many different ways and is therefore said to be subjective. Although not being sick is still a fundamental aspect of health and wellbeing for most people, a number of factors influence the way people view health and wellbeing such as age, fitness, body weight, social networks, income, occupation, education, media and culture. For example:

- The state and functioning of the body often deteriorate over time, so an elderly person may view health and wellbeing as the ability to carry out tasks independently such as living in their own home, cooking, cleaning, washing, shopping and socialising. As people get older, the absence of disease may be particularly important in relation to health and wellbeing.
- A person with a **chronic condition** may see health and wellbeing in relation to the management of their condition. If their condition is being adequately managed and is having minimal impact on their life, they may see themselves as experiencing good health and wellbeing.

Chronic condition any disease or condition that lasts a long time (usually longer than six months). It usually can't be cured and therefore requires ongoing treatment and management. Examples include arthritis and asthma.

- An elite sportsperson may view health and wellbeing as the absence of sport-related injuries, the ability to train at full capacity, high levels of fitness and the ability to compete at the highest level.
- Parents of young children may view health and wellbeing as a concept related to their ability to function in their job, spend time with their children and provide for their family.
- A Year 12 student may see health and wellbeing as a concept related to their academic performance, sporting participation and physical and social functioning.
- A person living in a community with severe health concerns, such as in an aged care facility or nursing home, might consider themselves in a state of positive health and wellbeing if they are less sick than their peers, even if they have a serious disease or illness.
- Aboriginal and Torres Strait Islander peoples often relate optimal health and wellbeing to having a strong connection to Country and their cultures and histories (see the following case study on Aboriginal and Torres Strait Islander peoples' perspectives).

CASE STUDY

Aboriginal and Torres Strait Islander peoples' perspectives on health and wellbeing

Land is fundamental to the wellbeing of Aboriginal and Torres Strait Islander peoples. The land is not just soil or rocks or minerals, but a whole environment that sustains and is sustained by people and culture. For First Nation Australians, the land is the core of all spirituality and 'Caring for Country' is a very important responsibility taken on by many Aboriginal and Torres Strait Islander communities.

Australia's Aboriginal and Torres Strait Islander peoples managed land and sea resources very carefully for thousands of years, and there is archaeological evidence of permanent settlements and farming techniques, with each community having its own territory from which they 'made their living'. These territories or 'traditional lands' are defined by geographic boundaries such as rivers, lakes and mountains. The different environments are understood and cared for.

We cultivated our land, but in a way different from the white man. We endeavoured to live with the land; they seemed to live off it. I was taught to preserve, never to destroy.

Aboriginal elder Tom Dystra

This knowledge of the land is linked to exceptional knowledge and understanding of Country. This includes the ability to track down animals, to identify and locate edible plants, to find sources of water and fish.

Aboriginal and Torres Strait Islander peoples identify themselves through their land areas, their relationship to others and their language and stories, which may be expressed through ceremony, the arts, family, religion, and sports. Cultural heritage is passed on from one generation to the next.

There were about 600 different clan groups or 'nations' around the continent when Europeans arrived, with distinctive cultures and beliefs. Their 'territories' ranged from lush woodland areas to harsh desert surroundings. Different groups developed different skills and built a unique body of knowledge based on their particular environment.

The system of kinship puts everybody in a specific relationship to each other as well as special relationships with land areas based on their kin. These relationships have roles and responsibilities attached to them.

Kinship influences marriage decisions and governs much of everyday behaviour. By adulthood, people know exactly how to behave, and in what manner, to all other people around them as well as in respect to specific land areas. Kinship is about meeting the obligations of one's community, and forms part of First Nations' beliefs and values. This is sometimes known as the Dreaming, the English word used to label the systems of beliefs about life, culture and spirituality of Australian First Nations peoples.

FIGURE 1.6 The land is particularly important for the health and wellbeing of Aboriginal and Torres Strait Islander peoples.



Language is vitally important in understanding the rich cultures and heritage of Aboriginal and Torres Strait Islander peoples as much of their history is an oral history. Hundreds of languages and dialects existed (although many are now extinct), and language meaning, as well as geographic location, is used today to identify different groups.

Source: Adapted from <http://www.australia.gov.au/about-australia/australian-story/austn-indigenous-cultural-heritage>.

CASE STUDY REVIEW

1. Explain ways that land promotes health and wellbeing of Aboriginal and Torres Strait Islander Australians.
2. How does Tom Dystra compare the use of land between First Nations and other Australians?
3. Discuss how kinship can promote health and wellbeing among Aboriginal and Torres Strait Islander Australians.

1.2.2 Illness

Illness is a concept that relates to negative aspects of health and wellbeing. Disease is a term that is often associated with illness and, although these concepts are related, they are not the same. According to the Australian Institute of Health and Welfare (2014), ‘a disease is a physical or mental disturbance involving symptoms, dysfunction or tissue damage, while illness is a more subjective concept related to personal experience of a disease’. Just as wellbeing relates to how an individual feels about and experiences their health, illness relates to how a person feels about, and experiences, disease and injury.

Diseases can be physical or mental in nature and can range from mild discomfort to severe pain. Injuries also vary significantly in their severity. Just like health and wellbeing, the level of illness changes constantly as a person experiences disease or injury. These changes may be rapid and produce obvious changes, such as the breaking of a bone, or gradual and difficult to notice, such as the healing of a broken bone. Many diseases and injuries follow a particular course and may get worse initially, and then over time often have the potential to improve with treatment and rest, causing levels of illness to change as well.

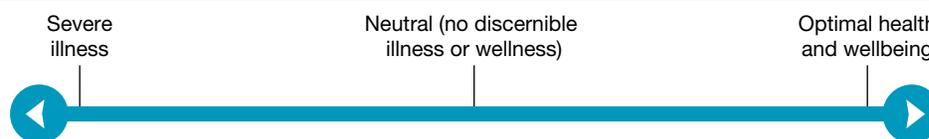
Although some diseases and injuries are chronic, others can come and go, which further contributes to illness being a dynamic concept.

Different people may experience diseases and injuries in different ways. This can affect the level of illness experienced and reflects the subjective nature of this concept. An individual’s level of illness may be influenced by a range of factors including the number and severity of the diseases experienced, the age of the individual and past experiences of disease and injury. For example, a person with a high threshold for pain may experience a lower level of illness than a person with a low threshold for pain, even if their diseases are the same. A person with low levels of social support and few people to help them through their disease may experience a higher level of illness than a person with adequate social support. Two people with the same disease may experience different levels of illness as a result of their past experiences with disease.

The concepts of health and wellbeing and illness can be considered as a continuum, with optimal health and wellbeing at one end, and severe illness down the other (see **FIGURE 1.7**). Those in the middle of the continuum would not be experiencing optimal health and wellbeing or severe illness, but would sit somewhere in between.

Illness a subjective concept related to personal experience of a disease or injury

FIGURE 1.7 Health and wellbeing and illness can be considered as a continuum.



1.2 Activities

1. Draw and annotate a picture of a person displaying characteristics of good health and wellbeing. Compare your results with others in the class.
2. Conduct a survey to collect information on what health and wellbeing means to a range of people. Collate your results and prepare a brief report summarising your findings.

1.2 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

1.2 Quick quiz

on

1.2 Exercise

1.2 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6, 7, 8, 10, 11

■ LEVEL 3

9, 12

Test your knowledge

1. What is the WHO definition of health? Why might this definition have its limitations?
2. Why was the WHO definition of health significant when it was written?
3. Briefly explain what is meant by 'health and wellbeing'.
4. Identify the five dimensions of health and wellbeing.
5. How is health and wellbeing different from illness?
6. Briefly explain the difference between disease and illness.

Apply your knowledge

7. Devise your own definition of health and wellbeing. Share your results with others in the class.
8. Select three factors identified in **FIGURE 1.4** and brainstorm ways that each one could impact on overall health and wellbeing.
9. Select two factors from question 8 and explain how each may influence how the individual views health and wellbeing.
10. Briefly explain why health and wellbeing and illness can be considered on a continuum.
11. Brainstorm factors that could contribute to different levels of illness experienced by two people with the same disease.
12. Create a graphic summarising the dynamic and subjective nature of illness including appropriate examples. Use the format of **FIGURE 1.5** to guide your response.

1.2 Quick quiz

on

1.2 Exercise

1.2 Exam questions

Question 1 (2 marks)

Source: VCE 2013, *Health and Human Development, Section B, Q.2.a (adapted)*; © VCAA

Men's Shed is an initiative of the Australian Men's Shed Association. It has been developed in many local communities across Australia, and it offers men an opportunity to socialise with other men in their community and learn new skills, such as woodworking and the restoration of old furniture.

The Australian Men's Shed Association is a not-for-profit organisation that is funded by the Federal Government. It is now the largest association in Australia focused on men's health and wellbeing.

Source: adapted from <http://www.mensshed.org>

Outline two ways in which this initiative could improve men's health and wellbeing.

Question 2 (2 marks)

Explain with an example why health and wellbeing is more than the absence of illness or injury.

Question 3 (2 marks)

List two dimensions of health and wellbeing.

Question 4 (2 marks)

Define 'health and wellbeing'.

More exam questions are available in your learnON title.

1.3 Dimensions of health and wellbeing

KEY CONCEPT Exploring the dimensions of health and wellbeing

The WHO definition of health acknowledges that there are a range of **dimensions of health and wellbeing** — namely the physical, mental and social dimensions. In recent years, there has been an increased focus on the emotional and spiritual dimensions of health and wellbeing, which will also be considered in this subtopic.

The physical dimension of health and wellbeing is often the easiest to observe and as a result, is the main focus of individuals, groups, government organisations and non-government organisations. Most statistics relating to health and wellbeing also tend to focus on the physical dimension. However, it is important to remember that the physical dimension is only one part of health and wellbeing, and as the social, emotional, mental and spiritual dimensions also contribute to a person's overall level of health and wellbeing, they will also be discussed in this subtopic and referred to throughout the remainder of this book.

1.3.1 Physical health and wellbeing

'**Physical health and wellbeing** relates to the functioning of the body and its systems; it includes the physical capacity to perform daily activities or tasks. Physical health is supported by factors such as regular physical activity, consuming a balanced diet, having appropriate rest/sleep, maintaining an ideal body weight, and the absence of illness, disease or injury' (VCAA, 2017).

EXAM TIP

The five dimensions of health and wellbeing are defined in the VCAA document 'Advice for Teachers'. The definitions provided are quite detailed and do not necessarily have to be memorised. The definition of each dimension in the margin definitions of this topic provide a summary version, with the whole definition included as each dimension is discussed. The mark allocation should be used as a guide to determine how much detail to include for any 'definition' or 'explanation' question.

Simply 'not being sick' is perhaps the most basic level of physical health and wellbeing, but there are many other aspects of the physical dimension. A person may be free from disease and injury, but may not have enough energy or strength to complete the tasks they need to. They may be unfit or overweight, all of which relate to physical health and wellbeing. It is only when the whole body and its systems are functioning to the best of their ability that a person can be considered as having optimal physical health and wellbeing.

Having a balanced diet, doing regular physical activity and getting enough rest and sleep are all factors that support physical health and wellbeing. Although these factors *promote* physical health and wellbeing, it is important to note that they are not specifically part of the body or its systems and are therefore not considered to be characteristics of physical health and wellbeing.

Dimensions of health and wellbeing these are the components that make up an individual's overall health and wellbeing. The dimensions are physical, social, emotional, mental and spiritual

Physical health and wellbeing relates to the functioning of the body and its systems; it includes the physical capacity to perform daily activities or tasks

Someone with optimal physical health and wellbeing may demonstrate the characteristics displayed in **FIGURE 1.8**.

FIGURE 1.8 Characteristics of optimal physical health and wellbeing



1.3.2 Social health and wellbeing

‘**Social health and wellbeing** relates to the ability to form meaningful and satisfying relationships with others and the ability to manage or adapt appropriately to different social situations. It also includes the level of support provided by family and within a community to ensure that every person has equal opportunity to function as a contributing member of the society. Social health and wellbeing is supported by strong communication skills, empathy for others and a sense of personal accountability’ (VCAA, 2017).

The quality of relationships that individuals have with others is a key aspect of social health and wellbeing. Humans are social beings and interacting with others is an important aspect of human existence. Sometimes these interactions are positive and add value to life. When an individual has a supportive group of friends, a supportive and well-functioning family and maybe an intimate relationship with another person, their social health and wellbeing is optimal. At other times, such interactions may not be as effective: a person may be in conflict with friends and family, or in the process of breaking up with a partner. Under these circumstances, social health and wellbeing would not be considered optimal. Like all dimensions of health and wellbeing, there will be changes over time. When optimal social health and wellbeing is not being experienced, there is potential for improvement.

Throughout the course of a typical day, most people will find themselves in a range of social situations, interacting with school friends, family members, employers, coaches and teachers. Being able to effectively adapt to different social interactions by adjusting behaviour and communication enhances social experiences and contributes to higher levels of social health and wellbeing.

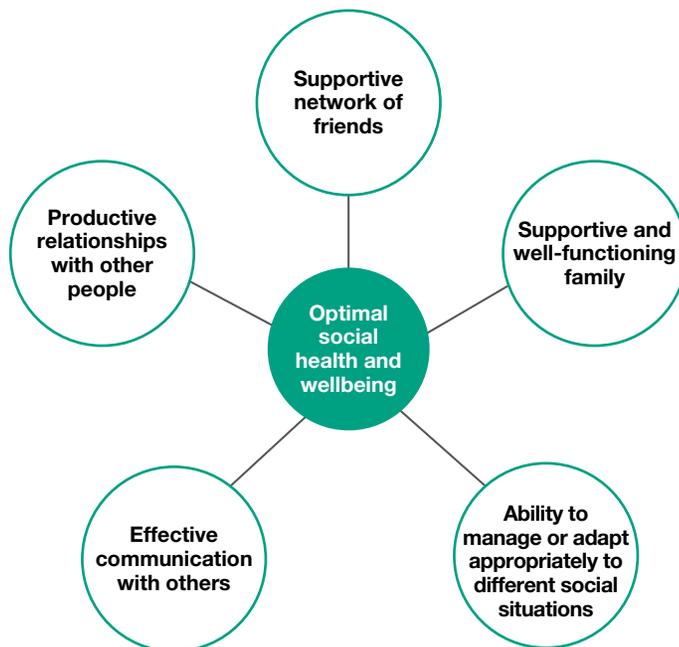
FIGURE 1.9 A supportive network of friends is an aspect of optimal social health and wellbeing.



Social health and wellbeing relates to the ability to form meaningful and satisfying relationships with others and the ability to manage or adapt appropriately to different social situations. It also includes the level of support provided by family and within a community to ensure that every person has equal opportunity to function as a contributing member of the society

Factors relating to optimal social health and wellbeing are identified in **FIGURE 1.10**.

FIGURE 1.10 Characteristics of optimal social health and wellbeing

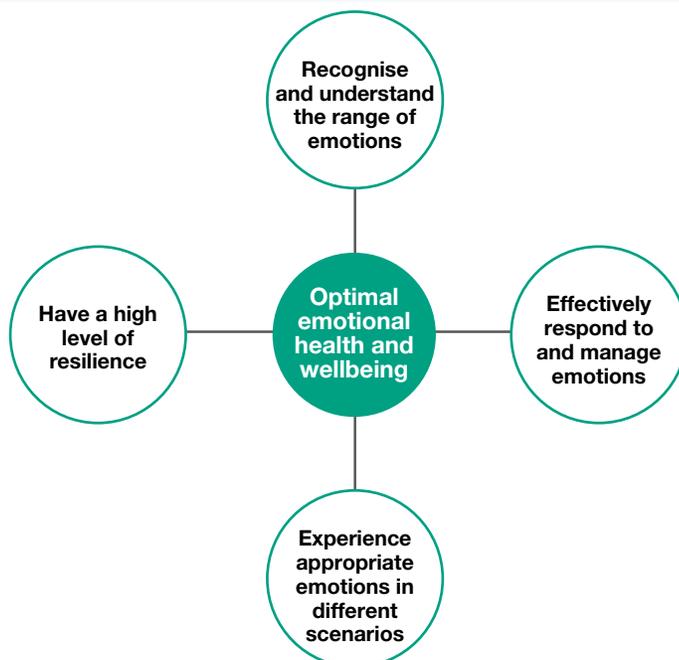


1.3.3 Emotional health and wellbeing

‘**Emotional health and wellbeing** relates to the ability to express emotions and feelings in a positive way. Emotional health and wellbeing is about the positive management and expression of emotional actions and reactions as well as the ability to display resilience. Emotional health and wellbeing is the degree to which an individual feels emotionally secure and relaxed in everyday life’ (VCAA, 2017). Characteristics associated with optimal emotional health and wellbeing are identified in **FIGURE 1.11**.

Emotional health and wellbeing relates to the ability to express emotions and feelings in a positive way. Emotional health and wellbeing is about the positive management and expression of emotional actions and reactions as well as the ability to display resilience. Emotional health and wellbeing is the degree to which an individual feels emotionally secure and relaxed in everyday life

FIGURE 1.11 Characteristics of optimal emotional health and wellbeing



Experiencing a variety of emotions is part of human life. Researchers have identified a range of emotions, including:

- anger
- fear
- sadness
- disgust
- embarrassment
- surprise
- happiness
- excitement
- satisfaction
- amusement.

Although the basic emotions are experienced by most people at some stage in their lives, they often experience them in different ways and in different circumstances. Consider embarrassment. Some people may feel embarrassed in a situation that would not cause embarrassment to others. They may also experience different degrees of embarrassment ranging from slight discomfort to severe anxiety. The situations in which embarrassment is experienced, and the manner in which it is experienced, are often influenced by the individual's level of emotional health and wellbeing.

People rarely experience one emotion on its own and are more likely to experience a mix of emotions. For example, changing schools as a child might trigger a range of emotions ranging from excitement to anxiety. These emotions can exist at the same time or occur one after the other. An emotionally healthy individual would recognise these emotions and be able to manage them effectively.

FIGURE 1.12 Humans experience a range of emotions. When experienced at appropriate times, emotional health and wellbeing is more likely to be optimal.



The manner in which people recognise and respond to the emotions they experience can either promote or detract from their overall health and wellbeing. When an individual can accurately identify the emotion experienced, acknowledge why they are feeling a certain way, and act on the emotion in a responsible and mature manner, emotional health and wellbeing is said to be optimal. This does not mean that the individual only experiences positive or desirable emotions such as happiness and amusement. Emotions such as anger, sadness and fear are an important part of life and are appropriate in many scenarios. They can assist in identifying aspects of life that require attention. Research shows that experiencing and accepting such emotions is vital to our overall health and wellbeing, and trying to block these emotions can actually contribute to poor health and wellbeing. However, if these emotions become excessive, irrational, distressing or interfere with daily activities, emotional health and wellbeing can be adversely affected.

Resilience relates to the ability to effectively deal with adverse or negative events and the associated emotions that occur throughout life. Such events include the death of a loved one, relationship breakdown, conflict with family and friends, financial stress and job loss. When these events occur, it is natural to experience a range of negative emotions. A resilient individual will recognise, process, acknowledge and respond to these emotions effectively, which assists in recovering from negative experiences. An individual's level of resilience can fluctuate over time and is influenced by a range of factors including levels of stress and social support. Having high levels of resilience is a key component of optimal emotional health and wellbeing.

1.3.4 Mental health and wellbeing

'**Mental health and wellbeing** is the current state of the mind or brain and it relates to the ability to think and process information. A mentally healthy brain enables an individual to positively form opinions, make decisions and use logic. Mental health and wellbeing is about the wellness of the mind rather than illness. Mental health and wellbeing is associated with low levels of stress and anxiety, positive self-esteem, as well as a sense of confidence and optimism' (VCAA, 2017). The human mind is a complex thing, and it is what sets us apart from other animals. The way the mind functions determines mental health and wellbeing. When stress levels are low and a person feels relaxed and positive about themselves and life, mental health and wellbeing can be said to be optimal. Conversely, if a person is stressed and experiencing negative thought patterns about themselves, others, or the world in general, mental health and wellbeing may not be optimal.

Mental disorders are often associated with poor mental health and wellbeing, but these concepts are not the same. Mental disorders relate to conditions that significantly impact thought processes and mental functioning, such as depression and anxiety. Mental health and wellbeing, on the other hand, relates to the overall functioning of the mind and can be positive or negative. All people have a level of mental health and wellbeing, whereas only some people have a mental disorder. Mental disorders have the potential to contribute to high levels of illness if they are not managed appropriately.

Self-esteem refers to how people feel about themselves. Having positive self-esteem means that people feel good about themselves. Self-esteem influences behaviour, as those with positive self-esteem are more likely to speak their mind and act independently and responsibly.

FIGURE 1.13 Stress levels contribute significantly to the overall level of mental health and wellbeing experienced.



Mental health and wellbeing the current state of wellbeing relating to a person's mind or brain and the ability to think and process information. A mentally healthy brain enables an individual to positively form opinions, make decisions and use logic

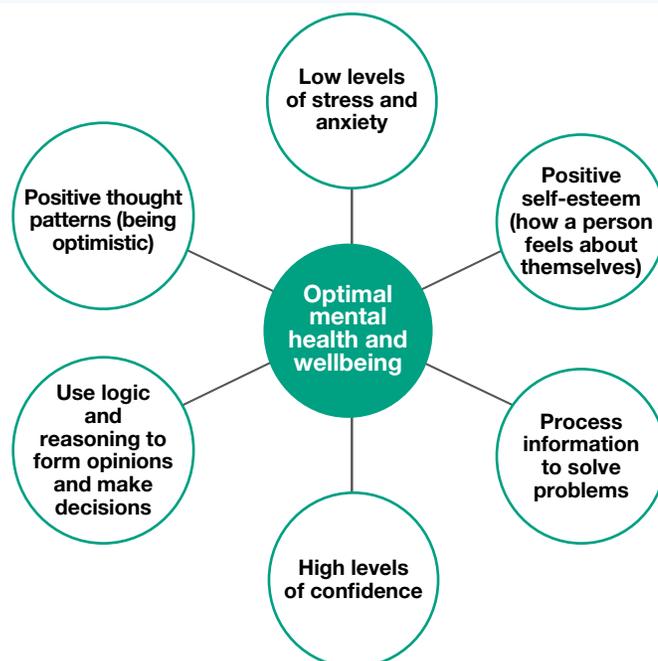
Confidence relates to believing in one's own worth and ability to succeed. Having confidence can help people accept challenges, such as volunteering to give a speech or trying out for a sports team, and increase their chances of success because they are not concentrating on failure.

Individuals may have different levels of confidence in different aspects of their lives. Although it is based on past experiences, confidence can change rapidly as a result of factors such as one's personal appearance or comments made by others.

Thought patterns are often referred to as one's 'frame of mind' and relate to the attitude a person has regarding their thoughts and the situations in which they find themselves. Positive thought patterns assist individuals in navigating day-to-day life and dealing with any challenges that present. Negative thought patterns, on the other hand, can cause individuals to focus on negative aspects of situations even if the negative aspect is a relatively minor part of the whole situation. This can increase levels of stress and anxiety and contribute to negative self-esteem. For example, Year 12 students who do not get the ATAR they were hoping for can look at the situation in a number of different ways. One person may think 'I will still find a course I will enjoy', whereas another may think 'My career will be completely ruined now'. Like all aspects of health and wellbeing, thought patterns often change over time and can even change over the course of a single day.

As with the other dimensions of health and wellbeing, there are a number of characteristics relating to the mental health and wellbeing experienced by an individual. These are summarised in **FIGURE 1.14**.

FIGURE 1.14 Characteristics of optimal mental health and wellbeing



WHAT IS THE DIFFERENCE BETWEEN EMOTIONAL AND MENTAL HEALTH AND WELLBEING?

Although emotional and mental health and wellbeing are related, they are not the same. Emotional health and wellbeing relates to appropriately experiencing, identifying and managing emotions, whereas mental health and wellbeing relates to the nature of feelings and thoughts that a person is having. Good emotional health and wellbeing does not mean that emotions and feelings are always positive. In fact, experiencing only positive emotions and feelings can indicate that emotional health and wellbeing is not optimal. As humans, we all experience negative events which can, and should, cause us to experience negative emotions and feelings. During these times, mental health and wellbeing may not be optimal, but if the emotions and feelings experienced are appropriate for the given situation, emotional health and wellbeing can be considered positive.

Experiencing stress is an aspect of mental health and wellbeing, but the manner in which the individual recognises and deals with the associated emotions relates to emotional health and wellbeing. For example, the stress of the loss of a loved one is an event that often causes mental health and wellbeing to be impacted in a negative way. The person may feel sad and experience grief. An emotionally healthy person can identify and acknowledge these feelings and manage them appropriately.

‘Emotions’ and ‘mood’ are two terms that are often interpreted as meaning the same thing, but they are distinct concepts. Emotions usually relate to emotional health and wellbeing, and moods often relate to mental health and wellbeing. Emotions are often experienced in the short term, but they can be intense. Emotions are also likely to have a distinct and identifiable cause, such as a disagreement with a friend, the loss of a loved one, experiencing success at school or being around people who make you happy. Mood is more closely related to mental health and wellbeing, and is usually milder than an emotion but longer lasting. In many cases, the cause of a mood is difficult to identify. For example, a person might feel particularly gloomy or optimistic for a number of days without any specific reason.

1. Using examples, explain the difference between mental and emotional health and wellbeing.
2. Does optimal emotional health and wellbeing mean never feeling sad or down? Explain.

1.3.5 Spiritual health and wellbeing

‘**Spiritual health and wellbeing** is not material in nature, but relates to ideas, beliefs, values and ethics that arise in the minds and conscience of human beings. Spiritual health and wellbeing includes the concepts of hope, peace, a guiding sense of meaning or value, and reflection on a person’s place in the world. Spiritual health and wellbeing can be highly individualised; for example, in some traditions, spiritual health and wellbeing may relate to organised religion, a higher power and prayer, while in other practices it can relate to morals, values, a sense of purpose in life, connection or belonging’ (VCAA 2017).

A sense of belonging is a human need. A sense of belonging occurs when a person feels like a member or a part of the society or world in which they live. Belonging assists in seeing value in life and can help in dealing with painful experiences. Individuals who have a sense of belonging realise that everyone goes through hard times and that they are not alone. They are also more likely to feel supported in times of need. When individuals feel that they are connected to others and to the world in general, they are more likely to find positive aspects in negative events and deal with these situations in a more positive manner. Many people join clubs or organisations to help satisfy the need to belong, but this can also occur in informal ways such as friendship groups and daily interactions with others. All people can make a difference to the world they live in and doing this promotes feelings of belonging. People often find a sense of belonging in a range of different settings, including:

- family
- friendship groups
- volunteer groups
- sporting and social clubs
- the workplace
- school
- place of worship (such as temple, church, mosque or synagogue).

Establishing values and beliefs is a key component of spiritual health and wellbeing. Values relate to what an individual feels is important in life, and can include valuing family connections or freedom of speech. Beliefs relate to what an individual feels to be true or right, even though the belief may be unproven, such as the belief in life after death. Examples of values and beliefs are shown in **TABLES 1.1** and **1.2**. Both values and beliefs guide the behaviours of individuals and influence the decisions they make. If a person values physical fitness for example, they may be less likely to binge drink or overconsume unhealthy foods. Living according to one’s values and beliefs can assist in promoting a sense of satisfaction with life.

Spiritual health and wellbeing relates to ideas, beliefs, values and ethics that arise in the minds and conscience of human beings. It includes the concepts of hope, peace, a guiding sense of meaning or value, and reflection on your place in the world.

TABLE 1.1 Examples of values

Values
Education
Tidiness
Fitness
Listening
Acceptance
Creativity
Career success
Wealth
Manners
Appearance
Fun
Socialisation

TABLE 1.2 Examples of beliefs

Beliefs
God exists.
The mind can cure the body.
All people are created equal.
The planet is a resource to be used for human gain.
There is life after death.
Heaven exists.
It is wrong to steal.
Animals have rights.
Immigration should be encouraged.
People evolved through evolution.
Wealth should be shared equally.
Success is achieved through hard work.

Finding meaning and purpose in human existence and determining what is meaningful in our own lives are related to values and beliefs, which are key characteristics of spiritual health and wellbeing. Meaning and purpose relate to an individual's sense of who they are and why they were born. Throughout history, humans have asked themselves what are sometimes referred to as 'life's ultimate questions':

- Who am I?
- Why am I here?
- What is the meaning of my life?

Although these questions may not be asked specifically or consciously, they form the basis for which people decide what they value and what they want to do and achieve in their life. The answers to these questions formulate an individual's meaning and purpose in life. Examples of purpose include:

- To tear down the walls that separate people who have significant disabilities from people who are able bodied.
- To speak up for the rights of all living creatures to ensure that all can live in harmony.
- To assist children in realising their true potential by challenging them and encouraging them to be their best.
- To create music that brings joy to people from all walks of life.

Peace and harmony are often characteristic of positive spiritual health and wellbeing. Accepting that we cannot control all that happens in our life, and looking for positives in all situations, can contribute to a level of health and wellbeing that enables people to deal more effectively with misfortune.

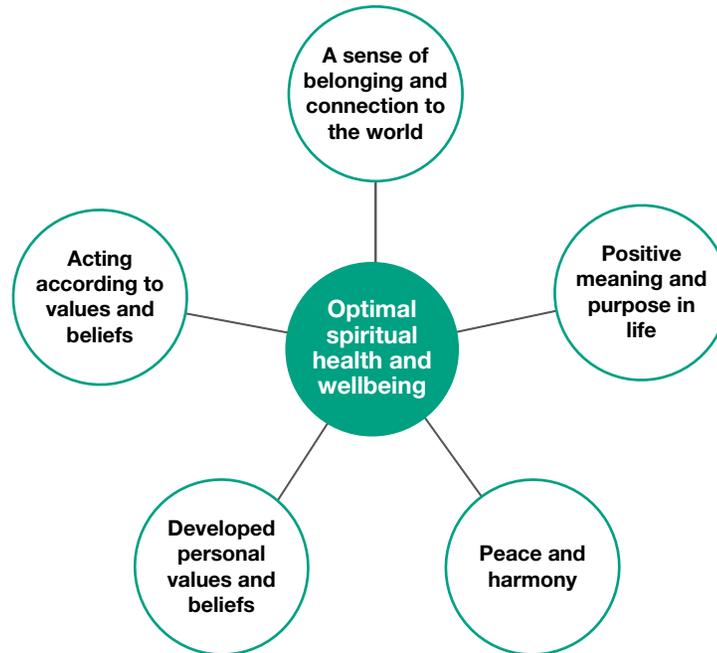
Many people associate religion with spirituality. Religion provides a structured and organised form of spirituality, but spirituality exists for many people without connection to an organised religion.

Characteristics of optimal spiritual health and wellbeing are shown in **FIGURE 1.16**.

FIGURE 1.15 Peace and harmony are characteristics of spiritual health and wellbeing, and they can be promoted by practices such as yoga and meditation.



FIGURE 1.16 Characteristics of optimal spiritual health and wellbeing



EXAM TIP

When linking to a dimension of health and wellbeing, ensure a link is made to a specific aspect of the dimension. For example, if explaining how income can influence physical health and wellbeing, you will be required to link to a specific part of this dimension, for example:

Earning a decent income can mean that individuals have money for resources such as nutritious food. This increases the ability of people to consume a healthy diet, which promotes a healthy body weight and provides optimal levels of energy.

Although food intake will influence physical health and wellbeing, it is not a part of this dimension and if a specific link is not made to an aspect of physical health and wellbeing such as body weight or levels of energy, full marks cannot be awarded.

1.3 Exercises

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To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

1.3 Quick quiz **on**

1.3 Exercise

1.3 Exam questions

Select your pathway

■ LEVEL 1
1, 2

■ LEVEL 2
3, 4

■ LEVEL 3
5

Test your knowledge

1. Define the five dimensions of health and wellbeing. Give two examples of characteristics that relate to each.
2. Classify each of the following examples as a physical, social, emotional, mental or spiritual dimension of health and wellbeing.
 - a. A sense of belonging to a community group
 - b. Having an asthma attack
 - c. Positive thought patterns
 - d. Recognising the difference between embarrassment and anxiety

- e. Experiencing productive relationships with school mates
- f. Having adequate levels of energy
- g. Experiencing positive self-esteem
- h. Having effective communication with others
- i. Experiencing sadness at appropriate times
- j. Establishing and acting according to values and beliefs

Apply your knowledge

3. 'Religion and spirituality are the same thing'. Discuss this statement.
4. Brainstorm the range of factors that you feel influence your own level of health and wellbeing. Remember that health and wellbeing is not just physical.
5. Physical health and wellbeing is the most significant dimension of health and wellbeing. To what extent do you agree with this statement?

1.3 Quick quiz



1.3 Exercise

1.3 Exam questions

Question 1 (1 mark)

Source: VCE 2017, *Health and Human Development Exam*, Q.4.b; © VCAA

Consider the following information regarding a VicHealth project.

Victorian workplace mental wellbeing collaboration

VicHealth, SuperFriend and WorkSafe Victoria have formed a collaboration to help workplaces create positive and supportive cultures and environments that enable workers to be more engaged, positive and effective at work.

Victorian workers spend around one-third of their time in the workplace and the work environment can provide a positive sense of community and connection with others, as well as build self-esteem and provide recognition and rewards for individual workers and teams.

Approaches such as developing a positive leadership style, designing jobs for mental wellbeing, communicating effectively, recruitment and selection of employees, work-life demands, and supporting and developing employees are all important components of workplace mental wellbeing.

Source: © Victorian Health Promotion Foundation; source material available at <www.vichealth.vic.gov.au>

Outline one potential social health outcome of the project described above.

Question 2 (2 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.2.a; © VCAA

Describe the mental dimension of health.

Question 3 (1 mark)

Source: VCE 2014, *Health and Human Development Exam*, Q.1.b (adapted); © VCAA

Define 'physical health and wellbeing'.

Question 4 (3 marks)

In a recent survey of doctors on reasons for not retiring in the near future, it was found that more than a third of doctors over 55 did not intend to retire, due to the following reasons:

- the sense of purpose the job provided
- being free from significant illness or disease
- having fulfilling professional interactions with others
- the cognitive stimulation of being a doctor.

Identify an example of relating to each of physical, spiritual and social health and wellbeing from the above survey.

Justify your choice.

Question 5 (1 mark)

Outline what is meant by the term 'physical health and wellbeing'.

More exam questions are available in your learnON title.

1.4 Interrelationships between the dimensions of health and wellbeing

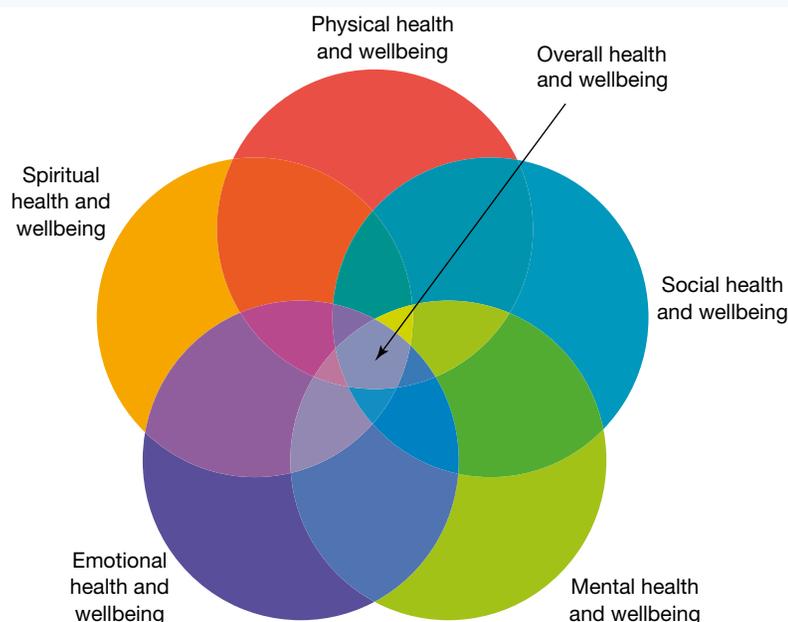
KEY CONCEPT Understanding the interrelationships between the dimensions of health and wellbeing

The five dimensions of health and wellbeing are interrelated; that is, they all affect each other. Although they will not all be affected in the same way or to the same degree, a change in one will usually have some effect on the other four. For this reason, all five dimensions need attention in order to achieve optimal health and wellbeing.

Overall health and wellbeing is determined by the combined levels of health and wellbeing in the five dimensions as shown in **FIGURE 1.17**. Each circle represents a dimension of health and wellbeing. They all influence each other, and all combine to produce the overall level of health and wellbeing experienced.

When all five dimensions are as good as they can be, health and wellbeing is said to be optimal. Optimal health and wellbeing therefore refers to the highest level of health and wellbeing an individual can realistically attain at any particular time. However, everyone is born with a different genetic potential and is influenced by different environments. As a result, every individual's level of optimal health and wellbeing will be different.

FIGURE 1.17 The five dimensions of health and wellbeing are interrelated and therefore affect each other.



Exactly how do the dimensions of health and wellbeing affect each other? It is impossible to state exactly how an individual's health and wellbeing will be affected by a particular event because everyone is unique and each situation is different. We can, however, predict *possible* effects on health and wellbeing.

It is useful to explore the manner in which the five dimensions of health and wellbeing can influence each other. **TABLE 1.3** shows a mix of both positive and negative impacts on health and wellbeing, but remember that the impact on each dimension will largely depend on the individual and scenario in question. It is also possible to explore the possible impacts on the five dimensions of health and wellbeing in one particular scenario. Consider a person who has suffered a broken leg (physical health and wellbeing) and is recovering in hospital. While in hospital and during the recovery phase, their health and wellbeing could be affected in numerous ways:

- Physical health and wellbeing
 - may not be able to exercise, so fitness levels reduce
 - could gain weight as physical activity levels decrease
 - immune and other body systems may be affected by the food given in hospital (this could have positive or negative effects on health and wellbeing, depending on what the diet was like before)

- Social health and wellbeing
 - might make new friends in hospital
 - may get a lot of visits from family members they would not normally see
 - will not be able to socialise and interact with friends at school and during leisure time
- Mental health and wellbeing
 - may be depressed about missing out on socialising with friends and family
 - may experience negative thought patterns if they feel like they are a burden on their family
- Emotional health and wellbeing
 - could experience a range of emotions including frustration or feelings of loneliness and respond to these emotions appropriately
 - might be happy or sad to miss out on school and recognise these emotions accurately
 - may learn to deal with any negative emotions they are experiencing, therefore developing resilience
- Spiritual health and wellbeing
 - may feel supported by family and friends, which can promote a sense of belonging and connection to the world around them
 - may accept that some aspects of life are out of their control, thereby promoting a sense of peace and harmony.

FIGURE 1.18 This individual's social, emotional, mental and spiritual health and wellbeing may be affected by their physical health and wellbeing.



TABLE 1.3 How the five dimensions of health and wellbeing can influence each other

	Physical	Social	Mental	Emotional	Spiritual
Physical		When an individual has adequate levels of energy, they are physically able to participate in activities with friends, which can enhance relationships.	An individual who is fit and physically capable of carrying out daily tasks is more likely to feel good about themselves and have positive self-esteem.	An individual who is sick may experience emotions such as fear and anger and respond appropriately to these emotions.	A person who is able to function physically due to adequate energy levels is more able to participate in community activities, which can enhance feelings of belonging.
Social	Strong social networks have been shown to reduce smoking rates and obesity, which can reduce the risk of a range of conditions including cardiovascular disease.		Having a close network of friends allows people to share problems with others, which can reduce stress.	Close social bonds allow individuals to be themselves and share their emotions with others which can assist in responding appropriately to them.	When a person has social bonds, they are more likely to feel connected to the world in which they live.

	Physical	Social	Mental	Emotional	Spiritual
Mental	Stress can lower immune system function and increase the risk of infectious diseases.	If a person is optimistic, they are more likely to interact in a positive way with friends and family, developing stronger relationships.		When using logic and reasoning, an individual may be better able to think clearly and fairly judge the emotions they are experiencing.	Stress is characterised by excessive self-focus. When an individual is focusing on themselves, they are less likely to feel connected to their community.
Emotional	If an individual can recognise that they are feeling sad and are taking action to deal with this emotion, they are more likely to participate in their normal activities such as exercise, which can enhance fitness.	An individual who can express their emotions can share their feelings with friends, which can promote more meaningful friendships.	If an individual can process emotions effectively, they may feel better about themselves, which enhances self-esteem.		Experiencing appropriate emotions (both positive and negative) can assist in a person feeling connected to their world and the events that occur in it.
Spiritual	When an individual has purpose in life, they are more likely to take care of themselves physically so they can fulfil their purpose. This can promote a healthy body weight.	If an individual feels connected to their society, they are more likely to treat people fairly, which can enhance relationships.	Believing that life has a positive meaning and purpose can enhance self-esteem and a sense of optimism.	If a person acts according to their values and beliefs, they may feel more comfortable with the emotions they experience throughout life.	

In the examples given, not all of the effects on health and wellbeing are negative. Sometimes a negative event can produce positive effects on one or more of the dimensions of health and wellbeing. You may have noticed that there is a range of effects on the various dimensions of health and wellbeing. It is also important to note that the effect on health and wellbeing will not always have a physical cause. For example, a relationship breakup (non-physical cause) can lead to a loss of appetite, which can influence energy levels (physical health and wellbeing). If the newly single individual used to spend a lot of time with their partner's friends, they may now have to find a new group of friends (social). The person may experience a loss of confidence and doubt their own worth (mental). They may experience emotions such as loss, loneliness and anger (emotional). The groups in which they feel they belong may change (spiritual).

EXAM TIP

When showing interrelationships, it is important to ensure that the impact on the first dimension is used to show how the next dimension can be affected. If a particular scenario is required as the starting point (for example, being educated), simply linking this scenario to each dimension does not show interrelationships. Interrelationships are only shown when the impact on one dimension of health and wellbeing is used to explain an impact on the second dimension. For example:

Being educated means that the individual is more likely to understand the benefits of regular physical activity and therefore exercise regularly. Regular physical activity promotes levels of fitness, which is an aspect of physical health and wellbeing. Being fit can enhance self-esteem, which promotes mental health and wellbeing. Optimal self-esteem can mean that the individual is less likely to avoid social situations, which can promote relationships and improve social health and wellbeing.

The following case study about Sandy looks at the effect of excessive stress on health and wellbeing.

CASE STUDY

Sandy's story

Sandy is a 26-year-old accountant who works for a large corporation in the city. She has many responsibilities and generally copes with these very well. Recently, she was given a large contract to work on. The demands of the contract are substantial, and her work life has begun to dominate her free time as well as her working hours. Sandy has been feeling more stressed at work. Despite this, she has felt good about herself for being trusted to work on this contract.

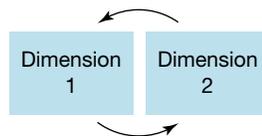
Sandy has found that she has had to cut back on her social activities and other things she enjoys, such as being a part of the local netball club and spending time with her family. Missing such interactions has made her feel disconnected and sad at times, but she has been able to manage these emotions. She has also reduced the amount of time spent at the gym and preparing healthy meals, which has caused her to gain some weight.

CASE STUDY REVIEW

1. Identify one example from Sandy's story that relates to each dimension of health and wellbeing.
2. For each dimension, identify how Sandy's health and wellbeing might have recently changed and justify your response.
3. Explain how the dimensions of health and wellbeing may be interrelated in Sandy's case.

EXAM TIP

When showing interrelationships between two dimensions of health and wellbeing, ensure you provide an example of how each dimension can affect the other:



The following provides an example of this:

A person has positive self-esteem (mental health and wellbeing). With positive self-esteem, individuals are less likely to avoid social situations, which can enhance relationships, promoting social health and wellbeing. With meaningful relationships, people can share any problems they have with others, which can reduce levels of stress, promoting mental health and wellbeing.

When showing interrelationships between more than two dimensions of health and wellbeing, you do not necessarily have to show how each dimension affects each other. Look at the mark allocation and ensure you show how one dimension can affect another for each mark that is available. The following examples show the amount of detail required for three marks:

A person has adequate levels of energy (physical health and wellbeing). With adequate levels of energy, individuals are more likely to be able to socialise with their friends, which can enhance the quality of their relationships (social health and wellbeing). Quality relationships can mean that the person has more people to talk to when things go wrong, which can assist in reducing levels of stress (mental health and wellbeing). Lower levels of stress can mean that the person can focus on working towards their purpose in life such as going to school or maintaining meaningful employment (spiritual health and wellbeing).

You have the option to finish with the dimension that you started with (in the answer above for example, the last link could have been from lower levels of stress to being more likely to prioritise physical activity, contributing to higher levels of fitness thereby promoting physical health and wellbeing), but this is not compulsory.

1.4 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

1.4 Quick quiz



1.4 Exercise

1.4 Exam questions

Select your pathway

■ LEVEL 1

1, 2

■ LEVEL 2

3, 4

■ LEVEL 3

5, 6, 7

Test your knowledge

1. Discuss what it means when the dimensions of health and wellbeing are said to be interrelated.
2. Explain what is meant by 'optimal health and wellbeing'.

Apply your knowledge

3. Brainstorm reasons why every person has a different level of optimal health and wellbeing.
4. Either on your own or with a partner, brainstorm ways in which:
 - a. physical health and wellbeing could affect social, emotional, mental and spiritual health and wellbeing
 - b. social health and wellbeing could affect physical, emotional, mental and spiritual health and wellbeing
 - c. mental health and wellbeing could affect physical, social, emotional and spiritual health and wellbeing
 - d. emotional health and wellbeing could affect physical, social, mental and spiritual health and wellbeing
 - e. spiritual health and wellbeing could affect physical, social, emotional and mental health and wellbeing.
5. Use the following examples to show how two dimensions of health and wellbeing are interrelated.
 - a. Earning an income
 - b. Contracting influenza (the flu)
 - c. Having a close group of friends
 - d. Feeling a part of a community group
 - e. Having positive thought patterns and an optimistic outlook on life
6. 'When a person experiences a negative event (such as a relationship break-up), all the impacts on the various dimensions of health and wellbeing will be negative.' To what extent do you agree with this statement?
7. Use the following scenarios to show interrelationships between dimensions of health and wellbeing.
 - a. Billy has just broken up with his first serious girlfriend and is feeling very sad.
 - b. Tammy loves playing cricket. In her last match, she collided with a team mate in the field and broke her leg. As a result, she will miss the rest of the season.

1.4 Quick quiz



1.4 Exercise

1.4 Exam questions

Question 1 (2 marks)

Describe how mental health and wellbeing may interrelate with social health and wellbeing.

Question 2 (2 marks)

Describe how physical health and wellbeing may interrelate with social health and wellbeing.

Question 3 (2 marks)

Describe how spiritual health and wellbeing may interrelate with mental health and wellbeing.

Question 4 (1 mark)

Having enough energy every day enables an individual to engage in activities with their friends, which can enhance their relationships. Quality relationships can give an individual more people to play social sports with, which can improve levels of fitness.

Which dimensions of health and wellbeing are interrelated in this example?

More exam questions are available in your learnON title.

1.5 Optimal health and wellbeing as a resource

KEY CONCEPT Exploring the importance of health and wellbeing as a resource individually, nationally and globally

In 1986 the World Health Organization stated that to reach an optimal level of health and wellbeing, ‘an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health (and wellbeing) is, therefore, seen as a resource for everyday life, not the objective of living’.

With this in mind, it becomes clearer that health and wellbeing is both a resource and an outcome. As a resource, optimal health and wellbeing can provide benefits for individuals, countries and the world as a whole.

on Resources

Teacher-led video Health and wellbeing as a resource (t1vd-0255)

1.5.1 Importance of health and wellbeing as a resource individually

Similar to other traits such as knowledge, social skills and creativity, health and wellbeing is a characteristic of human existence. Like these traits, health and wellbeing can be used to enhance human life, but cannot be directly traded or sold for goods and services.

On a basic level, optimal health and wellbeing reduces the risk of disease, injury and premature death. The Australian Institute of Health and Welfare (2019) estimates that 4.8 million years of healthy life were lost in Australia in 2015 from either premature death or time lived with disease or injury.

As a result of reducing the risk of premature death, disease and injury, optimal health and wellbeing increases the ability of individuals to live free from pain and concentrate on activities that improve their lives such as studying, working and socialising.

Optimal health and wellbeing also decreases stress and anxiety and promotes positive emotions such as happiness.

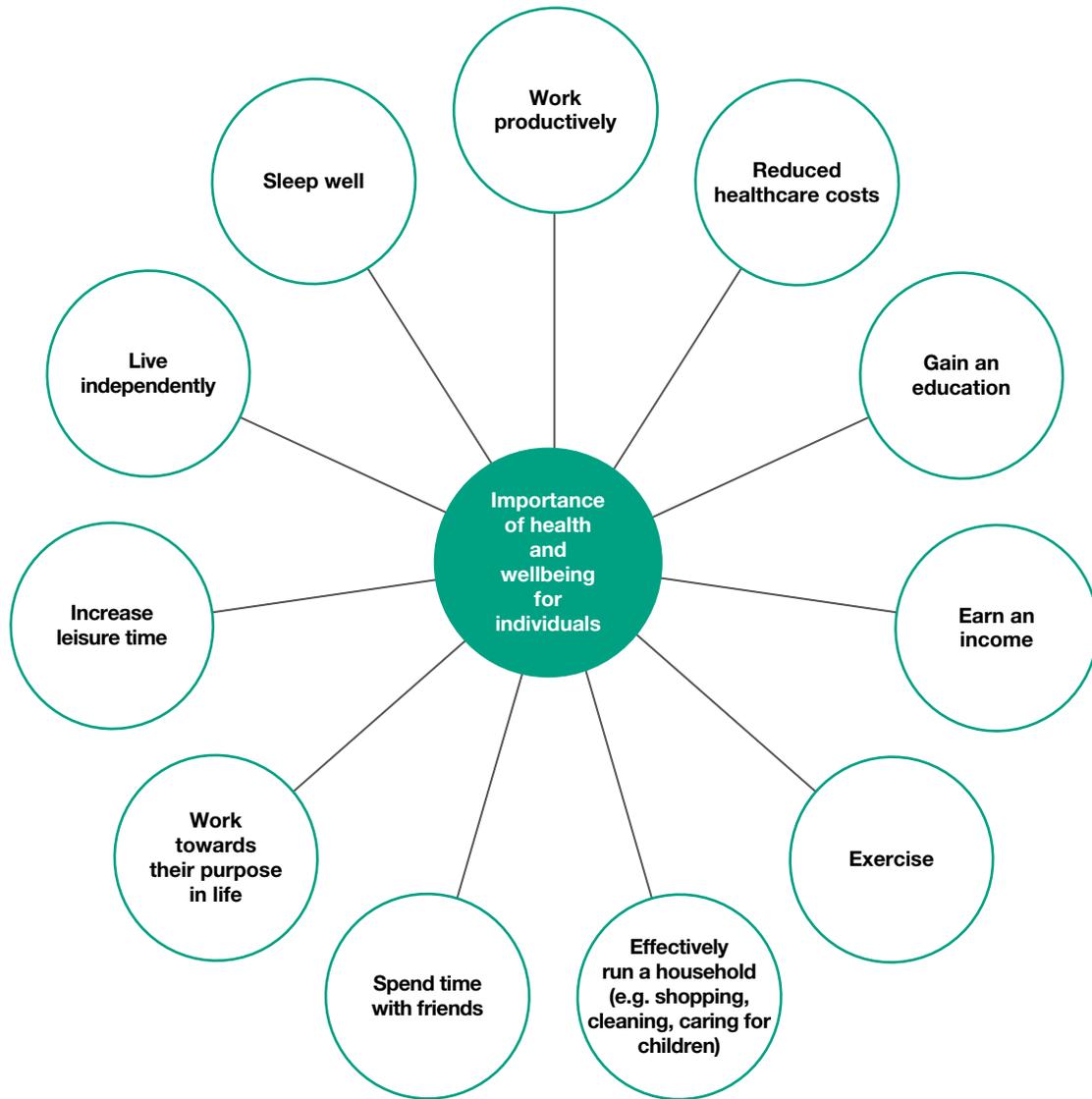
Being healthy can improve quality of life and assist in creating a cycle of wellbeing. It allows individuals to work more effectively and improve their lives, which in turn promotes health and wellbeing. The individual may experience an increased ability to participate in health-promoting activities and behaviours, such as sleeping well, living independently, working towards their purpose in life, maintaining a nutritious diet, exercising regularly, effectively running a household and taking time for social and leisure activities. As a result of this, the individual is more likely to view life in a positive manner and can live life to the highest level possible.

Optimal health and wellbeing also reduces healthcare costs for individuals. Disease and injury can incur significant health-related costs such as doctor’s consultations and medication, and individuals are often required to make financial contributions towards these costs. As a result, optimal health and wellbeing increases the amount of money that can be spent on other things such as education, housing, food, leisure pursuits and social activities. Optimal health and wellbeing benefits individuals in a number of ways (see **FIGURE 1.20**).

FIGURE 1.19 Optimal health and wellbeing increases the ability of people to live independently, which further enhances health and wellbeing by giving people a sense of control over their lives.

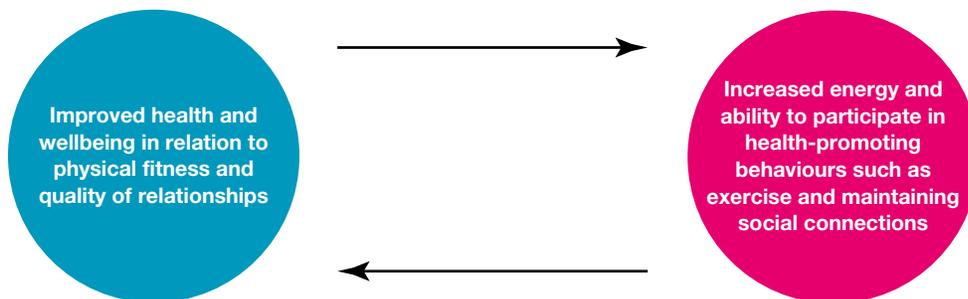


FIGURE 1.20 The importance of health and wellbeing for individuals



All of these processes contribute to improved health and wellbeing, which increases the ability of individuals to further promote or improve their health and wellbeing as the example in **FIGURE 1.21** illustrates.

FIGURE 1.21 Optimal health and wellbeing is a resource that can be used to further promote the health and wellbeing of individuals.



As well as promoting health and wellbeing in individuals, a population with optimal levels of health and wellbeing provides benefits at both country and global levels.

1.5.2 Importance of health and wellbeing as a resource nationally

In addition to its importance to individuals, optimal health and wellbeing has a number of social and economic benefits for a country's population as a whole (see **FIGURE 1.22**).

Populations with optimal levels of health and wellbeing experience greater economic benefits such as higher average incomes, greater productivity, less absenteeism from work, less reliance on social security, and reduced healthcare and associated caring costs. Other benefits of optimal health and wellbeing for countries include improved life expectancy and other health outcomes, reduced levels of stress in the community, more participants in social activities such as community activities and volunteering, and less strain on the health system (contributing to shorter waiting lists for elective surgery for example).

The most basic way to examine the importance of health and wellbeing at a national level may be through measurable indicators. The measurable costs of health and wellbeing are often related to aspects of the physical dimension, but it is important to remember that ill-health in relation to any dimension will impact on the person as a whole and also contribute to lower levels of health and wellbeing for the population.

Optimal health and wellbeing decreases reliance on the health system, and this has economic benefits. Doctors' consultations, medication and other health services cost Australians over \$195 billion in 2018–19. Many of these costs could be saved if all people experienced optimal health and wellbeing. Savings due to improved health and wellbeing could be used to promote quality of life in Australia by making more money available for resources such as education, improving infrastructure including housing and transport systems, the development of new industries by confident individuals challenging themselves and trying new things, and providing social security for those experiencing hardship.

In addition to health system savings, optimal health and wellbeing promotes economic development in a number of ways which are often greater than the health system savings. In fact, the Royal Australian and New Zealand College of Psychiatrists estimated the economic cost of mental illness alone to be close to \$100 billion a year. When populations are experiencing optimal health and wellbeing, they are more equipped to work productively. This increases **productivity** as individuals are more likely to be engaged with their job and work to the best of their ability. According to the report *The Health of Australia's Workforce* (Medibank Private, 2005), it has been estimated that 'the healthiest Australian employees are almost three times more productive than their colleagues'. Further, 'employees with poor overall health status are far more likely to be absent from work, and are nine times more likely to have sick days, compared to healthy employees'. Optimal health and wellbeing therefore increases the ability of people to work and earn an income, and this in turn

FIGURE 1.22 The importance of health and wellbeing nationally

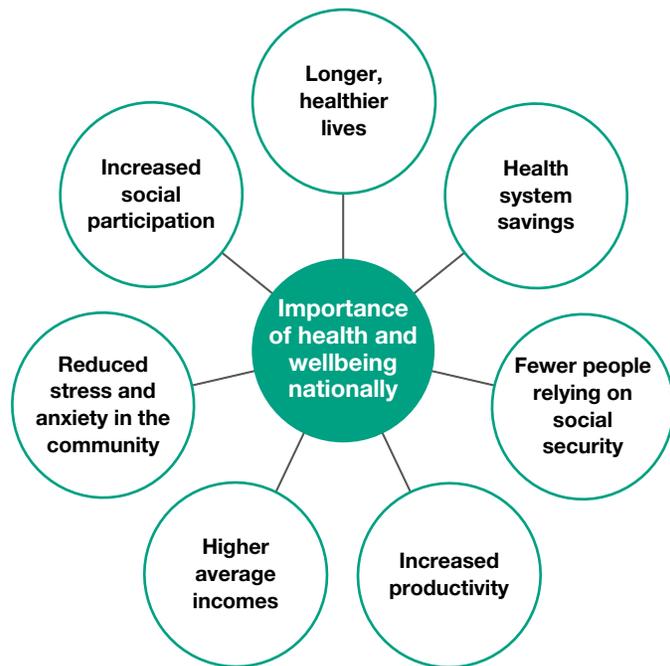


FIGURE 1.23 Good health and wellbeing contributes to productive employment.



Productivity relates to the efficiency of production of goods and services. Productivity is measured by the amount of output produced per unit of input

increases the economy of the country through higher taxation revenue. Fewer people rely on social security payments as a result of reduced unemployment, further enhancing the economy of the country.

The importance of optimal health and wellbeing from a social perspective is often difficult to measure, but is just as important as the economic benefits.

Optimal health and wellbeing reduces the risk of premature death and the development of illness and disease. As well as improving health indicators and outcomes from a population perspective, improved health and wellbeing serves to reduce levels of stress and anxiety that communities experience as a result of loved ones experiencing premature death, disease or injury. The health system also benefits from optimal health and wellbeing as the number of encounters with the health system (such as doctors' consultations and hospital admissions) reduces, thereby shortening waiting times for those who do require healthcare.

A population experiencing good health and wellbeing is more likely to participate in meaningful employment. Having a healthy and productive workforce assists in reducing the pressure on the workforce as a whole. When fewer people are taking time off work, all people can concentrate on their own jobs. This further decreases stress and other work-related pressures.

Levels of social participation are higher in populations experiencing optimal health and wellbeing. Social participation promotes feelings of belonging and also acts to provide vital resources and services to a society through activities such as volunteering and **civic participation**. Other examples of social participation include involvement in formal activities provided by organised groups such as sport or physical recreation groups, arts or heritage groups, and religious or spiritual groups or associations; and informal activities with friends and families, including social gatherings and the provision of support and care for those in need, such as the sick or immobile.

Optimal health and wellbeing can create a cycle through generations. Parents experiencing good health and wellbeing have an increased capacity to adequately care for and raise their children. As a result, their children are more likely to experience optimal health and wellbeing themselves. This produces future generations who are able to provide for themselves and their families, and contribute to the society and country in which they live.

1.5.3 Importance of health and wellbeing as a resource globally

As well as being an important resource for populations within countries, optimal health and wellbeing provides a range of benefits for the population on a global scale as shown in **FIGURE 1.24**.

Optimal health and wellbeing can reduce the risk of infectious or **communicable diseases** spreading between countries. Infectious or communicable diseases refer to diseases that are passed from one person to another from either direct or indirect contact:

- direct contact — through touch (e.g. chicken pox), sexual intercourse (e.g. syphilis, HIV), saliva and droplets from coughing (e.g. influenza, COVID-19) and through human waste such as faecal or oral transmission (e.g. hepatitis A)
- indirect contact — through water (e.g. cholera), food (e.g. E. coli), blood (e.g. hepatitis B and HIV), and **vectors** such as mosquitoes (e.g. malaria).

Given favourable conditions, these diseases can spread quickly from person to person and can result in a **pandemic**, where the disease spreads across large geographical regions and affects a high proportion of the population in a relatively short period of time. This was evident in relation to the coronavirus (COVID-19) pandemic that began in late 2019. Such pandemics can have major health, social and economic consequences for the global population, including significant rates of disease and premature death, reduced workforce participation and productivity, the shutdown of non-essential services, disruptions to travel and the transport of goods, food shortages, school closures, and the breakdown of law and order. In times of crisis such as in the event of a pandemic, people are often unable to go about their daily activities and instead shift their focus to survival, which impacts on all aspects of life.

Civic participation refers to involvement in a community group such as a union, professional association, political party, environmental or animal welfare group, human and civil rights group, or body corporate or tenants' association

Communicable diseases infectious diseases that are transmitted from the environment; including through air, water, food and other infected organisms (including other humans)

Vector a living thing that carries and transmits pathogens to other living things

Pandemic the spread of infectious disease through human populations across a large region such as multiple continents or worldwide

A severe pandemic can result in millions of deaths, and even the most conservative estimates suggest that pandemics destroy up to 1 per cent of global GDP, which is comparable to other top-priority threats, such as climate change. The COVID-19 pandemic was estimated to have caused close to 2 million deaths and reduced the global GDP by around 4.5 per cent in 2020 alone.

With globalisation and the increase in affordable transportation of people, products and food, the last 30 years have seen a steady increase in the frequency and diversity of disease outbreaks. As a result, no country is immune to the potential impacts of infectious disease. Most of these outbreaks are caused by bacteria or microbes of animal origin that are transmitted to people, such as COVID-19, Ebola and avian flu. As a result, reducing infections and maintaining good health and wellbeing are increasingly important.

Populations experiencing good health and wellbeing contribute to world peace and security. When populations are healthy, they are more likely to be able to work for the benefit of themselves, their country and the planet. They can be productive and have an increased ability to access the resources they require for a decent standard of living such as employment, education, food, water, shelter and healthcare. When populations are not in a positive state of health and wellbeing, they may resort to extreme measures in an attempt to access these resources to ensure their survival. This can contribute to conflict on a national and international level.

Optimal health and wellbeing on a global scale can also promote sustainability. When people have their needs met and feel good about themselves, they are more likely to live their lives in a sustainable manner. They can work productively and provide for their families. The government will generate a greater amount of taxation revenue, which can be used to promote sustainable energy, water and agricultural systems.

Children are often the most vulnerable to poor health and wellbeing. When health and wellbeing is poor, children cannot focus on education or thrive in a manner that will promote social and economic development and sustainability in the future.

FIGURE 1.24 The importance of health and wellbeing as a resource globally

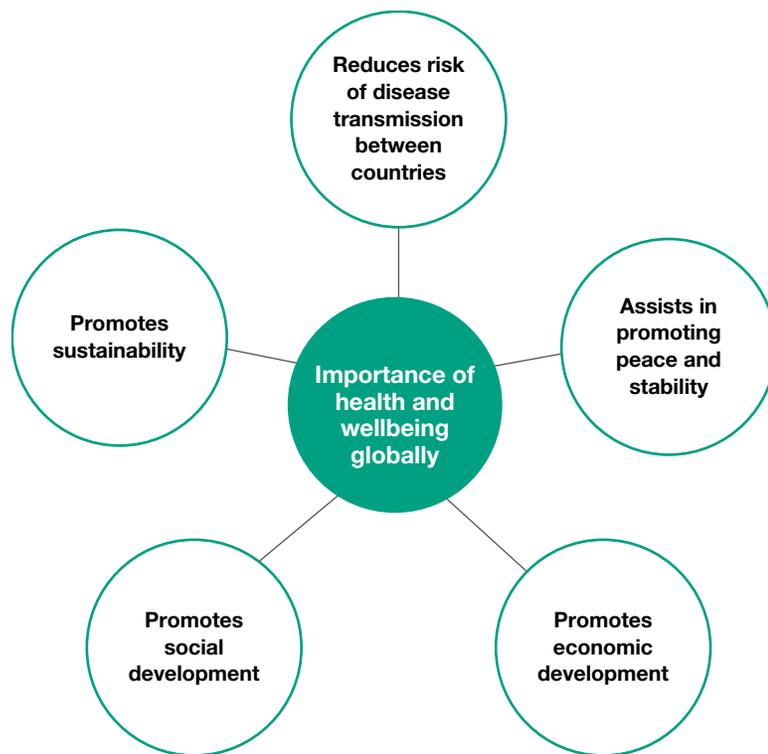


FIGURE 1.25 Good health and wellbeing improves access to education for children around the world.



Good health and wellbeing is essential for optimal trade between countries. Healthy populations are better equipped to produce goods and services that can be traded on the global market. Global trade is increasingly important for the economic development of many countries. It generates revenue that helps the governments of trading countries to provide their populations with essential resources and services such as education, public housing, healthcare and infrastructure. Poor health and wellbeing can therefore have significant impacts on the social and economic development of a country, especially on low-income countries that often do not have the economic or social resources to deal with the negative consequences of poor health and wellbeing.

CASE STUDY

Impact of COVID-19 on people's livelihoods, their health and our food systems

Joint statement by ILO, FAO, IFAD and WHO

13 October 2020

The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems and the world of work. The economic and social disruption caused by the pandemic is devastating: tens of millions of people are at risk of falling into extreme poverty, while the number of undernourished people, currently estimated at nearly 690 million, could increase by up to 132 million by the end of the year.

Millions of enterprises face an existential threat. Nearly half of the world's 3.3 billion global workforce are at risk of losing their livelihoods. Informal economy workers are particularly vulnerable because the majority lack social protection and access to quality health care and have lost access to productive assets. Without the means to earn an income during lockdowns, many are unable to feed themselves and their families. For most, no income means no food, or, at best, less food and less nutritious food.

The pandemic has been affecting the entire food system and has laid bare its fragility. Border closures, trade restrictions and confinement measures have been preventing farmers from accessing markets, including for buying inputs and selling their produce, and agricultural workers from harvesting crops, thus disrupting domestic and international food supply chains and reducing access to healthy, safe and diverse diets. The pandemic has decimated jobs and placed millions of livelihoods at risk. As breadwinners lose jobs, fall ill and die, the food security and nutrition of millions of women and men are under threat, with those in low-income countries, particularly the most marginalized populations, which include small-scale farmers and indigenous peoples, being hardest hit.

Millions of agricultural workers – waged and self-employed – while feeding the world, regularly face high levels of working poverty, malnutrition and poor health, and suffer from a lack of safety and labour protection as well as other types of abuse. With low and irregular incomes and a lack of social support, many of them are spurred to continue working, often in unsafe conditions, thus exposing themselves and their families to additional risks. Further, when experiencing income losses, they may resort to negative coping strategies, such as distress sale of assets, predatory loans or child labour. Migrant agricultural workers are particularly vulnerable, because they face risks in their transport, working and living conditions and struggle to access support measures put in place by governments. Guaranteeing the safety and health of all agri-food workers – from primary producers to those involved in food processing, transport and retail, including street food vendors – as well as better incomes and protection, will be critical to saving lives and protecting public health, people's livelihoods and food security.

In the COVID-19 crisis, food security, public health, and employment and labour issues, in particular workers' health and safety, converge. Adhering to workplace safety and health practices and ensuring access to decent work and the protection of labour rights in all industries will be crucial in addressing the human dimension of the crisis. Immediate and purposeful action to save lives and livelihoods should include extending social protection towards universal health coverage and income support for those most affected. These include workers in the informal economy and in poorly protected and low-paid jobs, including youth, older workers, and migrants. Particular attention must be paid to the situation of women, who are over-represented in low-paid jobs and care roles. Different forms of support are key, including cash transfers, child allowances and healthy school meals, shelter and food relief initiatives, support for employment retention and recovery, and financial relief for businesses, including micro, small and medium-sized enterprises. In designing and implementing such measures it is essential that governments work closely with employers and workers.

Countries dealing with existing humanitarian crises or emergencies are particularly exposed to the effects of COVID-19. Responding swiftly to the pandemic, while ensuring that humanitarian and recovery assistance reaches those most in need, is critical.

Now is the time for global solidarity and support, especially with the most vulnerable in our societies, particularly in the emerging and developing world. Only together can we overcome the intertwined health and social and economic impacts of the pandemic and prevent its escalation into a protracted humanitarian and food security catastrophe, with the potential loss of already achieved development gains.

CASE STUDY REVIEW

1. Explain how the COVID-19 pandemic impacted the global food supply.
2. Explain why agricultural workers are at particular risk from pandemics.
3. If the world experienced optimal health and wellbeing prior to COVID-19, the health, economic and social impacts of the pandemic would have been significantly less severe. Discuss the extent to which you agree with this statement.

1.5 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

1.5 Quick quiz

on

1.5 Exercise

1.5 Exam questions

Select your pathway

■ LEVEL 1

1, 3

■ LEVEL 2

2, 4, 5, 6

■ LEVEL 3

7, 8

Test your knowledge

1. Discuss ways that optimal health and wellbeing can act as a resource:
 - a. individually
 - b. nationally
 - c. globally.
2. Explain how optimal health and wellbeing can create a positive cycle:
 - a. for individuals
 - b. through generations.
3. Briefly explain what is meant by a 'pandemic'.

Apply your knowledge

4. Imagine you only had the energy or capacity to fulfill three benefits identified in **FIGURE 1.20**.
 - a. Which three would you choose?
 - b. How could missing out on the other benefits impact your health and wellbeing?
5. Explain why promoting good health and wellbeing is a priority for many governments.
6. Discuss what each of the following quotes is saying about health and wellbeing as a resource.
 - a. 'A man too busy to take care of his health is like a mechanic too busy to take care of his tools.' — Spanish proverb.
 - b. 'It is health that is real wealth and not pieces of gold and silver.' — Mahatma Gandhi
 - c. 'Healthy citizens are the greatest asset any country can have.' — Winston Churchill
7. Brainstorm ways that reducing pandemics could contribute to each of the following globally:
 - a. health and wellbeing
 - b. social benefits
 - c. economic benefits.
8. In pairs (or individually), and without using answers already used in question 1 of Test your knowledge, brainstorm:
 - a. how optimal social health and wellbeing can act as a resource for individuals
 - b. how optimal mental health and wellbeing can act as a resource for countries
 - c. how optimal physical health and wellbeing can act as a resource for the world.

Question 1 (2 marks)

Describe how optimal health and wellbeing acts as a resource for the individual.

Question 2 (2 marks)

Describe how optimal health and wellbeing acts as a resource nationally.

Question 3 (2 marks)

Describe how optimal health and wellbeing acts as a resource globally.

Question 4 (1 mark)

What is an example of the positive impact at a national level of optimal health and wellbeing?

Question 5 (1 mark)

What is an example of the positive impact at a global level of optimal health and wellbeing?

More exam questions are available in your learnON title.

1.6 Prerequisites for health: peace, shelter, education and food

KEY CONCEPT Understanding the prerequisites for health — peace, shelter, education and food

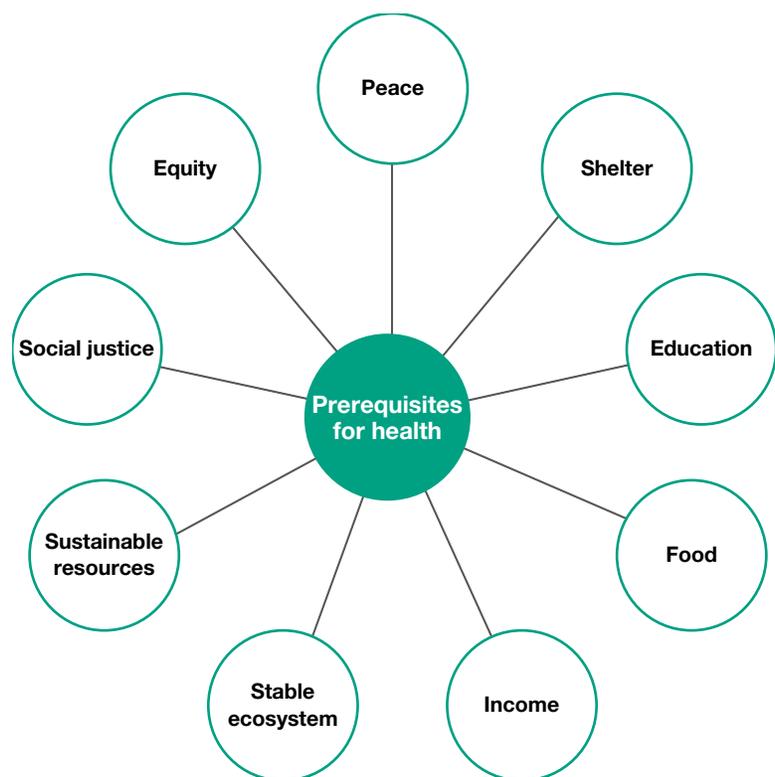
In 1986, the World Health Organization held an international health conference in Ottawa, Canada. One of the key objectives of this meeting was to provide guidance to governments and other groups on how to improve the health and wellbeing of all people worldwide. The resulting document is referred to as the Ottawa Charter.

The Ottawa Charter identifies specific prerequisites or basic conditions and resources that must be available if any gains in health and wellbeing are to occur. Identifying prerequisites assists governments and other groups that work towards providing all people with the basic necessities for a decent life. The prerequisites are shown in **FIGURE 1.26**.

Many of these prerequisites impact each other, so individuals and communities who have access to one of them often experience an increased ability to access the others. For example, a peaceful society is more conducive to attending school to receive an education. An education increases the ability to gain meaningful employment and earn an income. An income can be used to purchase shelter and food.

The prerequisites can impact health and wellbeing in countless ways, and it is not possible to address all impacts in this subtopic. As a result, a selection of impacts will be explored for each prerequisite.

FIGURE 1.26 The prerequisites for health under the Ottawa Charter



1.6.1 Peace

Peace can be defined as the absence of conflict. When a community or country is experiencing peace, there is a decreased risk of premature death, serious injury, disability and other adverse effects that are usually associated with conflict. Peace therefore promotes the physical health and wellbeing of all people.

From an individual perspective, the risk of injury and premature death associated with conflict decreases during times of peace, and the accompanying reduction in levels of stress and anxiety can enhance mental health and wellbeing. A peaceful environment increases the ability of people to move freely around their community and go about their daily activities such as working, accessing food, going to school and socialising. This enhances their choices, allows them to pursue their purpose in life and further promotes health and wellbeing.

Peace promotes the preservation of infrastructure including roads and other transport systems, agriculture, water and electricity systems, healthcare facilities, schools and places of employment — all of which are often destroyed during conflict. Access to food and water lowers the risk of disease, and access to infrastructure provides opportunities for socialisation and leisure activities, reducing levels of stress and anxiety, allowing people to feel secure and safe, and promoting feelings of belonging in the community. As a result, all dimensions of health and wellbeing are promoted.

A peaceful country increases the capacity of governments to provide resources and services that promote health and wellbeing. As resources are not being used to sustain a war effort, they can be invested in governance, education, healthcare, trade development, social security and infrastructure, all of which promote social and economic development which in turn promotes optimal health and wellbeing.

FIGURE 1.27 Infrastructure, including transport systems, are more likely to be preserved during times of peace.



1.6.2 Shelter

Shelter describes a structure that provides protection from the outside environment. Adequate shelter is a basic human right and provides a number of benefits to health and wellbeing. These include protection from the elements, privacy, safety and security, reduced risk of disease, reduced stress and anxiety, ability to focus on employment or education, and more time to pursue a purposeful and meaningful life.

Many geographical regions experience extreme weather events that contribute to hundreds of thousands of deaths each year. Adequate shelter can provide protection from such occurrences and assist in promoting mental health and wellbeing by reducing levels of stress and anxiety as exposure to extreme weather is decreased.

FIGURE 1.28 Adequate shelter is a basic human requirement yet many people do not have access to it.



Protection from adverse weather can promote adequate sleep, which in turn can increase the ability to pursue employment and education in the waking hours. Adequate sleep also increases the capacity of individuals

to participate in activities that add value to life, such as socialising and participating in the life of their community. This promotes social health and wellbeing.

Adequate shelter promotes feelings of privacy, safety and security by reducing the ability of others to enter the living space of residents, and this enhances mental wellbeing by reducing stress and anxiety. Inadequate shelter on the other hand is a key contributor to crimes against people, including assault and theft.

Shelter acts to promote physical health and wellbeing by providing protection against the spread of infectious diseases. Diseases such as malaria are spread by mosquitoes, which can easily target people who are not protected by adequate shelter. Children are particularly susceptible to such conditions, which can result in premature death or a reduced ability to gain an education and lead a fulfilling life.

Having adequate shelter also means that people do not have to spend energy and time searching for a place to sleep and finding protection from the elements. This allows more time to pursue employment and education. Shelter further facilitates education by providing children with a place to study and prepare for school.

Having adequate shelter can promote spiritual health and wellbeing by providing stability in an individual's life and contribute to a sense of belonging in the community in which they reside. Finally, adequate shelter also often includes other resources that can promote health and wellbeing such as toilet facilities, clean water, electricity and cooking facilities.

1.6.3 Education

Education impacts health and wellbeing in numerous ways. Education empowers individuals and increases their ability to earn an income, understand health promotion messages, exhibit healthy behaviours, and find meaning and purpose in life. As a result, educated people often have greater access to the resources required to experience high levels of health and wellbeing.

Education is often a key requirement for obtaining meaningful and well-paid employment that promotes economic development and increases the ability of individuals to afford resources such as food, shelter and healthcare, all of which promote health and wellbeing. Meaningful employment also promotes mental health and wellbeing by improving self-esteem and provides a sense of purpose and meaning in life, which enhances spiritual health and wellbeing.

Educated individuals are more empowered to take control of their lives. Educated women for example are particularly advantaged in relation to having a say in the decisions that affect their lives, such as if and when they get married and whether or not to have a family. This can promote mental health and wellbeing by reducing stress and anxiety and reduce the risk of the maternal issues that can occur from having babies at a young age, enhancing physical health and wellbeing.

Access to education promotes literacy. Literacy refers to the ability to read and write, and literate individuals are more likely to participate in health promoting behaviours such as eating well, exercising regularly, maintaining social connections and accessing healthcare when required.

1.6.4 Food

Adequate food intake is both an essential requirement for life and a basic human right. 'The state in which all persons obtain nutritionally adequate, culturally appropriate, safe food regularly through local non-emergency sources' (VicHealth) is referred to as food security. Food security enhances physical health and wellbeing as it increases the ability of individuals to consume the required nutrients, which is important for the functioning of the human body. It provides the energy required for individuals to complete daily tasks and reduces the risk of undernutrition. Some of the nutrients in food are important for increasing immunity to disease. With food security, individuals spend less time looking for food and are less likely to experience stress because they know there is food available. This can promote mental health and wellbeing.

Access to appropriate and nutritious food helps to provide adequate levels of energy. Adequate energy increases the capacity of children to attend school and learn. Improved health and wellbeing due to adequate nutrition enables individuals to work and earn an income. This ultimately contributes to the improvement of the economy of a country.

A range of foods and the nutrients within them are essential to prevent undernutrition. Undernutrition contributes to a range of negative impacts on people, especially children, including:

- stunting — a low height for age
- wasting — a low weight for height
- nutritional deficiencies — insufficient amounts of nutrients such as protein, vitamins and minerals.

Stunting, wasting and nutritional deficiencies contribute to a range of physical and mental problems that can reduce the capacity for education and productive work later in life. Those who are undernourished are more likely to experience mental disabilities, poverty and premature death.

Adequate nutrition can lead to improvements in an individual's intellectual capacities. For example, optimal intake of iodine and polyunsaturated fats promote intellectual functioning. As a result, individuals may develop the intellectual skills required for employment in later life, and the awareness or skills to access knowledge that will help them to understand the importance of health-related factors such as nutrition, hygiene and the symptoms of disease.

Adequate nutrition promotes optimal immune system function. The immune system works constantly to fight off **pathogens**, thereby helping to prevent illness and promote health and wellbeing. Many pathogens are opportunistic, meaning that they are more likely to infect people who are experiencing reduced immune system function, especially children. As a result, adequate nutrition is a significant protector against premature death and poor health and wellbeing.

In 2021, an estimated 930 million people around the world were experiencing ongoing food insecurity that hindered their ability to lead a healthy, active life. As a result of the number of people experiencing food insecurity, a significant amount of time and energy is spent trying to acquire food or money to buy food. Consequently, less time is spent on activities that promote health and wellbeing such as attending school or work, or on the pursuit of leisure activities.

Access to safe food also decreases the risk of foodborne diseases. Unsafe food containing harmful bacteria, viruses, parasites or chemical substances, causes more than 200 diseases — ranging from diarrhoea to cancers. According to the WHO (2021), an estimated 600 million — almost 1 in 10 people in the world — fall ill after eating contaminated food and 420 000 die every year, impacting the ability of people to experience optimal health and wellbeing.

FIGURE 1.29 Food provides the energy that is required for many aspects of life, including physical activity and socialisation.



Pathogens bacteria, viruses and other microbes that can cause disease

1.6 Activities

1. Access the Homelessness weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the Food weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital documents** Homelessness worksheet (doc-32187)
Food worksheet (doc-32188)
-  **Weblinks** Homelessness
Food

1.6 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

1.6 Quick quiz



1.6 Exercise

1.6 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 4, 5

■ LEVEL 2

3, 6, 7

■ LEVEL 3

8, 9, 10

Test your knowledge

1. In which document were the prerequisites for health identified?
2. Identify the nine prerequisites for health according to the World Health Organization.
3. What is the purpose of identifying prerequisites for health?
4. Define 'peace'.
5. Explain what is meant by 'shelter'.

Apply your knowledge

6. Select the prerequisite from this subtopic that you believe has the greatest impact on health and wellbeing and justify your choice. Discuss your response with other class members.
7. Discuss how education may promote physical and social health and wellbeing.
8. Use the provision of food to show how social and mental health and wellbeing can interrelate.
9. In this subtopic, it is stated that 'it is not possible to address all impacts' on health and wellbeing for each prerequisite. Using examples not provided in this subtopic, explain how peace, shelter, education and food can promote health and wellbeing.
10. Explain how:
 - a. Peace can act as a resource globally.
 - b. Shelter can act as a resource for individuals.
 - c. Education can act as a resource nationally.
 - d. Food can act as a resource individually and nationally.

1.6 Quick quiz



1.6 Exercise

1.6 Exam questions

Question 1 (2 marks)

Source: VCE 2018, Health and Human Development Exam, Q.13; © VCAA

Peace is a WHO prerequisite for health.

Explain how peace can lead to improved health outcomes.

Question 2 (2 marks)

Source: VCE 2004, Health and Human Development Exam, Q.3 (adapted); © VCAA

Infectious and parasitic diseases in the World Health Organization Africa Region (which includes Zimbabwe) contribute 56% of the DALYs. In the World Health Organization Western Pacific Region (which includes Australia) the relevant figure is 1.9%.

Source: Adapted from Annex Table 3, Burden of Disease in DALYs by cause, sex and mortality stratum in WHO regions, estimates for 2002 in WHO, World Health Report 2003, WHO, Geneva

Explain how conflict may influence the differences in the contribution of infectious and parasitic diseases to total DALYs in Zimbabwe and Australia.

Question 3 (3 marks)

Other than peace and shelter, **identify** three other prerequisites of health and wellbeing.

Question 4 (2 marks)

Describe why shelter has been included as a prerequisite for health and wellbeing.

Question 5 (1 mark)

Identify the prerequisite of health and wellbeing that relates to food security.

More exam questions are available in your learnON title.

1.7 Prerequisites for health: income, a stable ecosystem, sustainable resources, social justice and equity

KEY CONCEPT Understanding the prerequisites for health — income, a stable ecosystem, sustainable resources, social justice and equity

Subtopic 1.6 explored a number of prerequisites for health and wellbeing, including peace, shelter, education and food. This subtopic examines income, a stable ecosystem, sustainable resources, social justice and equity.

1.7.1 Income

Income is an underlying factor for many health and wellbeing outcomes. From an individual perspective, income increases the ability to afford resources such as healthcare, recreation, transport and education. From a population perspective, income increases the capacity of governments to provide social services and resources such as public housing, education, and healthcare; social security; infrastructure; recreation facilities such as parks and gardens; and law and order. All of these resources and services promote health and wellbeing.

Healthcare often requires a patient to make some payment. Having a decent and reliable income allows individuals to more easily afford healthcare such as immunisations, medication, checkups and surgery. As a result, many conditions can be prevented or effectively treated and this promotes physical health and wellbeing.

Having access to money means that people are better able to afford activities that they enjoy such as recreational pursuits and socialising. This can promote mental health and wellbeing by reducing stress and anxiety and social health and wellbeing by giving people more choices in relation to the social activities in which they participate.

Income increases the ability of people to access transport such as bicycles, motor vehicles and public transport. Transport is often required to access a range of resources such as education, employment, recreation, healthcare and food, all of which work to enhance health and wellbeing.

FIGURE 1.30 A decent and reliable income enables individuals to participate in activities they enjoy, such as bushwalking and other outdoor pursuits.



An income increases the capacity of parents to send all of their children to school. Unlike Australia, in many countries it is girls who miss out on an education when financial resources are scarce. Adequate incomes mean that all children have the opportunity to attend school and achieve higher levels of education. Income and education often form a cycle so that those with higher incomes can often afford higher levels of education than those on lower incomes, and higher levels of education increase the ability of individuals to earn higher incomes. Both income and education contribute to improved health and wellbeing outcomes.

Governments receive income from the taxes paid by individuals and businesses. When average incomes of individuals and businesses are high, the revenue that the government has available to spend on infrastructure and services is also likely to be high. Governments are responsible for providing a range of resources and services that promote health and wellbeing:

- Public housing is an important source of shelter for many individuals, and a government with a high income is better equipped to provide it. Housing provides protection from the elements, provides a sense of safety, thereby promoting physical and mental health and wellbeing.
- With an adequate income, governments can provide basic public health and education systems. This promotes the health and wellbeing of all people as those in need are generally prioritised, not just those with the ability to pay.
- Social security relates to benefits provided by government to those in need. Such benefits come in many forms including food, income, healthcare and housing. The income a government receives directly influences its ability to provide such resources, and in turn influences the level of health and wellbeing experienced among the population.
- Infrastructure such as roads, telecommunications and ports (both air and shipping) promote all dimensions of health and wellbeing by increasing the ability of individuals to receive an education, gain employment, trade their goods and generate an income. Such infrastructure also increases access to other health promoting resources such as education, food, water and sanitation, and health facilities.
- Governments can provide recreation facilities such as public pools, basketball courts, parks and gardens that work to prevent illness. Being physically active promotes physical health and wellbeing by improving fitness and maintaining a healthy body weight. Citizens can socialise in these settings, and this promotes social interaction and social health and wellbeing.
- Governments with adequate income can commit more money to maintaining law and order by providing a police force and judicial system. This assists in ensuring human rights are upheld, which can reduce stress and anxiety and thereby promote mental health and wellbeing.

1.7.2 A stable ecosystem

An ecosystem is a community that consists of all of the living and non-living components of a particular area. The living components include plants, animals and micro-organisms such as bacteria, and the non-living components include weather, rocks, soil and watercourses.

A stable ecosystem occurs when balance is achieved between the environment and the species that live in an

FIGURE 1.31 For governments, adequate income allows the provision of services such as public healthcare.



FIGURE 1.32 A stable ecosystem is required to provide many resources required for human life such as clean water.



environment. Stability indicates that all living things are having their needs for food, water, shelter and reproduction met without causing detrimental effects to the natural environment. Every ecosystem will experience fluctuations in the balance or stability that it experiences, but changes should not be too pronounced to ensure stability is preserved.

As living beings, humans are a part of an ecosystem. We rely on many other components of the environment to survive and experience optimal health and wellbeing. For example:

- Plants and animals are made up of organic matter, which is used for food and provides energy, improving physical health and wellbeing.
- Plants and animals provide opportunities for employment such as the fishing and agriculture industries. This improves income, which can be used to enhance all dimensions of health and wellbeing.
- Predictable weather patterns contribute to effective farming, which promotes health and wellbeing by improving food security.
- Human shelter is often made from natural materials such as timber and stone.
- Clean water and air are products of the ecosystem in which we live and are vital for human survival.
- Sources of renewable energy such as water, wind and waves are increasingly important as non-renewable resources such as coal and oil reserves decline.
- Natural fibres used for clothing and other goods are derived from the ecosystem.
- Natural environments are often used as a source of relaxation and recreation. This contributes to feelings of connectedness to the natural world, which enhances spiritual health and wellbeing.
- Many substances used to manufacture medicines are sourced from the natural environment.

A balanced ecosystem means that these resources are available for human use and can regenerate as quickly as they are used. An ecosystem that is not balanced can mean that resources are used faster than they can regenerate, which can have significant impacts on human health and wellbeing by reducing the availability of essential resources for human use.

CASE STUDY

Mountain Ash ecosystem under threat

The mountain ash ecosystem in the Central Highlands of Victoria supports the world's tallest flowering plants. It's among the world's most carbon-dense forests, supporting an array of threatened forest-dependent species, and generating almost all of the water for the 5 million inhabitants of Melbourne (as well as communities and agriculturalists north of the Great Divide).

The mountain ash ecosystem is under enormous environmental pressure from widespread and recurrent wildfire, coupled with widespread clear-cut logging. Extensive old growth forests once dominated the ecosystem, but now just 1.16 per cent of the ecosystem (1886 hectares of 170 400 ha) is old growth. The widespread young forest is highly flammable and at extreme risk of reburning at high severity. This is especially due to increased temperatures and greater numbers of days marked as 'extreme' on the forest fire danger index.

The collapse will have severe economic and social effects. The value of water from the ecosystem is 25.5 times greater than the value of the timber generated from the same ecosystem. The collapse of the ecosystem also poses an enormous threat for long-term carbon storage, biodiversity conservation and the billion-dollar tourism industry in regional Victoria.



Source: © David Lindenmayer

Pressures:

- Rainfall changes
- Temperature
- Fire
- Habitat change/loss
- Invasive species
- Other

Source: 'Existential threat to our survival: see the 19 Australian ecosystems already collapsing', Dana M. Bergstrom, et al, *The Conversation*, 26 February 2021, <https://theconversation.com/existential-threat-to-our-survival-see-the-19-australian-ecosystems-already-collapsing-154077>

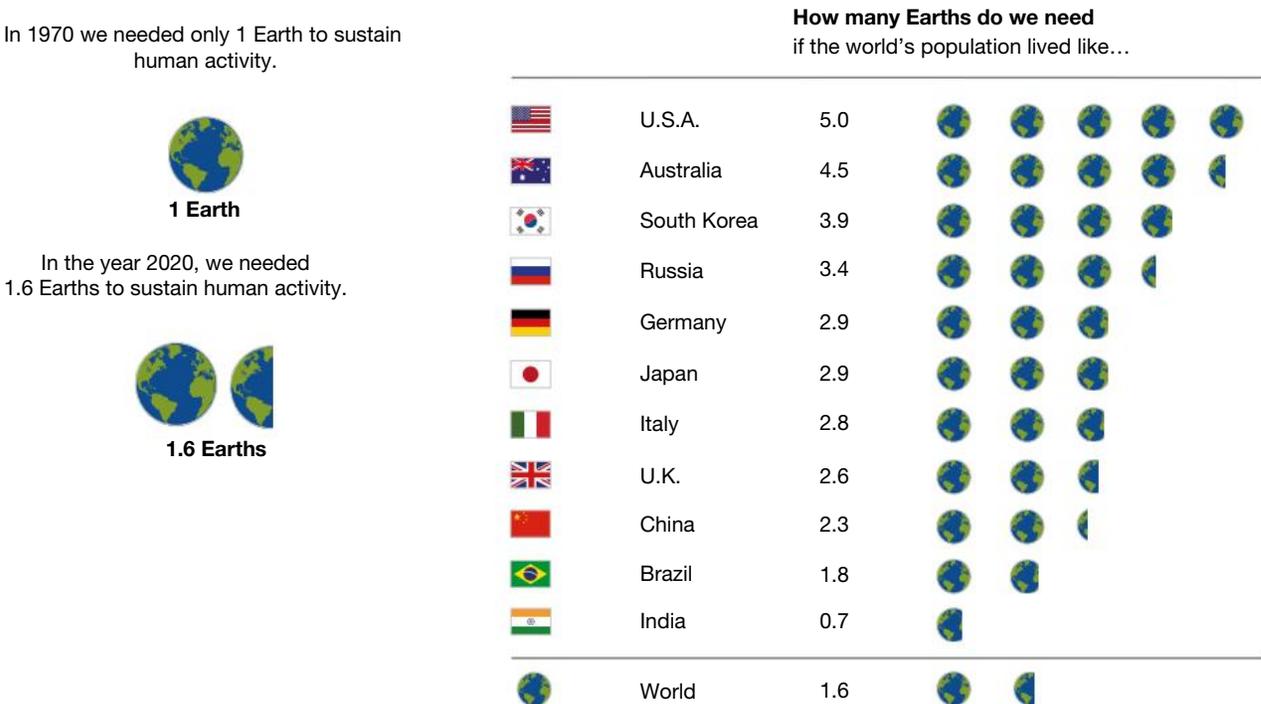
CASE STUDY REVIEW

1. Outline the benefits of the mountain ash ecosystem to other life forms.
2. Identify the threats to the mountain ash ecosystem.
3. Using examples from the case study, explain how an unstable mountain ash ecosystem may impact health and wellbeing.

1.7.3 Sustainable resources

Sustainability is defined by the United Nations as 'meeting the needs of the present without compromising the ability of future generations to meet their own needs.' Sustainable resources therefore relate to ensuring that the resources used to promote health and wellbeing in the present are available for future generations, so they too can experience a good quality of life. Resources required for energy production, food and water supply, employment, housing and healthcare are examples of materials that must be sustainable if current standards of health and wellbeing are to be maintained. As of 2021, these resources are not being used in a sustainable manner and this poses serious threats to health and wellbeing globally (see **FIGURE 1.33**).

FIGURE 1.33 Explanation of Earth Overshoot Day, the date at which humanity's use of natural resources exceeds what the Earth can regenerate in that given year.



Many resources that are currently used for energy production, such as oil, gas and coal, can take millions of years to regenerate. So once these resources are used, they are not available for future generations. The transition to sustainable energy production such as wind and solar power will assist in satisfying energy needs into the future, allowing future generations to enjoy uninterrupted access to resources such as heating, cooling, electricity and transport. These resources are often required to engage in activities such as education, employment, sleep, food production and recreation, which all work to promote health and wellbeing. For example, adequate heating and cooling can promote productivity at school and this in turn can promote emotions such as contentment, which enhances emotional health and wellbeing.

FIGURE 1.34 Wind and solar power are examples of sustainable resources.



Sustainable food and water sources are required for human survival and optimal health and wellbeing. Agriculture currently accounts for over 35 per cent of total land use on Earth and over 70 per cent of total freshwater use. As the population of the world continues to increase, the need for fertile land and fresh water will continue to rise. Sustainable use of land and water is therefore required to ensure that future generations have a reliable food and water supply to prevent disease and enhance physical health and wellbeing.

Fisheries are another source of food and income for billions of people around the world. Fish populations are decreasing due to overfishing and habitat destruction. If this trend continues, food availability and income generation will be negatively impacted, reducing the ability of many people to achieve optimal health and wellbeing.

Forests and other natural environments provide resources such as timber for building shelter and other structures, clean air for respiration and disease prevention, fibres used for manufacturing and clothing, and substances used for medicine production. Ensuring the sustainability of natural environments is therefore essential to provide these essential resources and promote an adequate standard of living in the future.

1.7.4 Social justice

Social justice can be defined in a number of ways, but the common underlying theme is equal rights for all, regardless of personal traits such as sex, class and income, ethnicity, religion, age or sexual orientation. Social justice means that all people are treated fairly, including women and girls in both their private and public life. Social justice includes economic justice, a key aspect of which includes the ability of all people to earn a decent wage and build material wealth. Social justice includes celebrating diversity and promoting the health and wellbeing of all people.

The Australian government's concept of social justice reflects this understanding, defining a socially just Australia as one in which there is:

- a fair distribution of economic resources
- equal access to essential services such as housing, healthcare and education
- equal rights in civil, legal and industrial affairs
- equal opportunity for participation by all in personal development, community life and decision-making.

When society is just, all people have the same access to resources and opportunities, including:

- formal education
- meaningful employment and fair pay
- adequate shelter
- social security
- food and water
- healthcare
- recreation and leisure activities
- community participation.

Social justice can be defined in a number of ways, but the common underlying theme is equal rights for all, regardless of personal traits such as sex, class and income, ethnicity, religion, age or sexual orientation

The importance of these resources for health and wellbeing have already been discussed. Equality of access to these resources is an issue that continues to impact the lives of billions of people globally. Equal access to these resources ensures that every person has the same opportunity to promote their health and wellbeing, and the outcomes of a person's life are not dictated by factors out of their control such as ethnicity, sex or age.

1.7.5 Equity

Equity is a concept that relates to fairness and social justice, but has a particular focus on disadvantaged groups. As already discussed in this subtopic, a range of resources are required to promote health and wellbeing, and all people should have access to the resources they require for a decent standard of living.

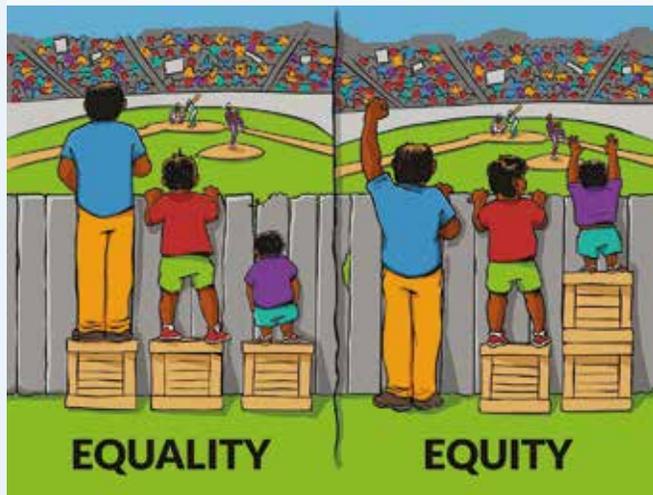
In basic terms, equity means that disadvantaged groups are targeted to improve their quality of life and achieve minimum standards of living. All people in the community should have access to fundamental resources, and governments should implement laws and policies that ensure no person is disadvantaged in their ability to access such resources.

WHAT IS THE DIFFERENCE BETWEEN EQUITY AND EQUALITY?

Equity and equality are two terms that are often used interchangeably and, even though they are related, they are distinct concepts. Social justice has a stronger focus on equality than equity.

- Equity relates to fairness. It is about ensuring every person can access the resources they need to lead a good life and experience a high level of health and wellbeing. Equity includes taking unfair circumstances into account, so that those who are disadvantaged are given the opportunity to participate in life on a level playing field.
 - Equality relates to all things being equal. Equality is important when all people experience the same conditions such as income, education and occupation. These concepts can be explored further by considering the financial assistance provided by the government (often referred to as social security or social protection) as an example:
 - Equality would be achieved if all people in Australia received the same amount of government assistance regardless of their income, education, home ownership status, level of health and wellbeing experienced including chronic illness or disability, and access to healthcare.
 - Equity is reflected when the amount of government assistance provided takes into consideration a person's specific circumstances such as income and access to resources such as employment. Equity means that those who need the most assistance receive more support.
1. Briefly explain the difference between equity and equality.
 2. Other than social security, discuss an example that illustrates the concepts of equality and equity.
 3. Explain why equity is important for achieving health and wellbeing from a population perspective.

FIGURE 1.35 A visual representation of the difference between equality and equity



Equity relates to a need for fairness in relation to an acceptable quality and standard of living. It goes beyond enforcing laws, and ensures that all people can share in the benefits of a society. This can work to reduce feelings of segregation and thereby enhance feelings of belonging and promote spiritual health and wellbeing.

Equity promotes health and wellbeing by ensuring access to:

- education
- employment
- human rights
- resources such as healthcare.

In order to promote health and wellbeing, equity is a key consideration within and between generations. It also extends to issues of social justice and the sustainable use of resources.

Equity as a concept is fundamental to health and wellbeing. Billions of people around the world, such as the homeless, Indigenous people and those living in poverty, do not experience the same level of health and wellbeing as the rest of the population. Promoting equity improves opportunities for these groups and increases their ability to achieve optimal health and wellbeing. For example, equity means that all people can achieve a minimum level of income. This money can be used for food, shelter and healthcare, which can reduce the risk of developing disease, promoting physical health and wellbeing. It can also mean that they feel valued, which can promote self-esteem and enhance mental health and wellbeing.

EXAM TIP

When making links between two or more prerequisites and health outcomes, it is important to ensure you don't 'double dip'. Double dipping is a term used in Health and Human Development to describe an answer that has used two similar responses and therefore shows limited understanding. For example, if you are required to link both income and food to health and wellbeing, each response should show a different aspect of understanding. If the first response discusses how income can be used to purchase food, which in turn provides energy, therefore promoting physical health and wellbeing, there is a risk of double dipping when making the link between food and health and wellbeing. To ensure double dipping does not occur, do not use food in the income link and instead reference another resource, such as being able to afford social activities, adequate shelter or healthcare and then link to the dimension of health and wellbeing from there.

1.7 Exercises

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1.7 Quick quiz

on

1.7 Exercise

1.7 Exam questions

Select your pathway

■ LEVEL 1

1, 2

■ LEVEL 2

3, 4, 5, 6

■ LEVEL 3

7, 8, 9, 10

Test your knowledge

1. Briefly explain the following terms and include one example that relates to each:
 - a. ecosystem
 - b. sustainability
 - c. social justice
 - d. equity.
2. Explain what is meant by a stable ecosystem and discuss why stable ecosystems are important for human life.

Apply your knowledge

3. Explain how generating an income can assist governments in promoting the health and wellbeing of a country's population.
4. Explain how having an adequate income can promote the health and wellbeing of individuals.
5. Explain how a stable ecosystem may promote three dimensions of health and wellbeing.
6. Explain the difference between social justice and equity.
7. Explain why equity is a key consideration in achieving optimal health and wellbeing globally.
8. Select two prerequisites from subtopic 1.6 and two from subtopic 1.7 and explain how they are interrelated; that is, how they can impact each other.
9. It is not possible to explain all impacts on health and wellbeing for the prerequisites covered in this subtopic. Using examples not provided in this subtopic, explain how a stable ecosystem, sustainable resources, social justice and equity may promote health and wellbeing.
10. Explain how:
 - a. income can act as a resource nationally
 - b. a stable ecosystem can act as a resource globally
 - c. sustainable resources can act as a resource nationally
 - d. social justice can act as a resource individually and nationally.

1.7 Quick quiz



1.7 Exercise

1.7 Exam questions

Question 1 (6 marks)

Source: VCE 2019, Health and Human Development Exam, Q.1; © VCAA

Social justice and equity are prerequisites for health.

- a. **Describe** social justice and equity. 2 marks
- b. Select either social justice or equity and **explain** why it is a prerequisite for health at an individual level and at a global level. 4 marks
Prerequisite for health selected _____

Question 2 (2 marks)

Source: VCE 2018, Health and Human Development Exam, Q.13; © VCAA

Peace is a WHO prerequisite for health.

Explain how peace can lead to improved health outcomes.

Question 3 (2 marks)

Explain why the prerequisite of income is important to health and wellbeing at an individual level.

Question 4 (3 marks)

Other than income and social justice, **identify** three prerequisites of health and wellbeing.

Question 5 (1 mark)

Outline which of the following is not a prerequisite of health and wellbeing: peace, adequate food, equality, education.

More exam questions are available in your learnON title.

1.8 KEY SKILLS

1.8.1 Explain the dynamic and subjective nature of the concepts of health and wellbeing and illness



KEY SKILL Explain the dynamic and subjective nature of the concepts of health and wellbeing and illness

Tell me

To provide an adequate explanation of the dynamic and subjective nature of health and wellbeing and illness, an explanation of the concepts (health and wellbeing; illness) is a good starting point.

When explaining any key term, it is important to include all the crucial aspects of the concept. Frequent use of these terms is a good way to gain an understanding of what they mean and when they should be used. When explaining a key term, try to avoid an explanation that is too narrow. For example:

- An explanation of health and wellbeing could acknowledge that there are many aspects or dimensions to health and wellbeing but all relate to the state of a person's existence in relation to the physical, social, emotional, mental and spiritual dimensions and how the person feels about their life.
- An explanation of illness could include that it is a concept related to personal experience of a disease or injury.

Show me

The following is an example of an explanation of health and wellbeing:

Health and wellbeing is not just the absence of disease, although this is an aspect of optimal health and wellbeing. Good health and wellbeing is a subjective concept that means different things to different people. Broadly, health and wellbeing relates to a person's physical, social, emotional, mental and spiritual being, and is characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged.

Tell me

It is also beneficial to be able to explain each dimension of health and wellbeing because these are crucial components of this concept. In addition, it is useful to provide examples that relate to each dimension so that their possible impacts on health and wellbeing can be predicted in a particular scenario.

Show me

For example, it is useful to know that physical health and wellbeing refers to 'a state of physical well-being in which a person is physically able to perform their daily activities without restrictions'.¹

Physical health and wellbeing includes the physical capacity to perform tasks, physical fitness, body weight, blood pressure and energy levels.²

1 A definition or explanation of physical health and wellbeing is provided.

2 A range of factors that relate to physical health and wellbeing are identified.

Tell me

This skill also requires an explanation of the dynamic and subjective nature of health and wellbeing and illness.

To satisfy this part of the skill, it is important to acknowledge that health and wellbeing and illness are dynamic and therefore undergo constant change and can also change quickly, and are also subjective and therefore mean different things to different people.

Show me

The following example discusses the dynamic nature of these concepts:

The concepts of health and wellbeing and illness are dynamic, which means that they are constantly changing and the way in which an individual views them can change over time.³ Events that contribute to changes in health and wellbeing and illness include:

- Recovery from disease: A person who is experiencing a high level of illness and poor physical health and wellbeing due to having a disease may access medication or surgery that can cure the condition or relieve symptoms, which reduces pain and increases levels of energy. This improves physical health and wellbeing and contributes to a decrease in illness.
- Forming new relationships: If an individual has few social connections, they may experience poor social health and wellbeing. If they make new friends, this can provide opportunities for social interaction which improves social health and wellbeing.
- Personal achievement: A person who is experiencing poor emotional health and wellbeing may achieve at school, work or in the community, for example, by being elected as a leader or being promoted, which can promote a sense of pride that then enhances emotional health and wellbeing. Personal achievement can also promote self-esteem, which is an aspect of mental health and wellbeing.
- Community participation: A person experiencing poor spiritual health and wellbeing may become involved in community activities such as volunteering to deliver meals to the elderly, which can promote a sense of belonging, and this can then enhance spiritual health and wellbeing.⁴

3 An introduction of the dynamic nature of the concepts is provided including an understanding of the term 'dynamic'.

4 Specific examples of how health and wellbeing and illness can change are provided.

Similarly, incidents such as infection, conflict, the loss of a loved one, social isolation and sadness can cause negative impacts on the dimensions of health and wellbeing and illness.

The way an individual views health and wellbeing and illness is also dynamic and can change throughout life as a result of a range of factors such as age, disease, living conditions, employment and levels of energy. This reflects the subjective nature of these concepts.⁵

5 The fact that an individual's view of health and wellbeing and illness can change over time is outlined.

An example of an explanation of the subjective nature of these concepts could be:

The concepts of health and wellbeing and illness are subjective, which means they mean different things to different people.⁶

6 An introduction to the subjective nature of the concepts is provided, including an understanding of the term 'subjective'.

For example, a student may view health and wellbeing as a concept related to their ability to complete school tasks and maintain social connections, whereas a parent may view health and wellbeing as a concept related to their ability to provide for their family and run an efficient household.⁷

7 Specific examples of the subjective nature of health and wellbeing are provided.

An individual with a high threshold for pain may not view illness as related to the presence of disease, but rather an inability to function normally, whereas a person with a low threshold for pain may view illness as the presence of any disease.⁸

8 Specific examples of the subjective nature of illness are provided.

Practise the key skill

1. Explain what is meant by the terms 'dynamic' and 'subjective'.
2. Provide three examples of characteristics associated with optimal emotional health and wellbeing.
3. Explain the subjective nature of physical health and wellbeing.
4. Explain the dynamic nature of the concept of illness.

1.8.2 Describe interrelationships between dimensions of health and wellbeing



tivd-1904

KEY SKILL Describe interrelationships between dimensions of health and wellbeing

Tell me

In order to master this key skill, it is important to be able to explain each dimension of health and wellbeing (physical, social, emotional, mental and spiritual) and to be able to identify examples of characteristics that relate to each. A useful approach is to practise identifying the dimensions of health and wellbeing in case studies or in examples drawn from personal experience.

When describing the interrelationships between the dimensions of health and wellbeing, it might be necessary to describe the possible effects on health and wellbeing in a scenario or context that is totally unfamiliar. Again, practising identifying possible effects on health and wellbeing can be beneficial. Start by thinking of something (a set of circumstances such as relationship breakdown, illness or stress) that could affect one of the dimensions and then brainstorm ways that this impact could affect a different dimension. When doing this, remember that all five dimensions of health and wellbeing will be affected including the dimension where the initial effect occurred. For example, a condition such as rheumatoid arthritis (which relates to physical health and wellbeing) will lead to other impacts on physical health and wellbeing (such as reduced fitness) as well as impacting on social, emotional, mental and spiritual health and wellbeing. The dimension that you find easiest to link to is a good starting point.

In the following scenario, Brooke has just broken up with her boyfriend of six months and is feeling upset and anxious. During the course of the relationship, Brooke had begun to associate with her boyfriend's friends. She now feels that she has neglected her own friends and that it may be difficult to re-establish links with them.

Show me

The following response explains how dimensions of health and wellbeing⁹ could interrelate in Brooke's situation.

As Brooke is feeling upset and anxious, she may not be eating properly or exercising. This may affect her fitness levels and her body weight (an aspect of physical health and wellbeing).¹⁰ If she gains weight, Brooke may not feel good about her body, which could cause a decrease in her level of self-esteem (mental health and wellbeing). Lower self-esteem could mean that she does not feel up to re-establishing connections with her old friends (social health and wellbeing). If she doesn't develop meaningful relationships, she may feel that she lacks a sense of belonging and connection to her world (spiritual health and wellbeing). If she doesn't feel connected to her world, she may experience a range of emotions, such as sadness and despair (emotional health and wellbeing).¹¹

⁹ If the question doesn't specify, try to cover a range of dimensions of health and wellbeing.

¹⁰ Link the example to the dimension of health and wellbeing.

¹¹ The other four dimensions of health and wellbeing are also addressed.

Practise the key skill

5. Explain how having chicken pox could affect the dimensions of health and wellbeing.
6. Use the condition 'depression' to show how social and spiritual health and wellbeing can interrelate.
7. Discuss how regular exercise could contribute to interrelationships between physical and mental health and wellbeing.
8. Brendan left school at the end of Year 10 to start an apprenticeship. Use this example to show interrelationships between dimensions of health and wellbeing.

1.8.3 Explain the individual and collective importance of health and wellbeing as a resource

tivd-1905

KEY SKILL Explain the individual and collective importance of health and wellbeing as a resource

Tell me

This skill requires links to be made between good health and wellbeing, and positive outcomes for both individuals and countries.

The first step in developing this skill is understanding aspects of optimal health and wellbeing in relation to each dimension. For example, optimal mental health and wellbeing includes:

- low levels of stress
- high self-esteem
- positive thought patterns
- high levels of confidence.

Once aspects of optimal health and wellbeing are known, links can be made between each aspect and benefits for individuals or countries. For example:

- Low levels of stress allow individuals to focus on activities that improve their life such as studying, working or socialising.
- Low levels of stress also improve immune system function and promote physical health and wellbeing by decreasing the risk of contracting infectious diseases. This decreases the amount of money that must be spent by the individual on healthcare including doctor's consultations and medication.
- High self-esteem encourages people to do their best in all aspects of their life, including work. This can contribute to higher performance at work and a higher income. Income is a resource that can be used for healthcare, food, clothing, shelter and socialising, which all enhance quality of life.
- Positive thought patterns reduce the risk of developing mental illnesses such as depression. This decreases the economic costs to the community and country of treating these diseases.
- Confidence contributes to individuals challenging themselves and trying new things. This can assist in developing new industries, contributing to economic growth on both personal and national levels.

It is important to practise making links between each dimension of health and wellbeing and benefits for both individuals and countries because a range of possible links exist.

Show me

Consider the following example where the importance of optimal health and wellbeing is discussed in relation to individuals.

Optimal physical health and wellbeing means that a person is less likely to experience an infectious or chronic condition.¹² With less illness, individuals are more equipped to work and earn an income.¹³ This income can then be used to provide resources such as food, shelter, clothing and adequate healthcare, which can further promote health and wellbeing by reducing levels of stress (mental health and wellbeing), provide adequate levels of energy for socialising (physical and social health and wellbeing), give the individual a sense of purpose in life (spiritual health and wellbeing), and assist in experiencing positive emotions such as satisfaction (emotional health and wellbeing).¹⁴

¹² An aspect of optimal health and wellbeing is identified.

¹³ A link is made between the aspect of health and wellbeing and a benefit for the individual.

¹⁴ Specific links to aspects of improved quality of life and increased health and wellbeing are made.

Practise the key skill

9. Explain how optimal social health and wellbeing can be a resource for individuals and countries.
10. Explain how spiritual health and wellbeing can be a resource nationally.

1.8.4 Describe global benefits of the pursuit of optimal health and wellbeing



KEY SKILL Describe global benefits of the pursuit of optimal health and wellbeing

Tell me

To demonstrate this skill, benefits of optimal health and wellbeing on a global scale must be understood.

Although the initial focus of a response may be on individuals, the benefit to large numbers of individuals around the world experiencing optimal health and wellbeing must be addressed in order to satisfy this skill. In this sense, the focus shifts from an individual perspective to a global context.

Show me

For example, to explain the global benefits of reduced rates of communicable diseases, a response may reflect the following:

Reduced rates of communicable diseases such as malaria mean that fewer people experience the symptoms associated with this condition and therefore fewer people will die as a result.¹⁵ With people in better physical health and wellbeing, they have an increased capacity to work and to be productive members of society. With more people being productive, a greater amount of resources such as food and shelter can be provided to meet the needs of the community.¹⁶ This works to decrease conflict between countries as more people are able to access the resources they need for a decent standard of living, and this increases their ability to lead lives they value and promotes health and wellbeing.¹⁷

¹⁵ An example of health and wellbeing in a global context is identified.

¹⁶ Links are established between the example of health and wellbeing and the benefits for individuals and communities

¹⁷ Benefits of optimal health and wellbeing on a global scale are identified.

Practise the key skill

11. Explain how optimal health and wellbeing can promote economic development globally.
12. Besides economic development, outline two global benefits of optimal health and wellbeing.

1.8.5 Identify the WHO's prerequisites for health and explain their links to improved health outcomes



KEY SKILL Identify the WHO's prerequisites for health and explain their links to improved health outcomes

Tell me

The first step to achieving this skill is to be able to recall the nine prerequisites for health as identified by the World Health Organization:

- peace
- shelter
- education
- food
- income
- a stable ecosystem

- sustainable resources
- social justice
- equity.

The use of **mnemonics** or acronyms can be used to assist in remembering such lists. For example:

- **P**eople **s**hould enjoy **e**dible **f**ood **i**ncluding **s**ome **s**ustainable **s**tew
- **P**eace / **S**helter / **E**quity / **E**ducation / **F**ood / **I**ncome / **S**ocial justice / **S**ustainable resources / **S**table ecosystem

Although knowledge of the prerequisites is still required, remembering this mnemonic can assist in recalling at least the first letter of each one.

Once the prerequisites can be identified, links must be made from each one to improved health and wellbeing outcomes. In order to make such links, an understanding of each prerequisite is essential so possible impacts on health and wellbeing can be discussed.

Mnemonics acronyms that can be used to assist in remembering lists

Show me

For example, **peace**¹⁸ means that infrastructure is less likely to be destroyed as a result of conflict.¹⁹ This increases the capacity of individuals to access resources such as water. Water assists in promoting physical health and wellbeing by keeping people hydrated.²⁰

- ¹⁸ One of the prerequisites is identified.
- ¹⁹ An impact of the prerequisite is stated.
- ²⁰ A specific link to improved health and wellbeing is made.

Practise the key skill

13. Explain how each of the following can promote health and wellbeing:
- a. income
 - a stable ecosystem
 - equity.
-

1.9 Review

1.9.1 Topic summary

1.2 Concepts of health and wellbeing and illness

- Health and wellbeing is a concept that refers to the state of an individual's physical, social, emotional, mental and spiritual existence and is characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged.
- Health and wellbeing is a dynamic concept, which means it can change regularly and/or quickly.
- Health and wellbeing is viewed in many different ways and is therefore said to be subjective.
- A range of factors influence how an individual views health and wellbeing including: age, fitness, body weight, social networks, income, occupation, education and culture.
- Aboriginal and Torres Strait Islander peoples place significant importance on the land and their ancestry in relation to their health and wellbeing.

1.3 Dimensions of health and wellbeing

- The five dimensions of health and wellbeing are physical, social, emotional, mental and spiritual.
- Physical health and wellbeing relates to the functioning of the body and its systems; it includes the physical capacity to perform daily activities or tasks. Factors that relate to physical health and wellbeing include body weight, fitness, energy levels and the absence or presence of disease or illness.
- Social health and wellbeing is the ability to form meaningful and satisfying relationships with others and the ability to manage or adapt appropriately to different social situations.
- Emotional health and wellbeing is defined as the ability to recognise, understand and effectively manage and express emotions as well as the ability to display resilience.
- Mental health and wellbeing relates to the state of a person's mind or brain and the ability to think and process information. Optimal mental health and wellbeing enables an individual to positively form opinions, make decisions and use logic. Mental health and wellbeing relates to the current state of the mind, the nature of the feelings experienced and how a person feels about themselves.
- Spiritual health and wellbeing relates to ideas, beliefs, values and ethics that arise in the minds and conscience of human beings. It includes the concepts of hope, peace, a guiding sense of meaning or value, and reflection on a person's place in the world. Spiritual health and wellbeing can also relate to organised religion, a higher power and prayer, values, a sense of purpose in life, connection or belonging.

1.4 Interrelationships between the dimensions of health and wellbeing

- The five dimensions of health and wellbeing are interrelated; that is, they all affect each other.
- Overall health and wellbeing is determined by the combined levels of health and wellbeing in the five dimensions.
- When all five dimensions are as good as they can be, health and wellbeing is said to be optimal.

1.5 Optimal health and wellbeing as a resource

- Optimal health and wellbeing is a resource for individuals, countries and the global population.
- For individuals, optimal health and wellbeing reduces illness and increases the capacity for people to work towards what they want out of life such as employment, socialising and caring for others.
- For countries, optimal health and wellbeing reduces health-related expenditure, increases productivity and economic development, and promotes civic participation.
- Globally, optimal health and wellbeing promotes economic and social development and reduces the risk of conflict.

1.6 Prerequisites for health: peace, shelter, education and food

- The WHO identifies nine prerequisites that each have a range of effects on health: peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity.

- Peace reduces the risk of premature death and injury and increases the ability of people to work, attend school and spend time with loved ones.
- Adequate shelter provides protection from the elements, but also provides a safe place for people to spend their time and pursue activities, such as study, that promote health and wellbeing.
- Education increases the ability to earn an income and be a productive member of society. Educated individuals are more likely to experience high levels of health and wellbeing.
- Food is vital for proper human functioning. Having access to a reliable food supply also decreases the risk of disease, reduces stress and allows more time to pursue activities such as study and work.

1.7 Prerequisites for health: income, a stable ecosystem, sustainable resources, social justice and equity

- Income allows individuals to purchase goods that promote health and wellbeing such as food, healthcare and adequate shelter.
- A stable ecosystem means that resources such as food and water are available for human use and can regenerate as quickly as they are used. An unbalanced ecosystem can mean resources are used faster than they can regenerate, which can have significant impacts on human health and wellbeing.
- Sustainable resources mean that the resources used to promote health and wellbeing in the present are available for future generations, so they too can experience a good quality of life.
- Social justice relates to equal rights for all, regardless of personal traits such as sex, class and income, ethnicity, religion, age or sexual orientation.
- Equity relates to providing more assistance to disadvantaged groups so all people can access minimum levels of income and resources that promote health and wellbeing.

on Resources

 **Digital document** Summary (doc-36136)

1.9.2 Key terms

Chronic condition any disease or condition that lasts a long time (usually longer than six months). It usually can't be cured and therefore requires ongoing treatment and management. Examples include arthritis and asthma.

Civic participation refers to involvement in a community group such as a union, professional association, political party, environmental or animal welfare group, human and civil rights group, or body corporate or tenants' association

Communicable diseases infectious diseases that are transmitted from the environment; including through air, water, food and other infected organisms (including other humans)

Dimensions of health and wellbeing these are the components that make up an individual's overall health and wellbeing. The dimensions are physical, social, emotional, mental and spiritual.

Disease a physical or mental disturbance involving symptoms, dysfunction or tissue damage

Dynamic continually changing

Emotional health and wellbeing relates to the ability to express emotions and feelings in a positive way. Emotional health and wellbeing is about the positive management and expression of emotional actions and reactions as well as the ability to display resilience. Emotional health and wellbeing is the degree to which an individual feels emotionally secure and relaxed in everyday life

Equilibrium a state of balance and/or calmness

Health and wellbeing the state of a person's physical, social, emotional, mental and spiritual existence, characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged

Illness a subjective concept related to personal experience of a disease or injury

Infirmary the quality or state of being weak or ill; often associated with old age

Mental health and wellbeing the current state of wellbeing relating to a person's mind or brain and the ability to think and process information. A mentally healthy brain enables an individual to positively form opinions, make decisions and use logic

Mnemonics acronyms that can be used to assist in remembering lists

Pandemic the spread of infectious disease through human populations across a large region such as multiple continents or worldwide

Pathogens bacteria, viruses and other microbes that can cause disease



Physical health and wellbeing relates to the functioning of the body and its systems; it includes the physical capacity to perform daily activities or tasks

Productivity relates to the efficiency of production of goods and services. Productivity is measured by the amount of output produced per unit of input

Social health and wellbeing relates to the ability to form meaningful and satisfying relationships with others and the ability to manage or adapt appropriately to different social situations. It also includes the level of support provided by family and within a community to ensure that every person has equal opportunity to function as a contributing member of the society

Social justice can be defined in a number of ways, but the common underlying theme is equal rights for all, regardless of personal traits such as sex, class and income, ethnicity, religion, age or sexual orientation

Spiritual health and wellbeing relates to ideas, beliefs, values and ethics that arise in the minds and conscience of human beings. It includes the concepts of hope, peace, a guiding sense of meaning or value, and reflection on your place in the world.

Subjective influenced by or based on personal beliefs, feelings or opinions

Vector a living thing that carries and transmits pathogens to other living things

▶ 1.9.3 Extended response: build your exam skills

tlvd-
2877

Breaking down the question

An essential skill in the Health and Human Development course is being able to answer extended response questions.

On the Unit 3 and 4 VCAA Examination, there will be at least one question containing three to five pieces of stimulus material that will be worth 8 to 10 marks.

Throughout this text, you will be provided with opportunities to develop this skill by practising the requirements of an extended response question. Note that the complexity of these activities will increase as we move through the course.

These questions often contain multiple requirements and all must be adequately addressed to ensure you are eligible for a high score. The first step in preparing to answer these questions is to break it down into its components.

Consider the following question:

Using the information provided and your own knowledge, discuss the dynamic and subjective nature of health and wellbeing and illness and explain why multiple prerequisites are required for improvements to health and wellbeing to be made.

Step 1: In order to achieve a high score for this question, all parts of the question must be addressed.

You can think of these requirements like a checklist:

- Use the information provided (at least one piece of information from each source)
- Use your own knowledge
- Discuss the dynamic and subjective nature of health and wellbeing
- Discuss the dynamic and subjective nature of illness
- Explain why multiple prerequisites are required for improvements to health and wellbeing to be made.

Step 2: You can create your own checklist by using strokes (forward slashes) to break the question down into its parts:

Using the information provided/and your own knowledge/discuss the dynamic and subjective nature of health and wellbeing/and illness/and explain why multiple prerequisites are required for improvements to health and wellbeing to be made.

Step 3: You can then place a tick next to each component when you feel you have adequately addressed it:

Using the ✓ information provided/and your ✓ own knowledge/discuss the dynamic ✓ and subjective nature of health and wellbeing/and illness ✓/and explain why multiple prerequisites are required for improvements to health and wellbeing to be made. ✓

Practise this skill

Break each of the following questions down into its individual components:

1. Using the information provided, explain two dimensions of health and wellbeing and explain the importance of each as a resource both individually and nationally.
2. Using the information provided and your own knowledge, explain why income is considered a prerequisite for health and wellbeing for individuals and discuss the potential impacts of lack of income on countries.
3. Drawing on information presented and your own understanding, identify and describe three prerequisites for health and wellbeing and explain how each one can promote both physical and social health and wellbeing.

1.9 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

1.9 Exam questions

1.9 Exam questions

Question 1 (4 marks)

Source: *VCE 2020, Health and Human Development Exam, Q.1*; © VCAA

- a. Using one example, **outline** why health and wellbeing is said to be dynamic. **2 marks**
- b. **Outline** one benefit of optimal health and wellbeing as a resource nationally. **2 marks**

Question 2 (6 marks)

Source: *VCE 2019, Health and Human Development Exam, Q.1*; © VCAA

- a. Social justice and equity are prerequisites for health.
Describe social justice and equity. **2 marks**
- b. Select either social justice or equity and **explain** why it is a prerequisite for health at an individual level and at a global level. **4 marks**

Question 3 (4 marks)

- a. Briefly **explain** what is meant by spiritual health and wellbeing. **2 marks**
- b. Briefly **describe** the difference between mental and emotional health and wellbeing. **2 marks**

Question 4 (4 marks)

Darren was recently diagnosed with anxiety (a mental illness). Use Darren's condition to **show** interrelationships between:

- a. mental and social health and wellbeing **2 marks**
- b. physical and emotional health and wellbeing. **2 marks**

Question 5 (4 marks)

Briefly **explain** why shelter and sustainable resources are important for improved health outcomes.



Resources

Digital document	Key terms glossary (doc-36123)
Exam question booklet	Topic 1 Exam question booklet (eqb-0055)
Interactivities	Crossword (int-6879) Definitions (int-6880)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 1 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 1.1 Key terms glossary (doc-36123)
- 1.6 Homelessness worksheet (doc-32187)
- Food worksheet (doc-32188)
- 1.9 Summary (doc-36136)
- Key terms glossary (doc-36123)

Exam question booklets

- 1.1 Topic 1 Exam question booklet (eqb-0055)
- 1.9 Topic 1 Exam question booklet (eqb-0055)

Teacher-led videos

- 1.5 Health and wellbeing as a resource (tlvd-0255)
- 1.8 Key skill: Explain the dynamic and subjective nature of the concepts of health and wellbeing and illness (tlvd-1903)
- Key skill: Describe interrelationships between dimensions of health and wellbeing (tlvd-1904)

Key skill: Explain the individual and collective importance of health and wellbeing as a resource (tlvd-1905)

Key skill: Describe global benefits of the pursuit of optimal health and wellbeing (tlvd-1906)

Key skill: Identify the WHO's prerequisites for health and explain their links to improved health outcomes (tlvd-1907)

- 1.9 Extended response: build your exam skills (tlvd-2877)

Weblinks

- 1.6 Homelessness
- Food

Interactivities

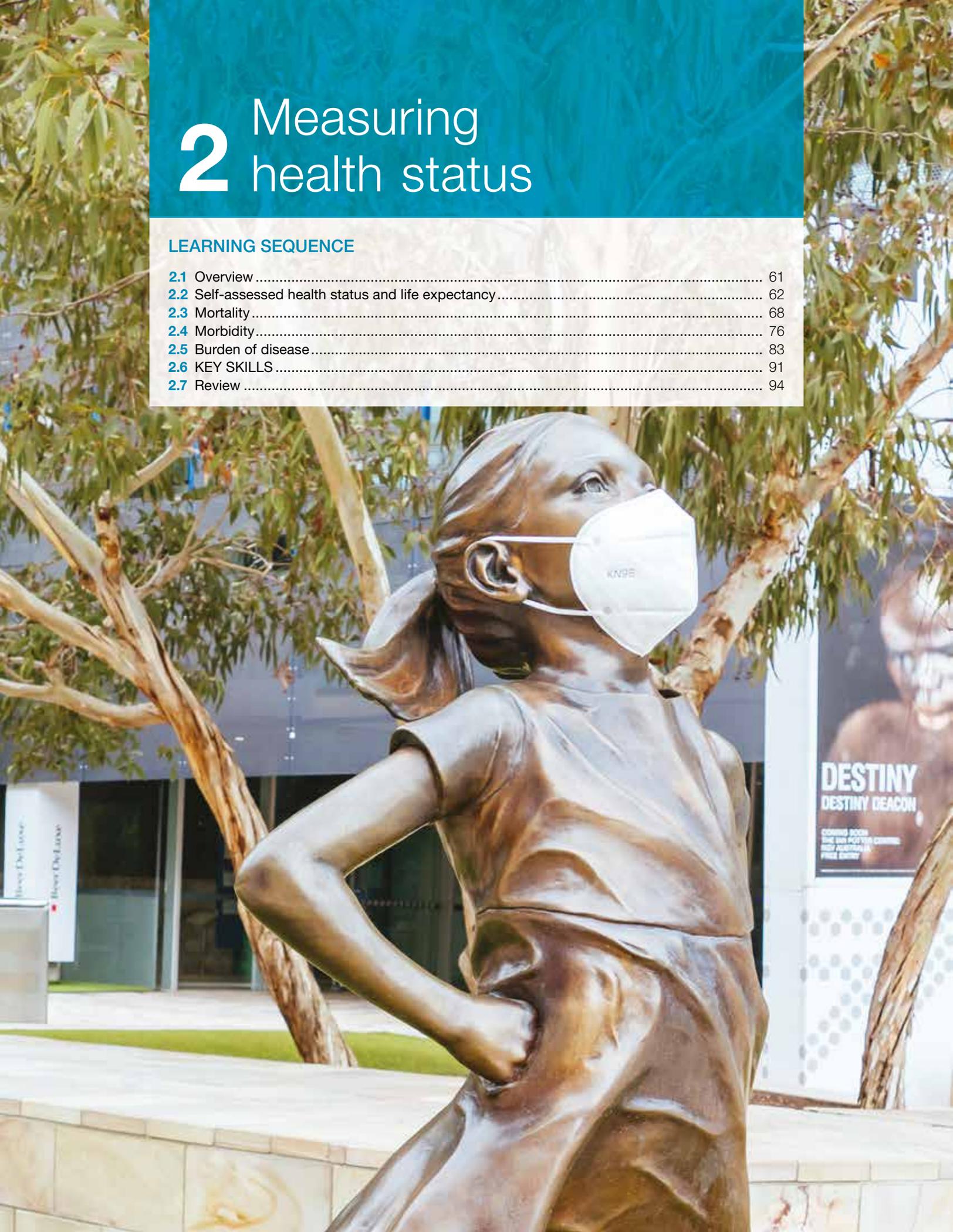
- 1.9 Crossword (int-6879)
- Definitions (int-6880)

To access these online resources, log on to www.jacplus.com.au.

2 Measuring health status

LEARNING SEQUENCE

2.1 Overview	61
2.2 Self-assessed health status and life expectancy	62
2.3 Mortality	68
2.4 Morbidity	76
2.5 Burden of disease	83
2.6 KEY SKILLS	91
2.7 Review	94



2.1 Overview

Key knowledge	Key skills
Indicators used to measure and understand health status: incidence, prevalence, morbidity, burden of disease, disability-adjusted life year (DALY), life expectancy, health-adjusted life expectancy (HALE), mortality (including maternal, infant and under 5) and self-assessed health status	Describe and apply indicators used to measure health status Use data to describe and evaluate the health status of Australians

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Asphyxia	Maternal mortality ratio
Burden of disease	Morbidity
Congenital malformations	Mortality
Disability-adjusted life year (DALY)	Mortality rate
Health-adjusted life expectancy (HALE)	Obstetric haemorrhage
Health indicators	Prevalence
Health status	Self-assessed health status
Hospital separation	Trend
Incidence	Under-five mortality rate (U5MR)
Infant mortality rate	Years lost due to disability (YLD)
Life expectancy	Years of life lost (YLL)
Maternal mortality	

Exam terminology

Describe Provide a general description

Apply Use your knowledge in the given case study/scenario

Evaluate Make a judgement, weigh up the pros and cons

Resources

 **Digital document** Key terms glossary (doc-36124)

 **Exam question booklet** Topic 2 Exam question booklet (eqb-0056)

2.2 Self-assessed health status and life expectancy

KEY CONCEPT Exploring the self-assessed health status, life expectancy and health-adjusted life expectancy of Australians

In topic 1, the concept of health and wellbeing and the five dimensions that contribute to overall health and wellbeing were examined. As well as exploring physical, social, mental, emotional and spiritual health and wellbeing, it is useful to be able to measure the level of health and wellbeing experienced by groups or whole populations. Measurable aspects of health and wellbeing provide an ability to make judgements relating to the **health status** experienced by individuals, groups and countries.

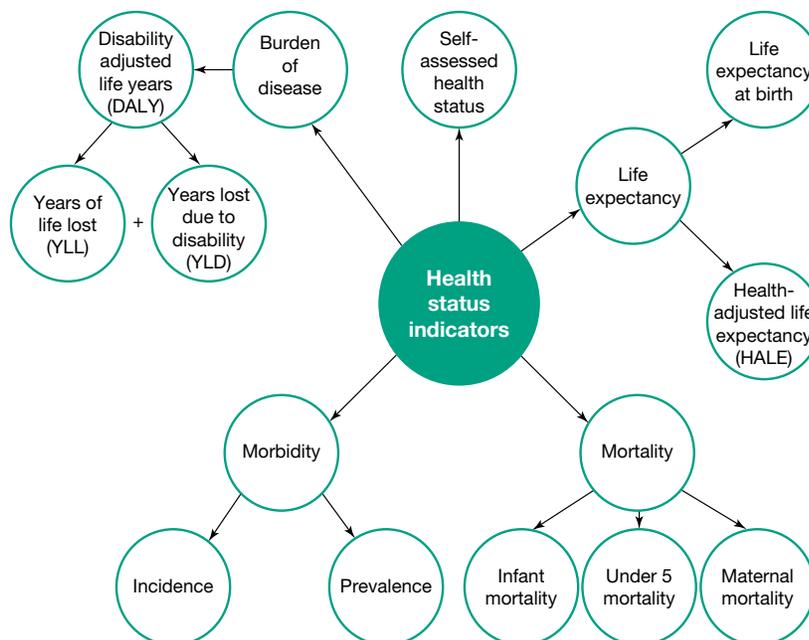
For individuals, health status is usually measured by tests conducted by a health professional, including blood, heart rate, blood pressure, eye and urine tests. For populations and whole countries, health status is generally measured using **health indicators**, which are shown in **FIGURE 2.2**.

FIGURE 2.1 Health statistics are based on large groups of people and therefore do not give information about the health status of individuals.



int-8485

FIGURE 2.2 Health status indicators



Health status 'An individual's or a population's overall health, taking into account various aspects such as life expectancy, amount of disability and levels of disease risk factors.' (AIHW, 2008)

Health indicators standard statistics that are used to measure and compare health status (e.g. life expectancy, mortality rates, morbidity rates)

EXAM TIP

When discussing health and wellbeing, one or more of the dimensions should be the focus. When discussing health status, the health status indicators should be the focus. For example, if discussing how education can influence health and wellbeing and health status, the respective answers could be:

Health and wellbeing — educated individuals are more likely to understand the benefits of being socially connected and may therefore invest time in socialising which can enhance the quality of relationships and *promote social health and wellbeing* [shows link to health and wellbeing].

Health status — education can mean that people have a greater understanding of healthy eating. This can promote healthy food intake, which can promote healthy body weight and reduce *the prevalence* of cardiovascular disease. In turn, this can decrease rate of premature *mortality* from causes such as heart attack and increase *life expectancy* [shows links to health status].

The various statistics give specific information and, when used together, can give accurate information about overall health status. It is useful to look at a range of statistics as quite often one set of statistics will provide only limited information about health status. Examining various health indicators allows governments and other groups to identify **trends** in health status and, if necessary, assist individuals, groups or populations in achieving optimal health and wellbeing.

In this topic, these health indicators and data relating to each will be explored. Although some data exists relating to social, emotional, mental and spiritual health and wellbeing, data relating to physical ill health and wellbeing is generally the easiest to measure and therefore forms the basis of a majority of the health status data available. Where possible, data relating to the other dimensions will also be explored.

It is also beneficial to examine statistics relating to different population groups within a country. Statistics are based on averages and do not always accurately reflect the challenges to health and wellbeing faced by different groups. The Aboriginal and Torres Strait Islander population in Australia is an example of this. Their health status is below the rest of the population, but this would not be apparent if only whole population statistics were explored in isolation. Statistics relating to population groups are examined in topic 4.

Resources

 **Teacher-led video** Measurements of health status (tlvd-0260)

2.2.1 Self-assessed health status

Self-assessed health status is a commonly used indicator of health status that reflects a person's perception of his or her own health and wellbeing at a given point in time. Self-assessed health status data is often collected from population surveys and provides an indication of the overall level being experienced in relation to physical, social, emotional, mental and spiritual health and wellbeing.

Survey participants are asked to classify their health status according to one of five levels:

- excellent
- very good
- good
- fair
- poor.

While self-assessed health status is a useful measure of a person's current health status and provides a broad picture of a population's overall health and wellbeing, it is subjective. Health status that one person classifies as 'excellent', may be classified

Trend a general change or movement in a particular direction. For example, trends indicate a significant increase in obesity rates over the past 20 years.

Self-assessed health status

'An individual's own opinion about how they feel about their health, their state of mind and their life in general.' (AIHW, 2018)
It is commonly sourced from population surveys.

as ‘very good’ by another person. In 2017–18, over half (56.4 per cent) of all Australians aged 15 years and over considered themselves to have excellent or very good health and wellbeing, while 14.7 per cent rated their health and wellbeing as fair or poor (ABS, 2018).

As shown in **FIGURE 2.3**, the proportion of those assessing their health and wellbeing as excellent or very good decreases with age.

A range of factors can influence how an individual assesses their health status, including presence or absence of disease, disability, illness, energy levels, access to healthcare, social connections, mental state and thought patterns, sense of belonging within the community, and emotional health and wellbeing, including levels of resilience.

2.2.2 Life expectancy and health-adjusted life expectancy

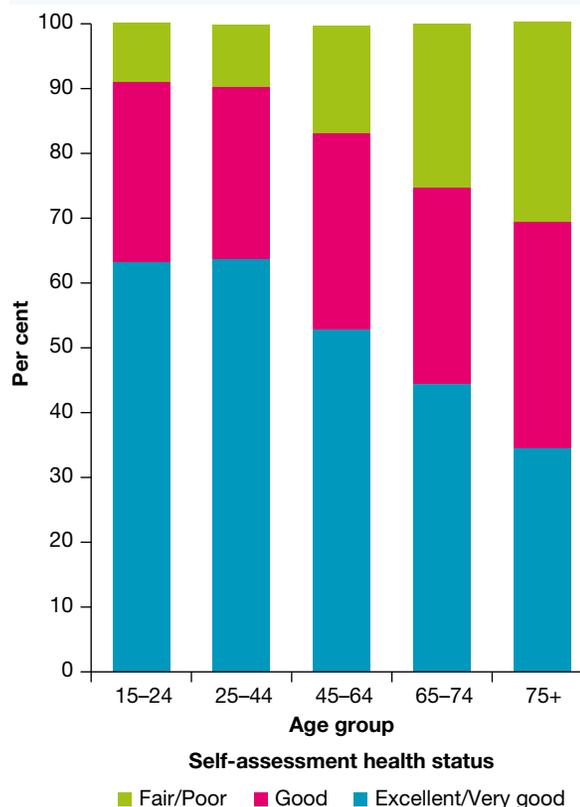
Life expectancy is defined as ‘the number of years of life, on average, remaining to an individual at a particular age if death rates do not change. The most commonly used measure is life expectancy at birth’ (AIHW, 2018). Although life expectancy figures most commonly relate to a baby born at the present time, they can relate to a person of a different age. If life expectancy data are provided for people of different ages, they will be specified in the data.

A male born in Australia in 2019 can expect to live (on average) to 80.9 years, whereas a male aged 60 in 2019 can expect to live to 84.1 years. For females, life expectancy at birth in 2019 was 85.0 years, while at the same time was 87.1 years for a female aged 60. Both males and females in Australia compare well with the global average for life expectancy, which was 72.5 years for a baby born in 2019.

As life expectancy is based on the average age at death, life expectancy increases as a person gets older (see **TABLE 2.1**). If a person survives the periods of birth, infancy, childhood and youth, their chance of reaching older age increases. Some people will not survive through their infancy, childhood, youth and adulthood stages, which brings the average down for those at birth.

Life expectancy has increased by more than 30 years over the last century as indicated in **FIGURE 2.5**. Life expectancy continues to increase, but due to trends such as increasing rates of obesity, some people question the capacity of Australia to continue making improvements in life expectancy.

FIGURE 2.3 Self-assessed health status, by age, 2017–18



Source: <https://www.aihw.gov.au/reports/australias-health/australias-health-2018/contents/indicators-of-australias-health/self-assessed-health-status>

Life expectancy the number of years of life, on average, remaining to an individual at a particular age if death rates do not change. The most commonly used measure is life expectancy at birth (AIHW, 2018).

FIGURE 2.4 Life expectancy is increasing in Australia.

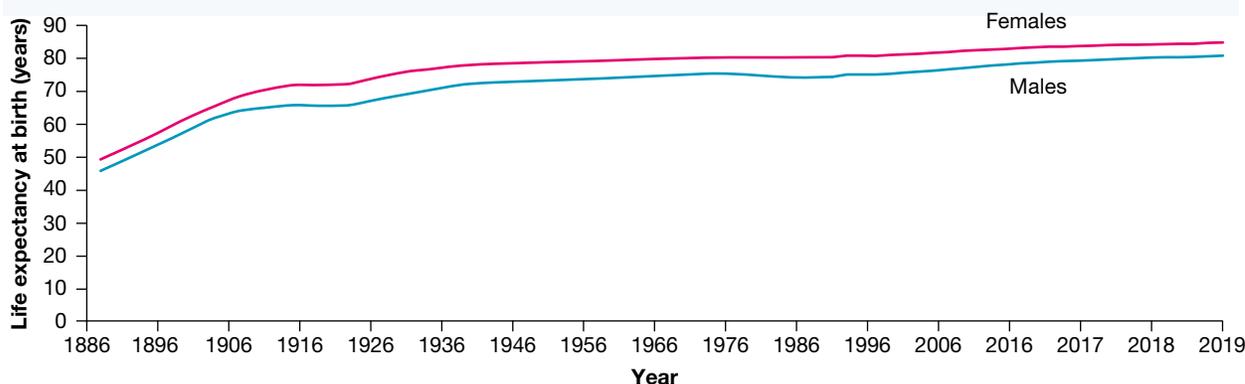


TABLE 2.1 Life expectancy for males and females of selected ages in Australia, 2019

Age	Males	Females
0 (birth)	80.9	85.0
15	81.3	85.4
30	81.8	85.6
45	82.5	86.1
60	84.1	87.1
75	87.4	89.4
90	94.4	95.1

Source: ABS, *Life tables, States, Territories and Australia, 2017–19*.

FIGURE 2.5 Life expectancy of Australians, 1890–2019



Source: AIHW, *Australia's Health 2018* and ABS, *Life tables*, various years.

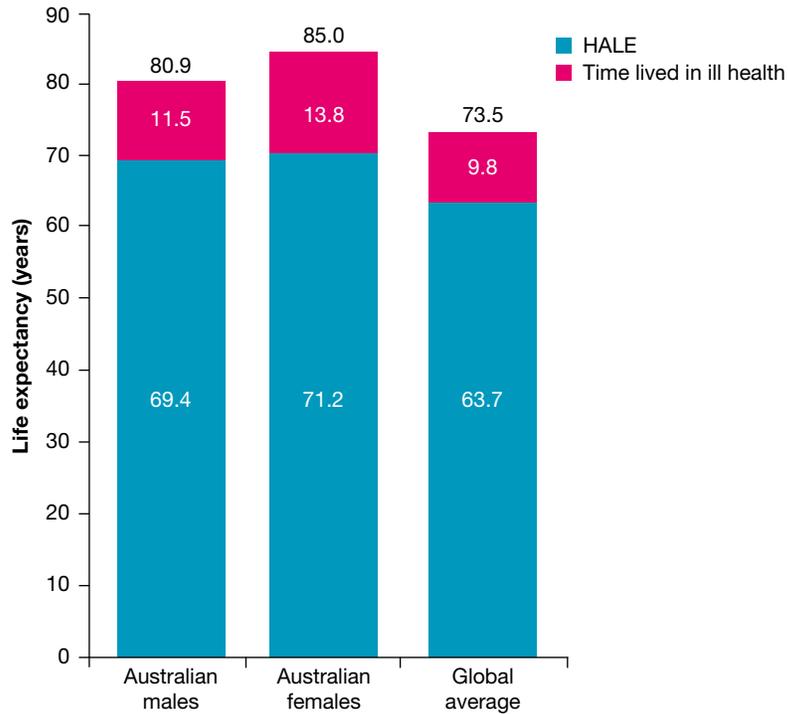
Life expectancy is especially useful for comparing different countries and population groups, which can assist governments and non-government organisations in identifying areas for potential improvement. Unlike mortality and morbidity figures, however, life expectancy does not provide information on the health issues facing a country or population groups, such as the leading causes of death or emerging diseases.

Although it is an important health status indicator, life expectancy doesn't give any indication of the quality of life being experienced; it is based purely on the quantity, or length, of life. A measurement that considers life expectancy data and the impact of ill health in a population is **health-adjusted life expectancy**, or **HALE**. Health-adjusted life expectancy relates to the average length of time an individual at a specific age can expect to live in full health; that is, time lived without the health consequences of disease or injury. So health-adjusted life expectancy refers to the number of years a person can expect to live without reduced functioning (including decreased mobility and the decline in the functioning of body systems) due to ill health, and is therefore an indicator of both quantity and quality of life.

The data in **FIGURE 2.6** indicates that the average male born in 2019 can expect to live to 80.9 years of age and spend 11.5 years of those years with ill health, giving a HALE of 69.4. A female born in 2019 can expect to live to 85.0 years of age and spend 13.8 of those years with ill health, meaning a HALE of 71.2 years. Although time with lived ill health is more likely to occur as people get older, it can happen at any age and HALE takes into account the average amount of time a person experiences ill health throughout their whole life.

Health-adjusted life expectancy (HALE) the average length of time an individual at a specific age can expect to live in full health; that is, time lived without the health consequences of disease or injury (AIHW, 2018)

FIGURE 2.6 Life expectancy at birth in full health (HALE) and ill health, 2019



Source: IHME, GBD Compare, 2020.

2.2 Activity

Access the **Joy of statistics** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

 **Digital document** Joy of statistics worksheet (doc-32189)

 **Weblink** Joy of statistics

2.2 Exercises

learn **on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

2.2 Quick quiz

on

2.2 Exercise

2.2 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 5

■ LEVEL 2

4, 6, 7, 9

■ LEVEL 3

8, 10, 11, 12

Test your knowledge

- What is meant by 'health status'?
 - How is health status measured?
- Explain what is meant by 'self-assessed health status'.
- Explain the difference between life expectancy and health-adjusted life expectancy as health status indicators.

4. a. According to **FIGURE 2.6**, what was the life expectancy and health-adjusted life expectancy for males and females in Australia respectively?
 - b. What do these numbers mean in relation to quantity and quality of life for males compared to females?
5. a. What is a trend?
 - b. Identify two trends evident in **FIGURE 2.5**.

Apply your knowledge

6. a. Which dimension of health and wellbeing is generally the focus of health statistics?
 - b. Why would this be the case?
 - c. Identify a health status indicator that may reflect multiple dimensions of health and wellbeing and justify your choice.
7. Outline the difference between health and wellbeing and health status.
8. Brainstorm reasons why self-assessed health status may not be completely accurate in measuring the health status of a population.
9. a. Outline the relationship between age and the proportion of those assessing their health and wellbeing as excellent or very good according to **FIGURE 2.3**.
 - b. Suggest reasons that may account for the relationship outlined in part a.
10. 'Life expectancy will continue to rise in the future'. To what extent do you agree with this statement?
11. Suggest reasons that might account for the lower life expectancy experienced by men compared with that of women.
12. Explain why life expectancy is higher for those aged 60 compared to those at birth.

2.2 Quick quiz



2.2 Exercise

2.2 Exam questions

Question 1 (4 marks)

Source: VCE 2010, *Health and Human Development Exam*, Q.2; © VCAA

Briefly **outline** two indicators that are used to measure the health status of populations.

Question 2 (1 mark)

Source: VCE 2009, *Health and Human Development Exam*, Q.3.a; © VCAA

Define life expectancy.

Question 3 (4 marks)

Source: VCE 2009, *Health and Human Development Exam*, Q.3.b; © VCAA

Australian life expectancy at different ages: 1901–10 and 2003–05 for males

	1901–1910	2003–2005
From birth	55.2 years	78.5 years
From 30 years	66.5 years	79.7 years

Source: Adapted from Australian Institute of Health and Welfare, *Australia's Health 2008* p. 27.

Explain two reasons why life expectancy has increased since 1901.

Question 4 (2 marks)

Source: VCE 2009, *Health and Human Development Exam*, Q.3.c; © VCAA

Australian life expectancy at different ages: 1901–10 and 2003–05 for males

	1901–1910	2003–2005
From birth	55.2 years	78.5 years
From 30 years	66.5 years	79.7 years

Source: Adapted from Australian Institute of Health and Welfare, *Australia's Health 2008* p. 27.

Outline why life expectancy from 30 years of age is higher than life expectancy from birth.

More exam questions are available in your learnON title.

2.3 Mortality

KEY CONCEPT Exploring mortality and mortality rates of Australians

Mortality refers to the number of deaths in a population in a given period (usually 12 months). The **mortality rate** is therefore the number of deaths, usually expressed per 1000 or 100 000 people in a 12-month period, from a specific cause or from all causes combined. For example, if the mortality rate for cancer in a population of one million is 50 per 100 000, there would be approximately 500 cancer deaths during that year. Expressing data ‘per 1000’ or ‘per 100 000’ people allows for comparisons to be made between population groups and between countries with different population sizes.

Mortality the number of deaths in a population in a given period (AIHW, 2018)

Mortality rate (sometimes referred to as ‘death rate’) the measure of the proportion of a population who die in a one-year period (usually per 100 000)

EXAM TIP

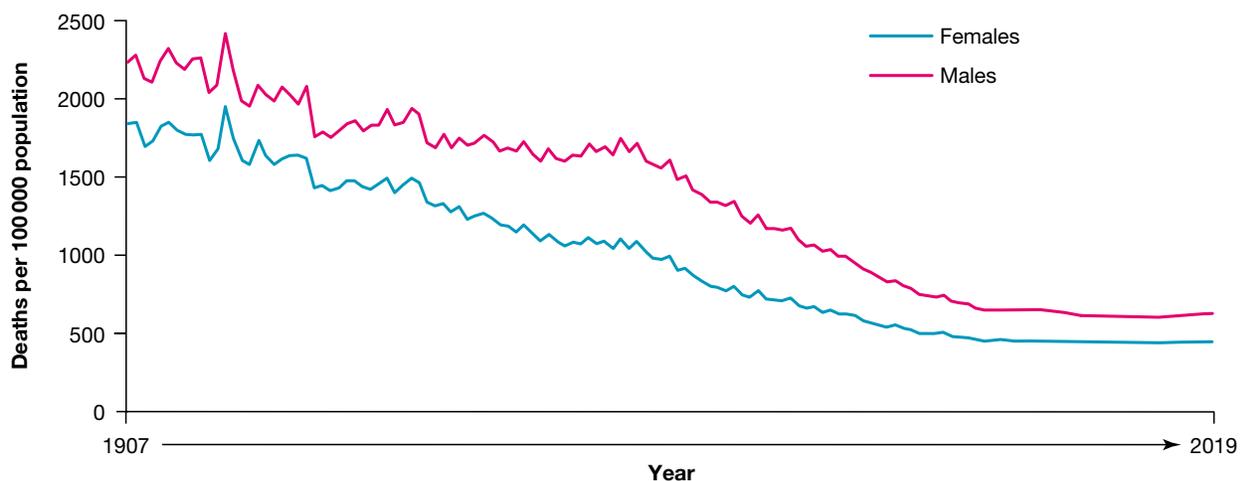
Ensure the correct unit of measurement is used when analysing health status data. For example, mortality data expressed per 1000 people produces very different figures compared to when it is expressed per 100 000 people. Including the relevant unit is important in ensuring that the discussion is factually correct.

Over time, mortality data allows trends in deaths to be identified. These trends can guide governments and other organisations in developing and funding strategies that attempt to reduce mortality rates from the leading causes of death (or those that have an increasing mortality rate).

In 2019, the mortality rate for males was 626 per 100 000 and for females was 442 per 100 000. This means that for every 100 000 males in Australia in 2019, 626 died. For females, 442 in every 100 000 died, meaning that males were 1.4 times more likely to die than females.

Despite an increase in the total number of deaths, there has been a continuous fall in mortality rates per 100 000 people in Australia. From 1907 to 2019, the age-standardised death rate for males and females fell by 73 per cent and 77 per cent respectively (see **FIGURE 2.7**).

FIGURE 2.7 Age-standardised death rates by sex, Australia, 1907–2019



Source: AIHW, *Australia's health 2016*, p. 10, and AIHW GRIM Books (accessed January 2021).

WHAT ARE AGE-STANDARDISED RATES?

Age-standardised rates allow us to compare populations that have a different spread of ages. For example, Australia's population is ageing and as a result, we would expect more deaths than a country with a younger population, as older people are more likely to die. Age standardising manipulates data to make the age groups of different populations relative so they can be compared more accurately.

Analysing the overall trend in the mortality rate is important, but it is also useful to identify the leading causes of death and trends that have occurred in relation to the causes of death over time. These trends give important feedback on the success of current interventions (policies, strategies and campaigns aimed at reducing the impact of health conditions) and allow predictions to be made about the future so relevant interventions can be put into place to improve health status.

The leading causes of death in Australia have changed markedly over the past century. Developments have been made with regards to the economy, technology and education. As a result, many diseases that were common causes of death 100 years ago, such as influenza and tuberculosis, cause relatively few deaths these days (see **TABLE 2.2**). This has helped to prolong life and give most Australians the opportunity to achieve optimal health and wellbeing.

TABLE 2.2 Five leading causes of death in 1907 and their contribution to mortality in 2019

	1907		2019	
	Per cent deaths	Rank ^(a)	Per cent deaths	Rank ^(a)
Cardiovascular diseases	20.0	1	25.5	2
Respiratory diseases	14.3	2	9.6	3
Infectious diseases	12.6	3	1.5	5
Cancer	7.8	4	29.5	1
Injury and poisoning	4.9	5	7.0	4
Other	40.3		26.9	

^(a) In making these rankings, only the broad causes that were the top five in 1907 are considered.

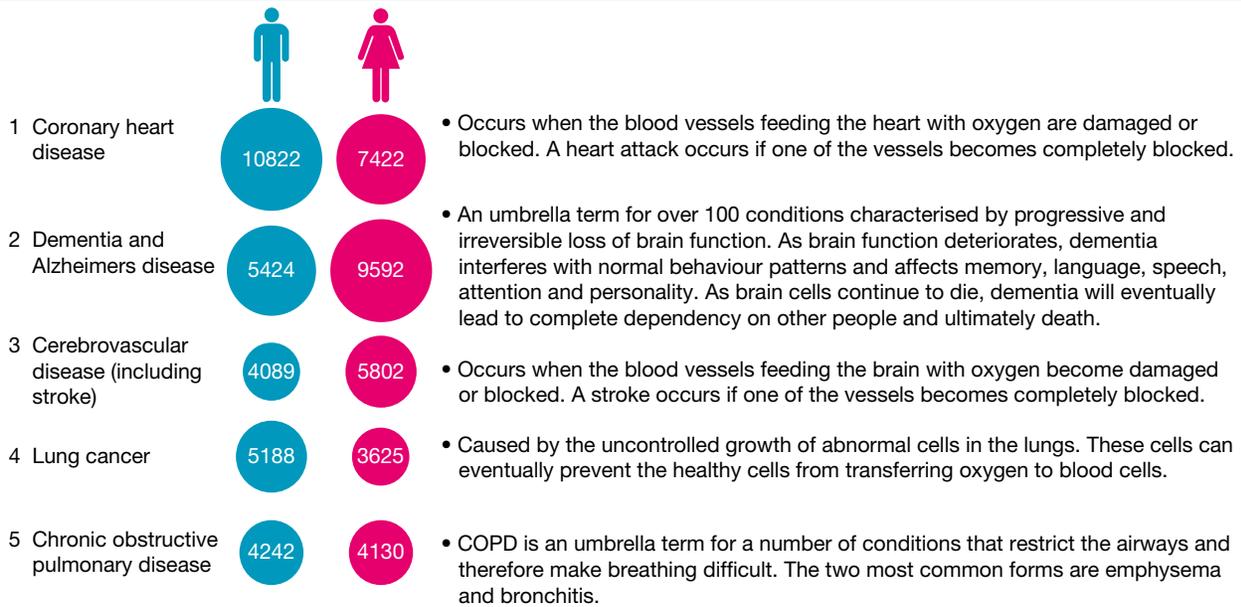
Source: Adapted from AIHW, GRIM books.

As people live longer, they are more likely to die from lifestyle-related conditions. Diseases such as cardiovascular disease, cancers, dementia and respiratory diseases (including chronic obstructive pulmonary diseases) have emerged as the leading causes of death in Australia. Increasing rates of obesity are a significant contributor to these trends. The specific leading causes of death are shown in **FIGURE 2.9**. When analysing these figures, it is important to remember that they are based on all deaths. As older people account for the majority of deaths in Australia, the causes of their deaths are the ones most likely to appear in these figures.

FIGURE 2.8 Although it was not a significant cause of ill health 100 years ago, obesity is now a major contributor to ill health.



FIGURE 2.9 Leading causes of death for males and females, 2019



Source: Adapted from ABS, 3303.0 *Causes of death, Australia, 2019*.

Other key trends in mortality figures reported by the Australian Institute of Health and Welfare (AIHW) are listed here.

- There has been a 95 per cent drop in deaths from infectious diseases (from around 140 per 100 000 in the early 1920s to 7.6 per 100 000 in 2018).
- Mortality rates from colorectal cancer have fallen by about 40 per cent since the 1980s.
- Cervical cancer deaths have fallen by about 75 per cent since the 1960s.
- Mortality rates due to dementia have increased by around 75 per cent since 2000.
- Male mortality rates from lung cancer are still higher than for females, but the mortality rate from lung cancer has fallen steadily for males since the 1980s. The rates for females have risen steadily since the 1960s.
- Mortality rates have fallen for cancer, cardiovascular disease, strokes, injury and asthma.
- Heart attack rates have fallen and survival rates have improved.
- The rate of type 2 diabetes is rising, with prevalence doubling in the past 20 years.
- Deaths from motor vehicle accidents have fallen by almost 80 per cent since the 1970s.

FIGURE 2.10 Safety features, such as airbags, have contributed to the decline in mortality rates from motor vehicle accidents over the past few decades.



In addition to data covering the whole population, mortality data can also be collected for particular age or population groups. Examples include:

- **infant mortality rate** — measures the rate of deaths of infants before their first birthday, usually expressed per 1000 live births
- **under-five mortality rate (U5MR)** — measures the number of children that die before their fifth birthday, usually expressed per 1000 live births
- **maternal mortality ratio** — the number of mothers who die as a result of pregnancy, childbirth or associated treatment per 100 000 live births.

2.3.1 Infant mortality rates

The mortality rate for infants and children are key indicators of the general health and wellbeing of a population and the social and economic resources available. Infants and children rely on others to meet their needs for food, water, shelter and healthcare, and they often have underdeveloped immune and other body systems, which make them particularly susceptible to premature mortality. Mortality rates for infants and children therefore reflect the ability of a society to provide the resources required to sustain human life.

Infant and under-five deaths are often preventable, so exploring the causes and rates of these deaths can help to improve the health status of children.

Infant mortality rates are low in Australia compared to other countries. Infant mortality rates have decreased over time for both males and females, and the difference between males and females has also narrowed (see **FIGURE 2.11**).

Infant mortality rate the rate of deaths of infants before their first birthday, usually expressed per 1000 live births

Under-five mortality rate (U5MR) the number of deaths of children under five years of age per 1000 live births (WHO, 2008)

Maternal mortality ratio the number of mothers who die as a result of pregnancy, childbirth or associated treatment per 100 000 women who give birth (or per 100 000 live births)

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FIGURE 2.11 Infant mortality rates in Australia and the global average over time



Source: Adapted from *AIHW Children's headline indicators*, WHO GHO and <https://unstats.un.org/sdgs/indicators/database/>

Much of the decrease in infant mortality has been due to reductions in deaths from sudden infant death syndrome (SIDS). SIDS is the unexplained death of an apparently healthy infant. It is only diagnosed when other causes are ruled out. Although the exact causes of SIDS are unknown, there are a number of factors that increase the risk of SIDS for an infant. These include being male (70 per cent of SIDS deaths are usually males) and sleeping on the stomach.

FIGURE 2.12 Infant mortality is decreasing in part due to reductions in deaths from sudden infant death syndrome (SIDS).



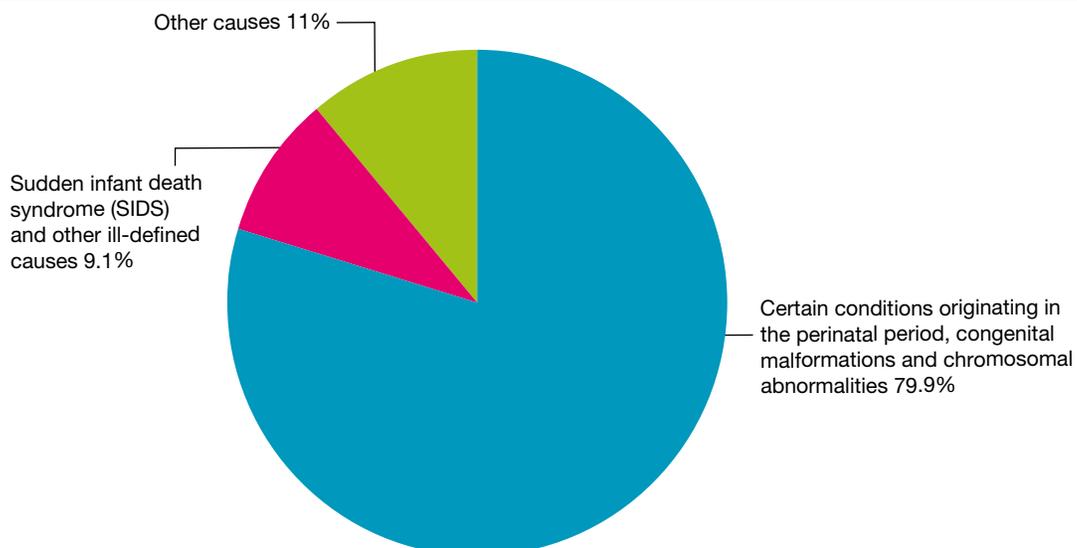
Most cases of infant mortality arise from problems associated with the birth or pregnancy itself. As a result of this, a majority of infant deaths occur in the period directly after birth. As infants and children get older, the risk of death decreases.

Specific causes of death in the first year of life are outlined in **FIGURE 2.13**. Conditions originating in the perinatal period, **congenital malformations** and chromosomal abnormalities account for around 75 per cent of all infant deaths. Conditions originating in the perinatal period relate to conditions that cause death in the first 28 days of life. These include complications of the placenta or umbilical cord, infections, birth injury, **asphyxia** and problems relating to premature births. Congenital malformations, sometimes referred to as ‘birth defects’, often result from missing or ill-formed body structures. They may have a genetic, infectious or environmental origin, although in most cases it is difficult to identify their cause. Chromosomal abnormalities during the creation of sperm and ova can cause a range of conditions in the developing baby. Most often, these conditions arise as a result of too many or too few chromosomes. Some chromosomal abnormalities lead to physical defects that result in death.

Congenital malformations refers to physical defects developing either in the uterus or dating from birth

Asphyxia interrupted breathing leading to low levels of oxygen in the body, unconsciousness and often death

FIGURE 2.13 Causes of infant mortality in Australia, 2016–18



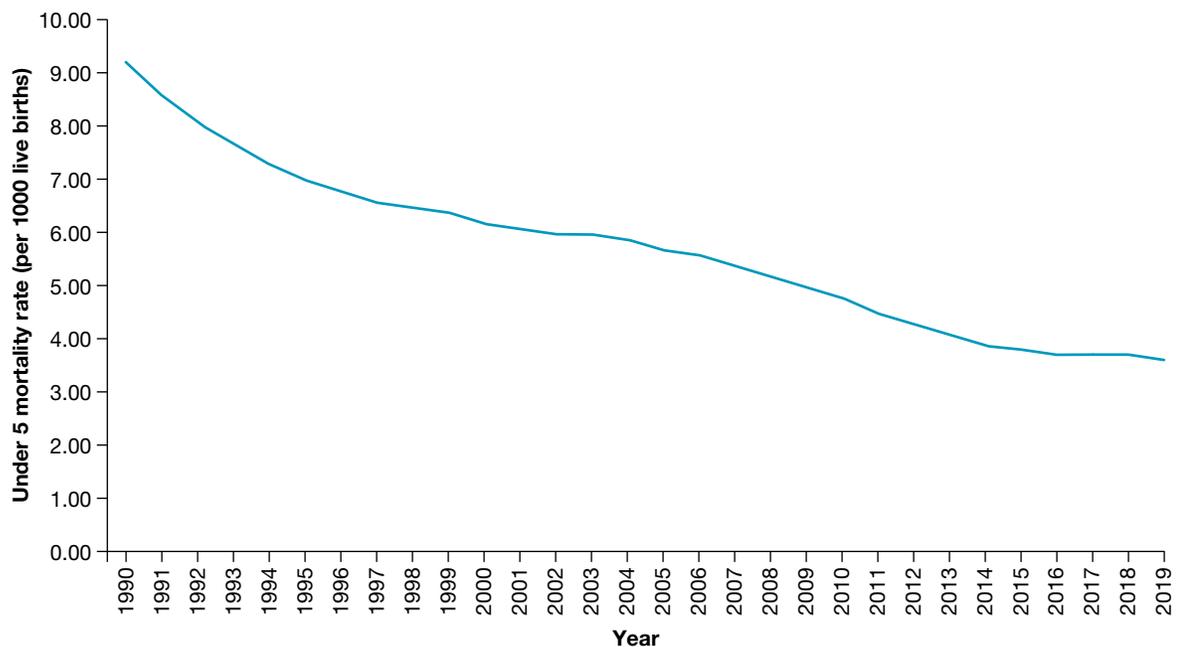
Source: Adapted from ABS, Deaths web report, 2020.

2.3.2 Under-five mortality rate

Like the infant mortality rate, the under-five mortality rate has decreased over time in Australia (see **FIGURE 2.14**) and is low compared to most other countries. The reduction in infant mortality is partially responsible for the decrease in under-five mortality rate in Australia. Other contributing factors include greater awareness of risk factors for illness and injury, national childhood vaccination programs, and improved health services and technology.

Although the overall rate of under-five mortality has decreased, child mortality rates for Aboriginal and Torres Strait Islander peoples, those living outside of Australia’s major cities, and low socioeconomic groups remain higher than for the rest of the population.

FIGURE 2.14 Under-five mortality rate in Australia over time

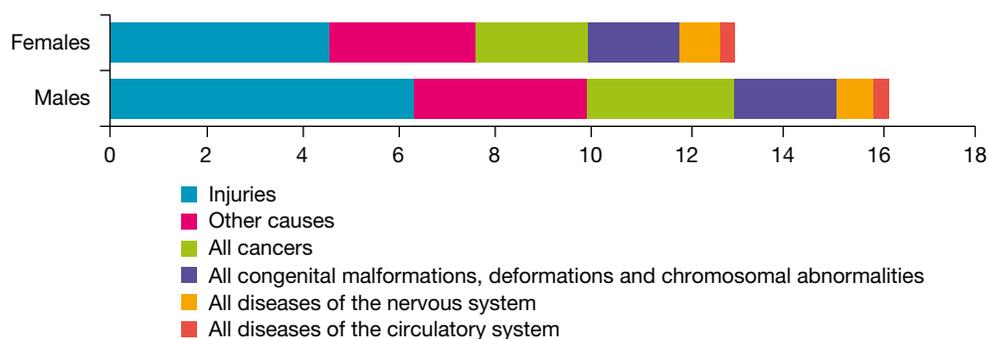


Source: Adapted from WHO GHO.

The significant proportion of causes of mortality for those under five are termed ‘injuries’ and are accidental in nature (see **FIGURE 2.15**). Injuries include falls, drowning, suffocation, poisoning, transport accidents and burns.

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FIGURE 2.15 Leading causes of death for those aged 1–4 in Australia, 2019



Source: Adapted from: <https://vizhub.healthdata.org/gbd-compare/> (accessed January 2021).

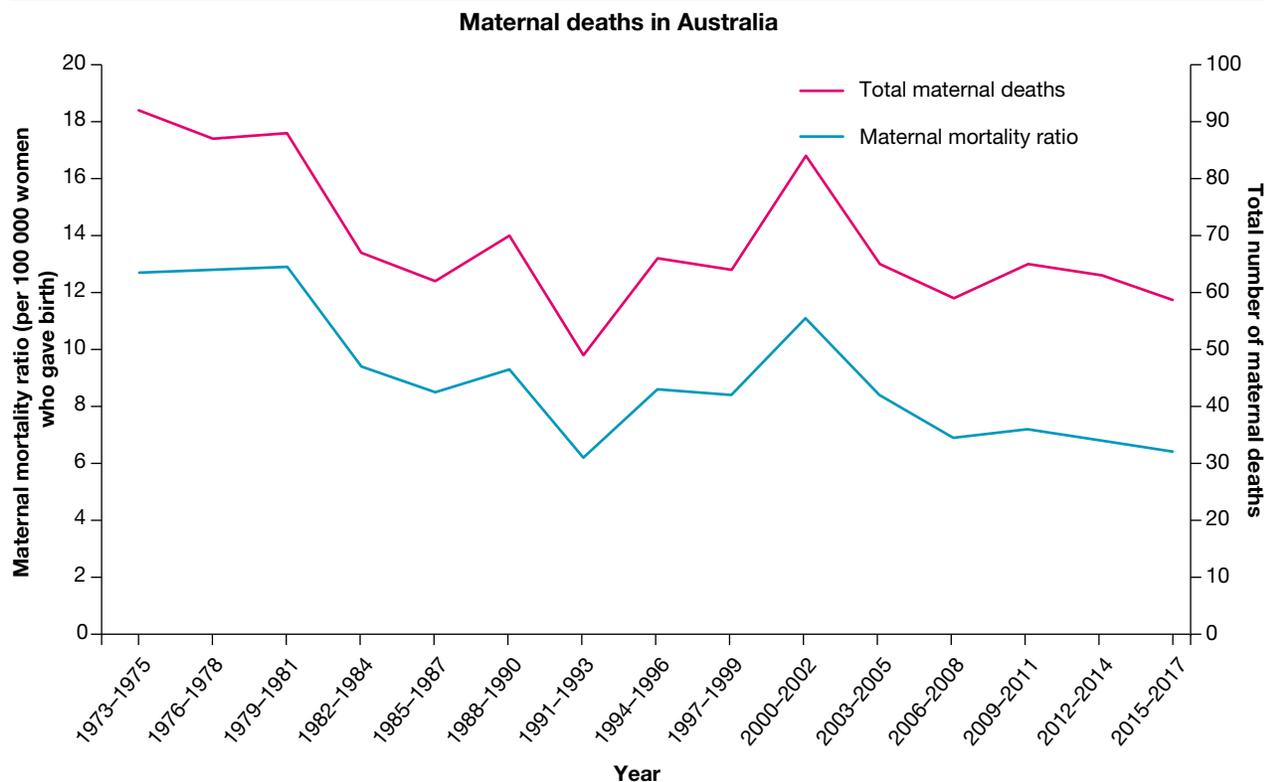
2.3.3 Maternal mortality rate

Maternal mortality relates to the deaths of mothers as a result of pregnancy or childbirth, up to six weeks after delivery and the maternal mortality ratio (or rate) relates to the number of mothers who die as a result of pregnancy, childbirth or associated treatment, usually measured per 100 000 women who give birth or per 100 000 live births.

Analysing maternal mortality rates allows trends to be identified so interventions can be put in place to reduce the risk of death as a result of pregnancy or childbirth.

Pregnant women in Australia experience low maternal mortality rates compared to most other countries, although there is some variation among population groups within Australia, with Aboriginal and Torres Strait Islander mothers experiencing a maternal mortality ratio three times higher than the rest of the population. Although maternal deaths in Australia are relatively rare, both the number and rate of maternal mortality fluctuate over time (see **FIGURE 2.16**). A range of factors contribute to these changes including technological developments, improvements in the identification and reporting of maternal deaths, increasing rates of obesity (contributing to higher rates of cardiovascular disease among pregnant women) and increases in the average age of women giving birth.

FIGURE 2.16 Number and rate of maternal deaths in Australia over time



Source: Adapted from AIHW 2020, *Maternal deaths in Australia 2015-17*.

Leading causes of maternal mortality in Australia include:

- cardiovascular disease — the increased demands on the heart and blood vessels that occurs during pregnancy can contribute to cardiovascular diseases that were not present prior to pregnancy. Cardiovascular diseases are the most common cause of maternal deaths in Australia.
- **obstetric haemorrhage** — excessive bleeding during pregnancy, labour or after birth can lead to maternal death.

Maternal mortality death of a mother during pregnancy, childbirth or within six weeks of delivery

Obstetric haemorrhage heavy bleeding occurring as a result of pregnancy or childbirth

2.3 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

2.3 Quick quiz 	2.3 Exercise	2.3 Exam questions
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Select your pathway

<p>■ LEVEL 1 1, 2, 3, 5, 7</p>	<p>■ LEVEL 2 4, 6, 8, 9, 11, 12, 13</p>	<p>■ LEVEL 3 6, 10, 14</p>
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Test your knowledge

1. Define the following:
 - a. mortality
 - b. infant mortality
 - c. infant mortality rate
 - d. maternal mortality
 - e. maternal mortality ratio
 - f. mortality rate
 - g. under-five mortality rate.
2. List the top three causes of death for men and women.
3. **a.** How have the causes of death changed over the past century in Australia?
b. Brainstorm factors that may have contributed the change outlined in part **a.**
4. Explain why the mortality rates for infants and children are key indicators of the general health and wellbeing of the population.
5. Outline the difference in causes of mortality for infants compared to 1–4 year olds.

Apply your knowledge

6. Discuss the advantages of using mortality data in addition to life expectancy data when making judgements about the health status of a population.
7. Explain what a mortality rate of 150 per 100 000 people means for a population.
8. If a population has 1 000 000 people and the mortality rate is 500 per 100 000 people, how many people on average would die each year?
9. Outline two trends as shown in **FIGURE 2.7**.
10. Brainstorm factors that may have contributed to the trends in mortality identified at the end of subtopic 2.3.
11. Outline the change in infant mortality rates for males and females that occurred between 2006 and 2019 in Australia according to **FIGURE 2.11**.
12. Outline the change in the under-five mortality rate over time according to **FIGURE 2.14**.
13. **a.** Approximately how many maternal deaths were there in 2015–17 according to **FIGURE 2.16**?
b. Approximately what was the maternal mortality ratio in 2015–17 according to **FIGURE 2.16**?
14. Dementia is a condition that has seen significant increases over time in Australia. Including references to changes in life expectancy and mortality rates, explain possible reasons for this change.

Question 1 (1 mark)

Briefly **explain** the difference between ‘mortality’ and ‘the mortality rate’.

Question 2 (1 mark)

Identify the indicator that focusses on the mortality of children under the age of 1.

Question 3 (4 marks)

Identify and briefly **describe** two causes of maternal mortality in Australia.

Question 4 (4 marks)

Identify and briefly **describe** two causes of infant mortality in Australia.

Question 5 (2 marks)

Outline two reasons why identifying trends in mortality date over time is important.

More exam questions are available in your learnON title.

2.4 Morbidity

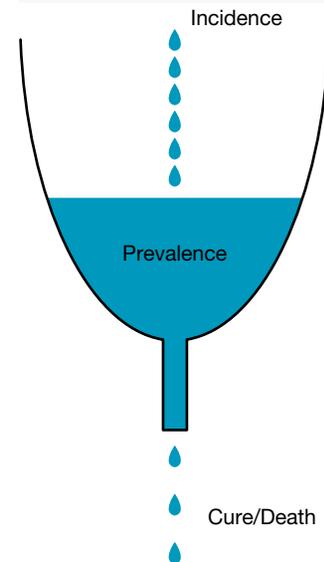
KEY CONCEPT Exploring morbidity in Australia

Mortality rates were examined in subtopic 2.3. Although these are important statistics, they tell only part of the story. Many people experience conditions that impact significantly on health and wellbeing but do not lead to death. Many causes of mortality also contribute to significant illness prior to causing death. Looking at levels of ill health and disability is therefore important in making judgements about overall health status.

Morbidity refers to ‘ill health in an individual and levels of ill health within a population (often expressed through incidence, prevalence)’ (AIHW 2018). Therefore, the morbidity rate is a measure of how many people suffer from a particular condition during a given period of time. As stated in the AIHW definition, morbidity rates can look at **incidence** (the number or rate of new cases of a disease during a specified time, usually a 12-month period) or **prevalence** (the total number or proportion of cases of a particular disease or condition present in a population at a given time). Incidence and prevalence provide two ways of looking at the impact of diseases. Unlike most infectious diseases, many chronic conditions, such as cardiovascular disease and cancer, are long lasting and may have effects that may never be cured completely. As a result, they may require long-term care. People generally only receive a diagnosis for these conditions once; this represents their ‘incident year’. As these conditions can be long lasting, prevalence data provides information about the total number of people with a particular condition at a given time, not just those who have been newly diagnosed. Prevalence data provides valuable information relating to the healthcare required to treat all people experiencing particular conditions.

As mortality rates have fallen, morbidity rates for many causes have increased. As people are living longer, there is more time for a range of factors to have a negative impact on health and wellbeing. There have also been increases in conditions such as obesity that result in an increased rate of associated conditions, such as type 2 diabetes, cardiovascular disease and some cancers. Even though the rates of some of these conditions have increased, there are other, non-life-threatening conditions that affect many more people, such as arthritis and osteoporosis.

FIGURE 2.17 Morbidity includes both incidence and prevalence rates.



Morbidity ill health in an individual and levels of ill health within a population (often expressed through incidence and prevalence) (AIHW, 2018)

Incidence refers to the number (or rate) of new cases of a disease/condition in a population during a given period

Prevalence the total number or proportion of cases of a particular disease or condition present in a population at a given time (AIHW, 2008)

FIGURE 2.18 As well as disease, morbidity includes injuries and disabilities.



According to the Australian Institute of Health and Welfare estimates, around 75 per cent of Australians experience a long-term health condition. The proportion of people experiencing one or more long-term conditions increases with age. The most commonly reported conditions are outlined in **TABLE 2.3**. Many of the causes shown do not contribute to death, but they may reduce the quality of life over a long period.

TABLE 2.3 The most commonly reported long-term conditions, 2017–18

Condition	Males		Females	
	Per cent	Rank	Per cent	Rank
Long-sighted	27.4	1	32	1
Short-sighted	22.5	2	29.7	2
Hay fever and allergic rhinitis	18.9	3	19.7	3
Back problems	16.5	4	16.3	4
Deafness	12.8	5	8	12
Anxiety-related disorders	10.6	8	15.7	5
Hypertension	10.5	6	10.7	10
Asthma	10.2	7	12.3	7
Depression and mood (affective) disorders	9.5	9	12	8
Allergies	9.4	10	15.1	6
Osteoarthritis	6.8	12	11.2	9

Source: Adapted from ABS, *National health survey 2017–18*.

Morbidity figures represent a snapshot of the whole population. Australians are living longer than ever, so some of these conditions are very common in the older population, but virtually non-existent in the younger population. As a result, it is also useful to examine the most reported long-term conditions for different age groups (see **TABLE 2.4**). This allows government and non-government organisations to develop appropriate strategies and allocate funds to address the most common conditions in each age group.

FIGURE 2.19 Vision problems are among the most common health conditions in Australia.



TABLE 2.4 Five most common conditions by age group, 2017–18

Age group	Condition	Per cent	Age group	Condition	Per cent
0–14	Mental and behavioural problems	11.1	45–54	Long-sightedness	53.2
	Asthma	10.1		Short-sightedness	34.2
	Hay fever	10.0		Mental and behavioural problems	23.8
	Food allergy	5.5		Hay fever and allergic rhinitis	22.5
	Short-sightedness	4.5		Back problems	23.2
15–24	Mental and behavioural problems	25.6	55–64	Long-sightedness	62.1
	Hay fever and allergic rhinitis	21.4		Short-sightedness	41.9
	Short-sightedness	19.4		Arthritis	34.0
	Long-sightedness	12.9		Cardiovascular disease	31.9
	Asthma	10.2		Back problems	28.0
25–34	Short-sightedness	25.9	65+	Long-sightedness	61.7
	Hay fever and allergic rhinitis	22.8		Arthritis	49.0
	Mental and behavioural problems	21.2		Short-sightedness	40.7
	Back problems	14.6		Endocrine diseases including diabetes	39.1
	Asthma	10.7			
35–44	Short-sightedness	25.6			
	Hay fever and allergic rhinitis	23.8			
	Back problems	20.9			
	Mental and behavioural problems	20.6			
	Long-sightedness	17.3			

Source: ABS, *National health survey 2017–18*.

2.4.1 Morbidity requiring care

Illnesses and disabilities vary in their severity and many people will require professional care in order to improve health and wellbeing. As a result, morbidity data from doctors and hospitals can be used to make judgements about health status.

GP visits

According to Department of Health data (2020), around 163 million visits to general practitioners (GPs) were made in 2019–20, which is around 6.5 visits per person each year. Females are more likely to visit doctors than males. This does not mean that they are more likely to be ill, but that they are more likely to visit a doctor when symptoms or concerns arise.

GP visits often involve a range of interventions such as prescribing medicines, ordering pathology such as urine and blood tests, administering vaccinations and discussing test results. The table shows prescriptions and check-ups were the leading reason for GP visits in 2016. However, data from the report *General Practice: Health of the Nation 2020* revealed the impact of the COVID-19 pandemic with psychological (64 per cent), preventative (56 per cent) and respiratory (45 per cent) causes becoming the leading three causes of visits to the GP in this year.

TABLE 2.5 Principle reason of GP visits, 2015–16

Principal reason	Percentage of visits	Principal reason	Percentage of visits
Prescription	8.8	Fever	1.4
Check-up	8.1	Depression	1.3
Test results	6.7	Abdominal pain	1.2
Cough	4.1	Upper respiratory tract infection	1.1
Immunisation/vaccination	3.3	Headache	1.1
Administrative procedure	2.5	Skin symptom/complaint	1.1
Back complaint	2.0	Sneezing/nasal congestion	1.0
Rash	1.8	Hypertension/high blood pressure	1.0
Throat symptom/complaint	1.8	Anxiety	1.0
Blood test	1.5	All other reasons	49.2

Source: Adapted from Britt, H, et al. 2015, 'General practice activity in Australia 2015–16', General practice series no. 40, Sydney University Press.

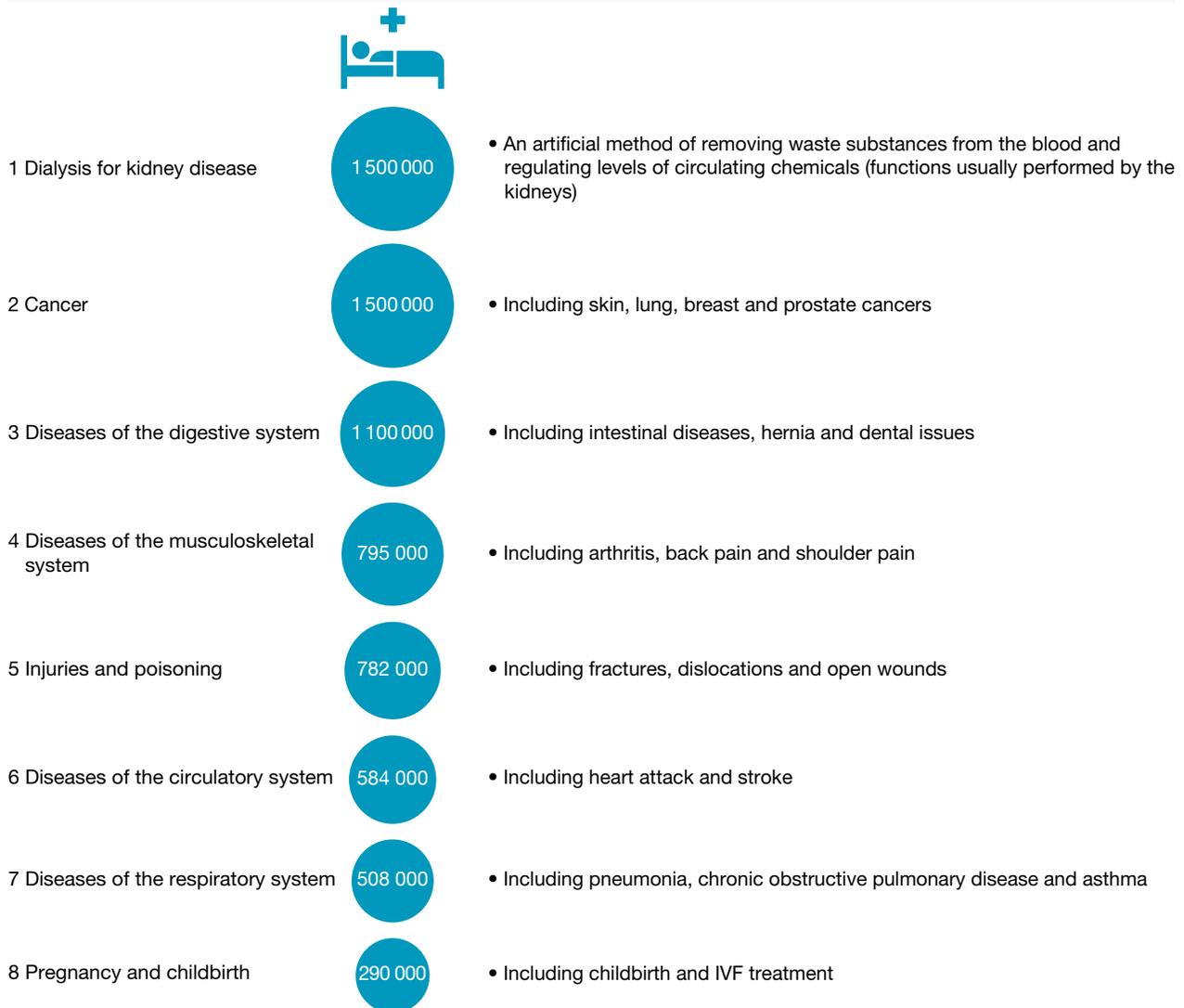
Hospitals

Hospital care encompasses care for chronic conditions, where the patient is admitted to receive treatment, and emergency care that involves unforeseen events that end up requiring medical care, such as car accidents, sporting accidents and premature births. In 2018–19 there were 11.5 million hospitalisations in Australia with around 60 per cent of these being in public hospitals and around 40 per cent in private hospitals.

FIGURE 2.20 shows the major causes of **hospital separations**. Hospital separations are episodes of hospital care that start with admission and end at transfer, discharge or death.

Hospital separation episodes of hospital care that start with admission and end at transfer, discharge or death

FIGURE 2.20 Major causes of hospital separations, Australia, 2017–18



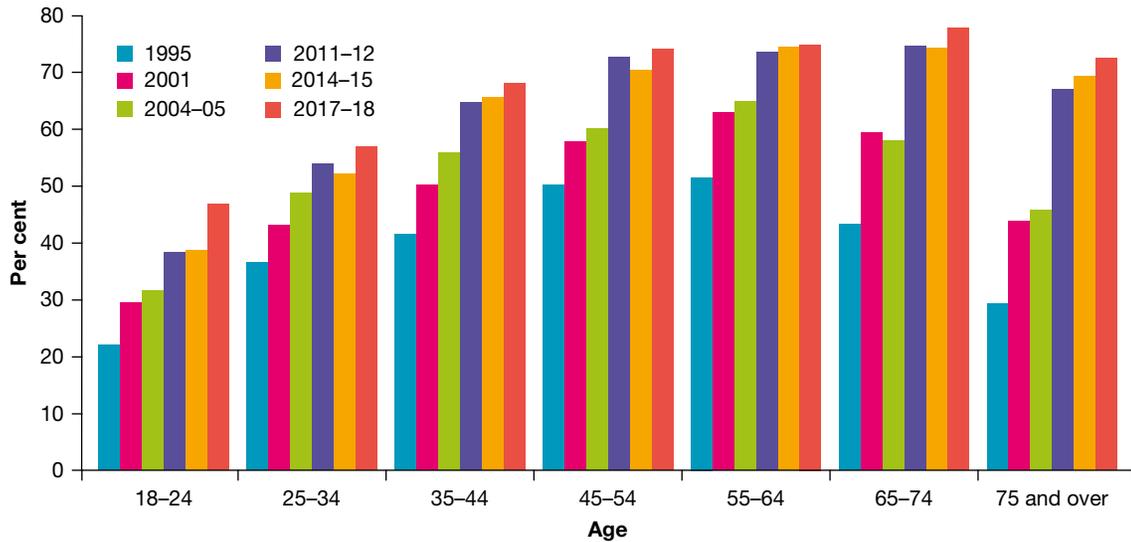
Source: Adapted from AIHW 2018, *Australia's hospitals 2017–18 at a glance*.

Trends in morbidity

A number of morbidity trends are emerging that are worth considering. The long-term effects of some of these trends will influence future mortality and morbidity rates, but this takes time. Some of the key trends identified by the Australian Institute of Health and Welfare include:

- a significant increase in the prevalence of overweight and obese people over the past 20–30 years (see **FIGURE 2.21**)
- increased rates of impaired glucose regulation (a precursor to type 2 diabetes) since 1980
- trebled rates of diabetes in the past two decades
- increased rates of kidney disease (attributed to the increased rates of diabetes).

FIGURE 2.21 Trends in overweight and obesity prevalence, 1995–2018



2.4 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

2.4 Quick quiz

on

2.4 Exercise

2.4 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 4, 5, 9

■ LEVEL 2

3, 6, 7, 8, 10, 13, 15

■ LEVEL 3

11, 12, 14, 16

Test your knowledge

1. Explain what is meant by 'morbidity'.
2. Explain the difference between incidence and prevalence.
3. Explain why morbidity rates have increased as mortality rates have decreased.
4. **a.** Briefly outline the overall change in rates of overweight and obesity between 1995 and 2017–18 according to **FIGURE 2.21**.
b. Suggest factors that may have led to these trends.
c. Which age groups are most likely to be overweight or obese according to this figure?
5. **a.** List one difference between the long-term conditions of males and females as shown in **TABLE 2.3**.
b. Suggest factors that may have led to this difference.
6. How do the causes of morbidity change over the lifespan as shown in **TABLE 2.4**?
7. **a.** What are the most reported conditions in the 15–24 age group as shown in **TABLE 2.4**?
b. Which of these conditions could be considered life threatening?
8. Which causes from **FIGURE 2.20** do you think would be responsible for the most hospitalisations of people your age?
9. According to **FIGURE 2.20** approximately how many hospitalisations were there in 2017–18 for:
 - a. dialysis for kidney disease
 - b. diseases of the musculoskeletal system
 - c. diseases of the respiratory system?

Apply your knowledge

10. When looking at morbidity rates, why is it important to consider both incidence and prevalence rates?
11. 'Breast cancer — incidence up, death rate down, survival rates improve'. Is this headline possible? Explain your response.

12. Look at **FIGURE 2.18**. This person's physical health and wellbeing has been affected. How might their social, emotional, mental and spiritual health and wellbeing be affected? Are they all negative effects?
13.
 - a. Why might females be more likely to visit doctors?
 - b. What consequences does this have on the health status of males versus females?
14. Are hospital and GP data completely accurate in indicating the level of morbidity in the population? Why or why not?
15. Describe how increasing rates of obesity could have a large impact on mortality and morbidity statistics in the future.
16. How could living with cancer affect mental and spiritual health and wellbeing?

2.4 Quick quiz



2.4 Exercise

2.4 Exam questions

Question 1 (1 mark)

Source: VCE 2015, *Health and Human Development Exam*, Q.5.a; © VCAA

Define 'prevalence'.

Question 2 (2 marks)

Source: VCE 2013, *Health and Human Development Exam*, Q.5.c; © VCAA

Death rates are one way in which health status can be measured. Incidence and prevalence are other measurements of health status.

Outline the difference between incidence and prevalence.

Question 3 (2 marks)

Source: VCE 2013, *Health and Human Development Exam*, Q.1.b; © VCAA

Outline the difference between mortality and morbidity as measurements of health status.

Question 4 (2 marks)

Source: VCE 2011, *Health and Human Development Exam*, Q.6; © VCAA

Define the following terms.

Under-five mortality rate

Morbidity

Question 5 (4 marks)

'Swine flu has been called a pandemic by the World Health Organization because the disease has spread to affect people in 77 countries and has caused 254 206 cases and 2837 deaths. In Victoria, with a population of about 5 million, 2420 people have been diagnosed with the disease, and 30 new cases are being diagnosed each day. Swine flu has killed 24 people in Victoria.'

From the passage above, **identify** an example of each of incidence, prevalence, mortality and morbidity.

More exam questions are available in your learnON title.

2.5 Burden of disease

KEY CONCEPT Exploring the burden of disease in Australia

Burden of disease statistics take the impact of both mortality and morbidity into account and therefore provide a way of examining the total burden that a condition places on society. Specifically, burden of disease measures the gap between current health status and an ideal situation where everyone lives to an old age free of disease and disability.

In the past, if someone wanted to examine mortality and morbidity data to compare the effect that asthma has on Australians compared to the impact cancer has, it would have been difficult. How could a comparison be made between asthma (which affects more people than cancer, can last a lifetime, but causes relatively few deaths) and cancer (which causes thousands of deaths per year)? To overcome this problem, scientists and health professionals devised a system that allows a comparison of conditions that cause death, conditions that cause illness or disability, and those that cause both.

Burden of disease is measured in a unit called **disability-adjusted life year** or **DALY** (pronounced 'dally'), where one DALY is the equivalent of one year of life lost due to premature death or the equivalent time of healthy years lost as a result of living with a disease or disability. If 1000 DALY were lost due to asthma in a population, it means that 1000 years of healthy life have been lost as a result of premature death or by people suffering from the condition who experienced a reduced quality of life. If 2000 DALY were lost due to mental illness in the same population, it means that mental illness was twice the burden of asthma.

DALY are useful for comparing population groups and can provide valuable information about trends and where interventions are required. DALY can also be used to gauge the contribution of various risk factors to the overall burden of disease experienced. DALY are often calculated for a range of conditions and added to produce a grand total. In 2017, 5.9 million years of 'healthy' life were lost in Australia.

Disability-adjusted life year is calculated by adding **years of life lost (YLL)** due to premature death and the number of **years lost due to disability (YLD)**, illness or injury (see **FIGURE 2.23** and the following sections).

FIGURE 2.22 Burden of disease data allow us to compare the overall burden of conditions such as arthritis (which rarely causes death) with conditions that lead to many deaths.



Burden of disease a measure of the impact of diseases and injuries, specifically it measures the gap between current health status and an ideal situation where everyone lives to an old age free of disease and disability. Burden of disease is measured in a unit called the DALY (VCAA).

Disability-adjusted life year (DALY) a measure of burden of disease. One DALY is equal to one year of healthy life lost due to illness and/or death. DALYs are calculated as the sum of the years of life lost due to premature death and the years lived with disability for people living with the health condition or its consequences (AIHW, 2018).

Years of life lost (YLL) a measure of how many years of expected life are lost due to premature death

Years lost due to disability (YLD) a measure of how many healthy years of life are lost due to disease, injury or disability

FIGURE 2.23 The equation for calculating burden of disease



2.5.1 Years of life lost (YLL)

Years of life lost (YLL) are the fatal component of DALY. Each YLL represents one year of life lost due to premature death. YLL can be calculated for any condition that causes death. The younger a person is when they die from a condition, the greater the number of YLL will be added for that condition. If a person dies from cancer at 60, and life expectancy for a 60-year-old is 85, then 25 years of life have been lost. An infant who does not survive past the age of 1 will contribute significantly more YLL than a 60-year-old as the life expectancy for a 1-year-old is around 82 years, which means 81 YLL are added.

2.5.2 Years lost due to disability (YLD)

Years lost due to disability (YLD) are the non-fatal component of DALY. A complex formula is used to calculate YLD because conditions vary in their severity. For example, Alzheimer's disease generally has a greater impact on a person's life than asthma, and this needs to be considered when calculating YLD. Because the formula used to calculate YLD takes such considerations into account, it is possible to make a more accurate comparison. If a person suffers from a disease for 10 years that makes them only 'half well', then they have lost five 'healthy' years due to this condition. Although ill health generally has greater impacts towards the end of life, YLD can be contributed at any stage of a person's life.

FIGURE 2.24 DALY are calculated by adding the fatal and non-fatal impacts of disease and injury.

DALY

Disability Adjusted Life Year is a measure of the overall burden of disease and injury, expressed as the number of healthy years of life lost due to illness and/or premature death.

$$= \text{YLD} \text{ (Years Lost due to Disability)} + \text{YLL} \text{ (Years of Life Lost)}$$



Source: https://commons.wikimedia.org/wiki/File%3ADALY_disability_affected_life_year_infographic.svg

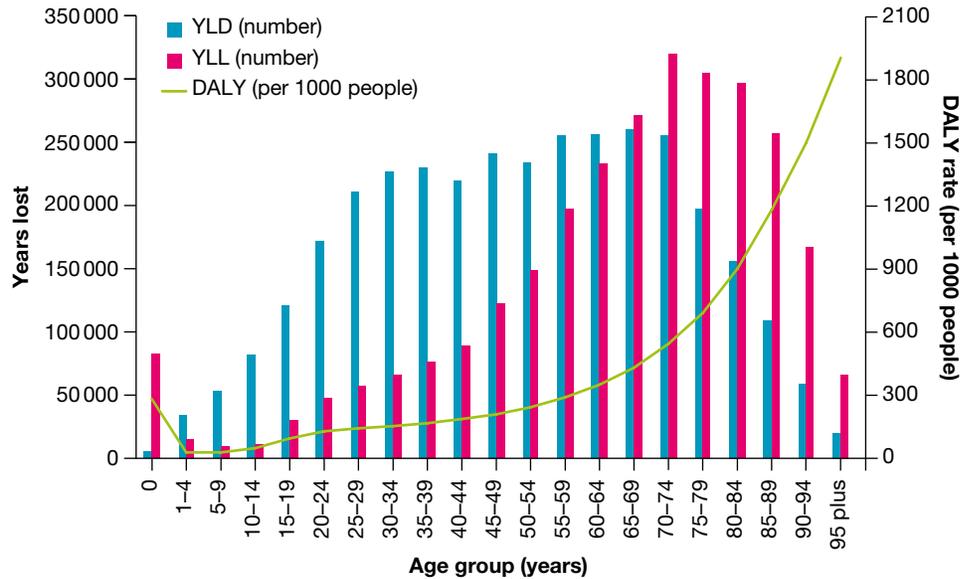
YLL and YLD are equal in value in that both represent one year of life lost. However, YLL is from premature death whereas YLD is from illness, injury or disability.

The number of YLL and YLD change across the lifespan as shown in **FIGURE 2.25**. Those aged under one contribute significantly more YLL than other young people. Most of the total burden is from non-fatal causes up to the age of 64, after which the fatal burden is higher. The number of YLL increases gradually until reaching its maximum in the 70–74 age group. If an individual dies between after the age of 74, they contribute a smaller number of YLL, but many people die after this age, accounting for the relatively high number of YLL in the older age groups.

The number of YLD gradually increases from birth until the age of around 35–39 and then fluctuates until reaching a peak in the 65–69 age group before gradually decreasing. There are a large number of people in the 35–69 age groups who experience chronic illness, which contributes to this trend.

The overall rate of DALY is relatively high (around 300 per 1000 people) in the first year of life, after which it declines significantly in early childhood to around 40 per 1000 people. There is then a gradual increase to around age 64, followed by rapid increases throughout the remainder of the lifespan until the overall rate reaches around 1900 per 1000 people for those aged 95 and over.

FIGURE 2.25 Fatal and non-fatal composition of the total burden of disease, by age, 2019



Source: Adapted from Institute for Health Metrics and Evaluation (IHME). Global Burden of Disease Study 2019 Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2021.

2.5.3 Burden of disease in Australia

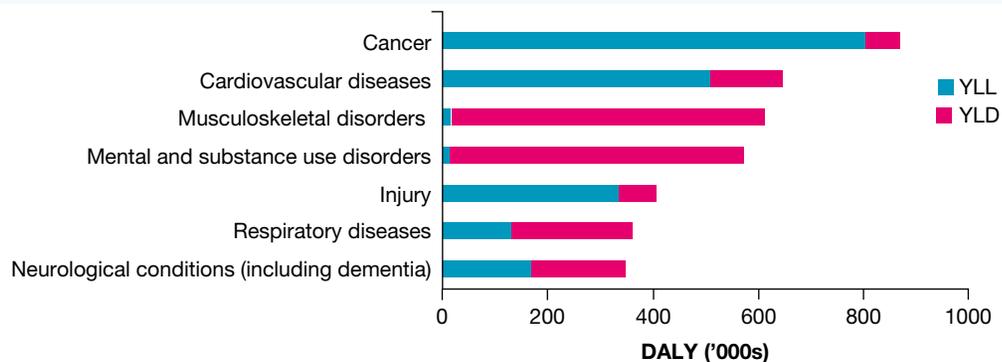
Australians’ health status is among the best in the world and continues to improve. However, the prevalence and incidence of certain diseases and conditions have not improved and have actually deteriorated. Many of these are largely preventable conditions that occur as a result of the choices people make throughout their lives. These ‘lifestyle’ diseases are now the focus of many government and non-government initiatives.

By looking at burden of disease data, a more complete picture of the conditions that are having the largest impact on the Australian population can be gained.

In 2020, around 5 million healthy years were lost due to premature death and people living with disease and disability. The five disease groups causing the most burden were cancer, cardiovascular diseases, musculoskeletal disorders, mental and substance use disorders and injuries. Together, these accounted for around 63 per cent of the total burden.

The largest contributors to overall burden of disease are shown in **FIGURE 2.26**. You can see in this graph the total burden (DALY), the burden contributed by the fatal component (YLL), and the burden contributed by the non-fatal (YLD) component of each condition.

FIGURE 2.26 Burden (YLL, YLD and DALY) of major disease groups, 2019

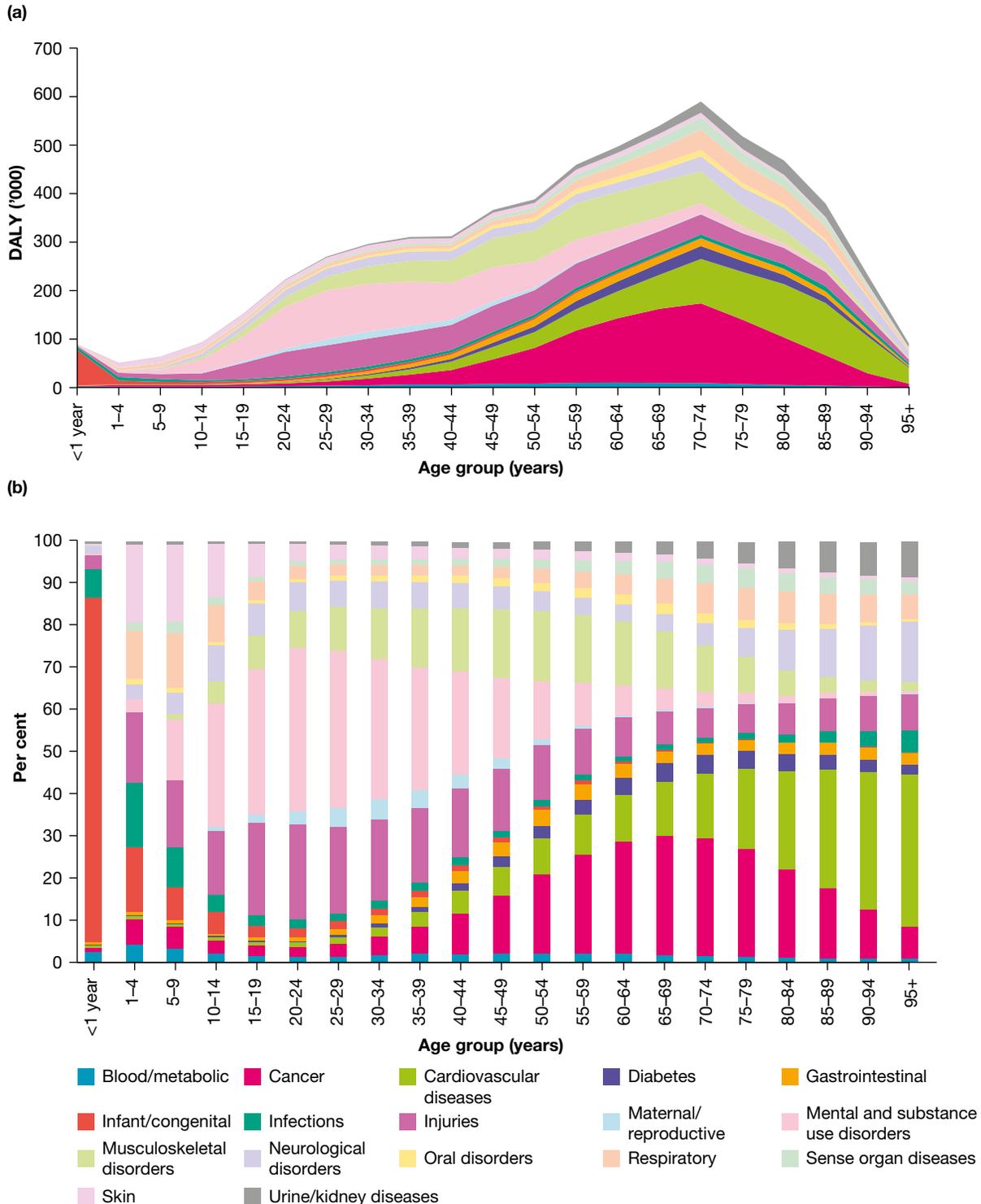


Source: Adapted from AIHW Analysis of Australian Burden of Disease Study 2015 Database.

The overall burden of disease is different for different age groups. The total number of DALY is relatively low in the younger age groups and gradually increases until reaching the highest point for those aged 60–64 (see **FIGURE 2.27A**). The contribution of various conditions also changes for people of different ages. As you can see from **FIGURE 2.27B**, infant/congenital conditions (shown in dark orange) have their greatest impact in the first year of life and then decrease as age increases. Mental conditions (shown in pink) and injuries (purple) account for a relatively high proportion of DALY up to around 50 years of age, after which cancer (dark pink) and cardiovascular diseases (green) increase in proportion of total burden.

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FIGURE 2.27 Number (a) and relative proportion (b) of the total burden (DALY), by disease group and age, 2019



Source: Adapted from IHME, 2021. <http://ghdx.healthdata.org/gbd-results-tool>

2.5.4 Trends in burden of disease

In the *Australian burden of disease study* (AIHW, 2019), a number of trends were identified between 2003 and 2015:

- When the impact of the increasing age and size of the population is taken into account, the rate of burden decreased 11 per cent between 2003 and 2015, from 208 to 184 DALY per 1000 people. The non-fatal burden remained similar in 2015 compared to 2003 (95 YLD per 1000 and 97 YLD per 1000 population respectively) and fatal burden decreased 20 per cent from 111 to 89 YLL per 1000 people.
- For specific disease groups, most rates of burden of disease decreased or stayed the same between 2003 and 2015, although there were increasing rates for neurological conditions (including dementia) and urinary and kidney diseases.
- For non-fatal burden, rates increased for back problems, dementia and osteoarthritis.
- There was a large decrease in the rate of fatal burden for cardiovascular diseases.
- Future changes to burden of disease can be difficult to predict, but based on current data the trends predicted by the Australian Institute of Health and Welfare in relation to selected disease groups up to 2023 are shown in **FIGURE 2.29**.

FIGURE 2.28 Asthma is a leading cause of respiratory disease.

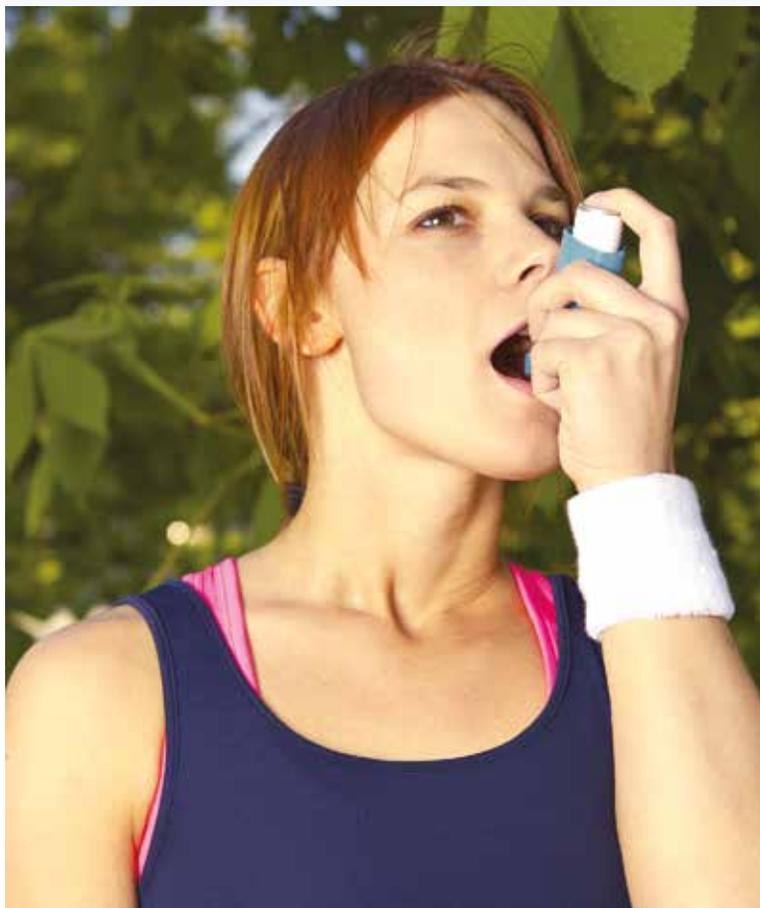
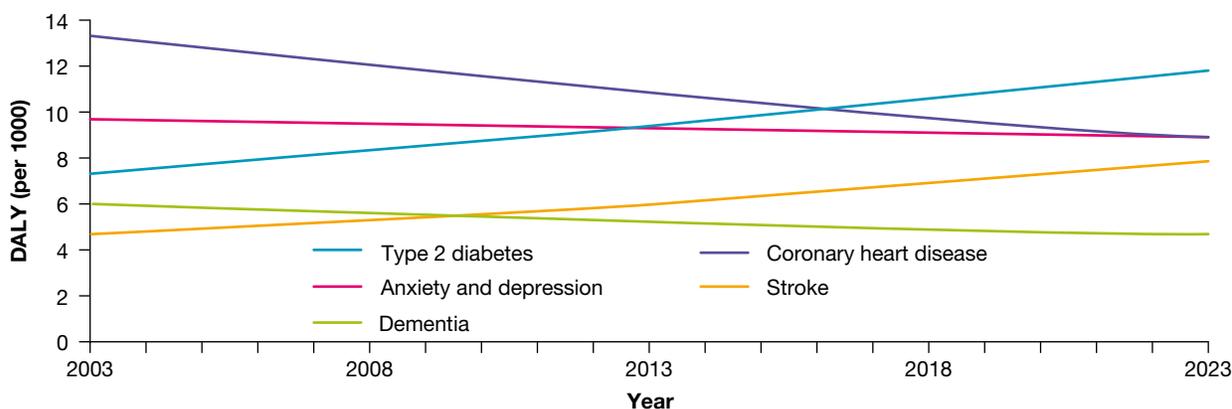


FIGURE 2.29 Projected trends in leading causes of disease burden, 2003–23



Source: AIHW, *Australia's health 2010*.

2.5 Activity

Create a mind map of the health indicators covered in this subtopic.

2.5 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

2.5 Quick quiz

on

2.5 Exercise

2.5 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3

■ LEVEL 2

4, 5, 6, 8

■ LEVEL 3

7, 9, 10

Test your knowledge

- What is meant by the term 'burden of disease'?
 - What is the benefit of using burden of disease as a health indicator?
 - What is the unit of measurement for burden of disease data?
- What is one DALY equal to?
 - How are DALY calculated?
- Explain the difference between YLL and YLD.
- Refer to **FIGURE 2.26**.
 - What are the top three contributors to YLL in Australia?
 - What are the top three contributors to YLD in Australia?
 - What are the top three contributors to overall burden of disease in Australia?
- Refer to **FIGURE 2.27**.
 - Identify the age group that contributed the most DALY in 2019. Approximately, how many DALY were contributed by this age group?
 - Identify the age group that contributed the least DALY in 2019.
 - Identify the age group that had the greatest proportion of DALY contributed by neurological conditions.
 - Identify the age group that had the greatest proportion of DALY contributed by injuries.
- According to **FIGURE 2.27**, approximately how many DALY were contributed by infants as a result of infant/congenital conditions?

Apply your knowledge

- Explain how one condition can cause more deaths yet contribute fewer YLL than another condition.
- Describe how the social health and wellbeing of an individual may be affected when suffering from cancer.
- If you were the Minister for Health and could select three conditions on which to focus resources, which would you pick? Justify your choice.
- Which health indicator do you believe provides the most accurate picture of health status in Australia's? Justify your choice.

2.5 Quick quiz

on

2.5 Exercise

2.5 Exam questions

Question 1 (3 marks)

Source: VCE 2016, Health and Human Development Exam, Q.8.c; © VCAA

Cardiovascular diseases contribute to 14% of the total burden of disease in Australia and New Zealand.

- What is meant by 'burden of disease'?
- How is burden of disease measured?

Question 2 (2 marks)

Source: VCE 2014, Health and Human Development Exam, Q.1.a; © VCAA

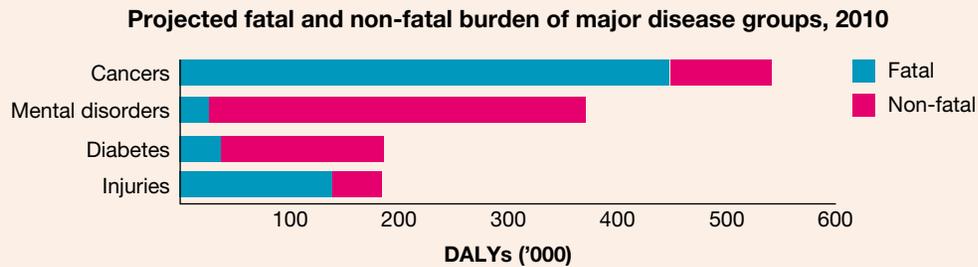
Define ‘disability adjusted life year (DALY)’.

Question 3 (3 marks)

Source: VCE 2011, Health and Human Development Exam, Q.3; © VCAA

A measure known as the burden of disease shows the impact of different health problems.

The graph below shows the projected fatal and non-fatal burden of some major disease groups in Australia.



Define burden of disease and use an example from the graph to illustrate its meaning.

Question 4 (1 mark)

Source: VCE 2007, Health and Human Development Exam, Q.2.a.i; © VCAA

TABLE 2 shows the Disability-Adjusted Life Years (DALYs) by age, sex and cause in Victoria 2001.

TABLE 2 DALYs by age, sex and cause, Victoria, 2001

Broad Disease Group	Males by age group years (years)					Females by age group (years)				
	0–14	15–34	35–54	55–74	75+	0–14	15–34	35–54	55–74	75+
Cancer	592	1 581	11 849	38 954	18 165	373	2 098	15 660	28 248	17 632
Diabetes	175	496	5 450	7 017	2 177	169	381	4 180	5 818	3 320
Mental disorders	4 408	25 421	12 665	3 429	467	2 477	23 376	17 074	4 570	530
Cardiovascular disease	121	1 488	9 869	26 332	22 579	220	1 188	4 567	16 821	31 868
Musculoskeletal diseases	63	592	2 613	3 648	1 239	66	724	3 555	5 335	2 814
Injuries	2 138	14 479	8 830	3 209	1 050	1 207	4 172	3 340	1 793	1 690
Other	21 575	9 056	16 641	33 024	27 017	16 869	13 450	15 115	25 638	38 393
Total	29 072	53 113	67 917	115 613	72 694	21 381	45 389	63 491	88 223	96 247

Source: Adapted from Public Health Group, Rural and Regional Health and Aged Care Services Division, 2005, *Victorian Burden of Disease Study, Mortality and morbidity in 2001*, Victorian Government Department of Human Services, Melbourne, p. 177.

Which disease group contributes most to the DALYs for the 15–34 year age group for males and females?

Question 5 (3 marks)

Source: VCE 2007, Health and Human Development Exam, Q.2.a.ii; © VCAA

TABLE 2 shows the Disability-Adjusted Life Years (DALYs) by age, sex and cause in Victoria 2001.

TABLE 2 DALYs by age, sex and cause, Victoria, 2001

Broad Disease Group	Males by age group years (years)					Females by age group (years)				
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Cancer	592	1 581	11 849	38 954	18 165	373	2 098	15 660	28 248	17 632
Diabetes	175	496	5 450	7 017	2 177	169	381	4 180	5 818	3 320
Mental disorders	4 408	25 421	12 665	3 429	467	2 477	23 376	17 074	4 570	530
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Injuries	2 138	14 479	8 830	3 209	1 050	1 207	4 172	3 340	1 793	1 690
Other	21 575	9 056	16 641	33 024	27 017	16 869	13 450	15 115	25 638	38 393
Total	29 072	53 113	67 917	115 613	72 694	21 381	45 389	63 491	88 223	96 247

Source: Adapted from Public Health Group, Rural and Regional Health and Aged Care Services Division, 2005, *Victorian Burden of Disease Study, Mortality and morbidity in 2001*, Victorian Government Department of Human Services, Melbourne, p. 177.

Are mental disorders likely to contribute more to DALYs through years of life lost to premature death (YLL), or healthy years lost due to disability (YLD)? **Explain** why.

More exam questions are available in your learnON title.

2.6 KEY SKILLS

2.6.1 Describe and apply indicators used to measure health status

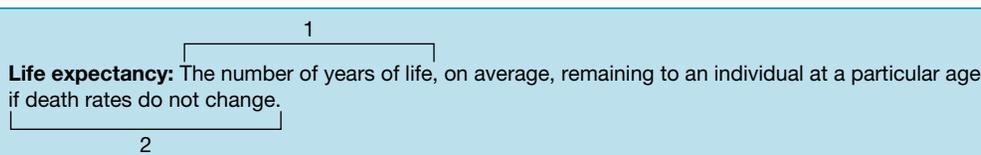
tlvd-1909

KEY SKILL Describe and apply indicators used to measure health status

Tell me

The ability to describe key health status indicators and explain the difference between two terms is an essential skill. When defining key health status indicators, it is important to include all the crucial aspects of the definition. Frequent use of these terms is a good way to gain an understanding of what they mean and when they should be used. When defining a key term, try to avoid a definition that is too narrow. For example, a definition of life expectancy requires two components to make it complete.

Life expectancy: The number of years of life, on average, remaining to an individual at a particular age if death rates do not change.



Once the meanings of the key health indicators are known, it is important that the information provided by each is understood so they can be used to accurately discuss characteristics of the health status of populations.

Show me

An example of a response discussing differences in health status between males and females could be:

Females experience a higher life expectancy and health-adjusted life expectancy¹ than males. This means that on average, females are expected to live longer than males if current death rates don't change.² It also means that females on average will live longer in full health and without reduced functioning, compared to males.³

1 Two relevant health indicators are identified.

2 A comparison between males and females is made.

3 An understanding of the health indicators is shown.

Practise the key skill

1. Explain burden of disease.
2. Explain the difference between life expectancy and health-adjusted life expectancy.
3. Making reference to two health indicators, explain the health status of Australians.

2.6.2 Use data to describe and evaluate the health status of Australian

tlvd-1910

KEY SKILL Use data to describe and evaluate the health status of Australians

Tell me

The use and interpretation of data is a skill that is required throughout this course and will be revisited at various times throughout the key skill sections.

Health status data can help to identify trends over time, or compare countries or population groups. Effective interpretation of this data is important for improving the health and wellbeing of the individuals or groups in question. Data in the form of tables, graphs and charts are useful for comparing the health status experienced in different countries or between different groups.

To become proficient at interpreting data, it is important to be able to read and interpret a range of graphs and tables. Take time to work out exactly what the graph is about and what information needs to be extracted from it.

The following steps provide a systematic way of reading graphs and tables.

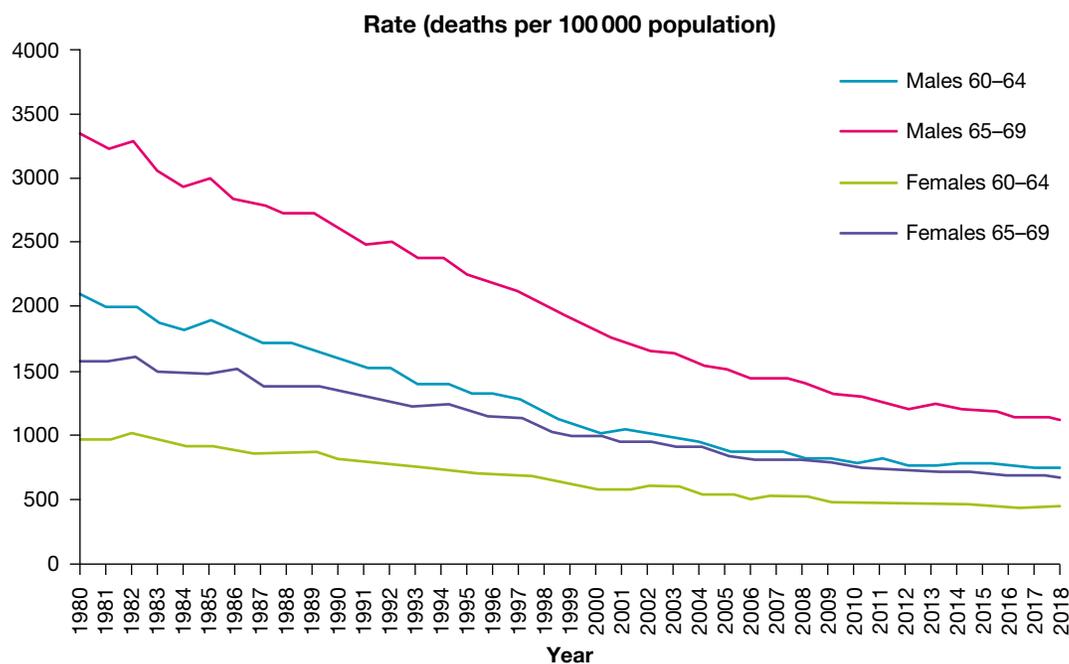
1. Read the *title* of the graph. The title usually gives an indication of the kind of information presented in the graph. It may be located at the top of the graph or next to the figure number.
2. Read the *horizontal* and *vertical axes* (of a bar graph, for example) and look at the units; for instance, the units might represent a percentage, year, number, rate, proportion or dollars. Use the correct unit when referring to data (see also step 6 below)
3. Look at the key if there is one. This helps identify various elements of the data.
4. Read any *notes that relate to the data*. There may be additional written information at the bottom of the graph explaining various elements of the graph. An element of the data that may not make sense may become clear after reading these notes.
5. Look for *trends, similarities and differences between the data*. This will enable a better understanding of the data that the graph is actually presenting.
6. When commenting on data, try to avoid making general statements such as ‘more’ and instead try to use data from the graph to support your statement; for instance, use ‘around 75 deaths per 100 000 compared to around 150 deaths per 100 000’, making sure to refer to the correct unit of measurement.

Show me

Once interpreted, data can be used to describe and/or evaluate the health status of Australians.

FIGURE 2.30 contains data that can be used to describe and evaluate the health status of Australians in regard to mortality rates.

FIGURE 2.30 Mortality rates, people aged 60–64 and 65–69 by sex, 1980–2018



Source: AIHW, GRIM Books, 2021.

Although the gap between male and female mortality rates has narrowed over time, males in Australia experienced higher mortality rates than females every year.⁴ The mortality rate for males aged 65–69 decreased from around 3350 per 100 000 population in 1980 to around 1100 per 100 000 in 2018. For females in the same age group, rates decreased from around 1600 per 100 000 in 1980 to around 700 per 100 000 in 2018.⁵

Those aged 65–69 and over were significantly more likely to die than those aged 60–64 in 2018.⁶ For example, the mortality rate for males aged 60–64 was around 750 per 100 000 compared to around 1100 per 100 000 males aged 65–69. For females, the mortality rate was around 250 deaths per 100 000 higher for the 65–69 age group compared to the 60–64 age group.⁷

4 A general statement identifying a trend and a comparison of males and females is made.

5 Data from the graph is used to support the initial statement. As exact numbers cannot be obtained from the information provided, terms such as ‘approximately’ and ‘around’ ensure that the statements are not definite.

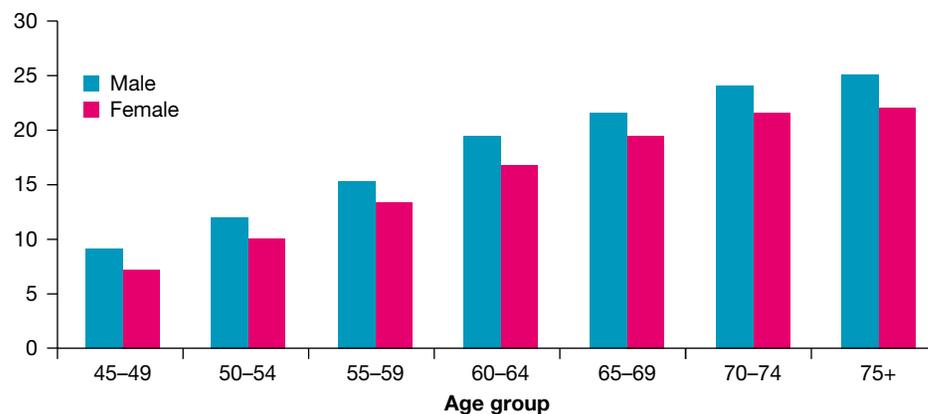
6 A second statement identifying a difference between the age groups is made.

7 Data from the graph is used to clarify the second statement and correct units are used.

Practise the key skill

4. Refer to **FIGURE 2.31**, which shows the prevalence of type 2 diabetes for males and females aged 45 and over, to answer the following.
 - a. Outline one similarity and one difference in health status between males and females in Australia.
 - b. Outline the relationship between age and the prevalence of type 2 diabetes in Australia.

FIGURE 2.31 Prevalence of type 2 diabetes among people aged 45 years and over, according to sex, 2019



Source: Adapted from IHME, 2021.

2.7 Review

2.7.1 Topic summary

2.2 Self-assessed health status and life expectancy

- Health status refers to the level of health and wellbeing experienced by individuals, groups or whole populations. For the individual, health status can change quickly. The health status of groups and populations is based on average figures and therefore changes more slowly.
- Health status can be measured using a number of health indicators, including self-assessed health status, life expectancy, health-adjusted life expectancy, mortality, morbidity and burden of disease. The statistics relate to averages so their use is limited when predicting the health and wellbeing of an individual.
- The health status of Australians is excellent overall and is constantly improving. Australia has one of the highest life expectancy rates and one of the lowest mortality rates in the world. However, Australia could improve, most notably in the rates of obesity, injuries and diabetes.
- The majority of Australians assess their health status as excellent or very good, although this proportion decreases with age.
- Life expectancy at birth in Australia is about 80.9 for males and 85.0 for females. Life expectancy has increased for both sexes over time.

2.3 Mortality

- Mortality refers to the number of deaths in a population in a given period (usually 12 months).
- Cardiovascular disease and cancer are the leading causes of mortality in Australia. Many of the causes of these conditions are preventable.
- Infant mortality rates are low in Australia compared to other countries.
- Pregnant women in Australia experience low maternal mortality rates compared to most other countries.

2.4 Morbidity

- Morbidity is defined as ill health in an individual and levels of ill health within a population.
- The morbidity rate is a measure of how many people suffer from a particular condition during a given period of time.
- An overall decrease in mortality rates has resulted in an increase in morbidity rates for many conditions.
- Obesity is emerging as a major health concern in Australia, as are other lifestyle conditions.

2.5 Burden of disease

- Burden of disease measures the gap between current health status and an ideal situation where everyone lives to an old age free of disease and disability.
- Burden of disease is measured in disability-adjusted life year (or DALY) where one DALY equals one year of healthy life lost to premature death and time lived with illness or disability. DALY are calculated by adding the years of life lost (YLL) and years lost due to disability (YLD).
- Years lost due to disability (YLD) are the non-fatal component of DALY.
- Years of life lost (YLL) are the fatal component of DALY. Each YLL represents one year of life lost due to premature death.
- Cancer contributes most to the YLL and DALY overall.
- Mental and substance use disorders contribute most to the YLD.

Resources

 **Digital document** Summary (doc-36137)

2.7.2 Key terms

Asphyxia interrupted breathing leading to low levels of oxygen in the body, unconsciousness and often death

Burden of disease a measure of the impact of diseases and injuries, specifically it measures the gap between current health status and an ideal situation where everyone lives to an old age free of disease and disability. Burden of disease is measured in a unit called the DALY (VCAA).

Congenital malformations refers to physical defects developing either in the uterus or dating from birth

Disability-adjusted life year (DALY) a measure of burden of disease. One DALY is equal to one year of healthy life lost due to illness and/or death. DALYs are calculated as the sum of the years of life lost due to premature death and the years lived with disability for people living with the health condition or its consequences (AIHW, 2018).

Health-adjusted life expectancy (HALE) the average length of time an individual at a specific age can expect to live in full health; that is, time lived without the health consequences of disease or injury (AIHW, 2018)

Health indicators standard statistics that are used to measure and compare health status (e.g. life expectancy, mortality rates, morbidity rates)

Health status 'An individual's or a population's overall health, taking into account various aspects such as life expectancy, amount of disability and levels of disease risk factors.' (AIHW, 2008)

Hospital separation episodes of hospital care that start with admission and end at transfer, discharge or death

Incidence refers to the number (or rate) of new cases of a disease/condition in a population during a given period

Infant mortality rate the rate of deaths of infants before their first birthday, usually expressed per 1000 live births

Life expectancy the number of years of life, on average, remaining to an individual at a particular age if death rates do not change. The most commonly used measure is life expectancy at birth (AIHW, 2018).

Maternal mortality death of a mother during pregnancy, childbirth or within six weeks of delivery

Maternal mortality ratio the number of mothers who die as a result of pregnancy, childbirth or associated treatment per 100 000 women who give birth (or per 100 000 live births)

Morbidity ill health in an individual and levels of ill health within a population (often expressed through incidence and prevalence) (AIHW, 2018)

Mortality the number of deaths in a population in a given period (AIHW, 2018)

Mortality rate (sometimes referred to as 'death rate') the measure of the proportion of a population who die in a one-year period (usually per 100 000)

Obstetric haemorrhage heavy bleeding occurring as a result of pregnancy or childbirth

Prevalence the total number or proportion of cases of a particular disease or condition present in a population at a given time (AIHW, 2008)

Self-assessed health status 'An individual's own opinion about how they feel about their health, their state of mind and their life in general.' (AIHW, 2018) It is commonly sourced from population surveys.

Trend a general change or movement in a particular direction. For example, trends indicate a significant increase in obesity rates over the past 20 years.

Under-five mortality rate (U5MR) the number of deaths of children under five years of age per 1000 live births (WHO, 2008)

Years lost due to disability (YLD) a measure of how many healthy years of life are lost due to disease, injury or disability

Years of life lost (YLL) a measure of how many years of expected life are lost due to premature death

▶ 2.7.3 Extended response: build your exam skills

tlvd-
2878

In topic 1, you were provided with opportunities to break extended response questions down into their components. In this section, you will build on this skill by breaking questions down and brainstorming the sorts of things you might link to for each part. For example, consider the following question:

Identify and briefly explain two health status indicators, and use them to draw a conclusion about the health status of males compared to females.

Step 1: This question can be broken down into the following parts

Identify and/briefly explain two health status indicators/and using your own knowledge, /draw a conclusion about the health status of males compared to females.

As can be seen, the four requirements of this question are:

- Identify two health status indicators
- Explain what each of the indicators mean
- Use your own knowledge
- Draw a conclusion about the health status of males compared to females.

Step 2: To build on this skill, it is possible to brainstorm the sorts of things that may be included in each part. For example:

Requirement of the question	Concepts that may be included for the requirement
Identify two health status indicators	<ul style="list-style-type: none"> • Self-assessed health status • Life expectancy • Health-adjusted life expectancy • Mortality (maternal, infant and/or under five) • Morbidity (incidence and/or prevalence) • Burden of disease (DALY, YLL and/or YLD).
Explain what each of the indicators mean	<p>This will depend on the indicators selected. For example:</p> <ul style="list-style-type: none"> • HALE: relates to how long a person can expect to live in full health/ free from disease, injury and disability based on current rates of mortality and morbidity. • DALY: <ul style="list-style-type: none"> • measure of burden of disease • 1 DALY is equal to one healthy year of life lost • Includes both fatal and non-fatal components
Use your own knowledge	<ul style="list-style-type: none"> • Males have lower HALE than females • Overall, males experience a higher rate of burden of disease than females. • Males experience a higher rate of DALY for a range of conditions, including: <ul style="list-style-type: none"> • Injuries • Cancer • Cardiovascular disease • Females experience a high rate of some conditions, including: <ul style="list-style-type: none"> • Musculoskeletal conditions • Neurological conditions • Blood and metabolic disorders • Reproductive and maternal problems
Draw a conclusion about the health status of males compared to females.	<ul style="list-style-type: none"> • Males generally have a lower level of health status compared to females. • Males tend to have a higher rate of DALY due to conditions that cause death. • Females experience higher rates of some conditions that contribute more to YLD.

Practice this skill

For the following questions, break each one down into its parts and brainstorm the sorts of things that could be included in each part.

1. Briefly explain the difference between infant and under-5 mortality rates and, using examples of factors that influence each, explain why these measures may be good indicators of the overall state of a society.
2. Identify and briefly explain three health status indicators and outline one strength and one weakness of each in relation to portraying overall health status in Australia.
3. Using examples, explain why numerous health status indicators are required to provide an overall picture of health status in Australia.

2.7 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

2.7 Exam questions

2.7 Exam questions

Question 1 (2 marks)

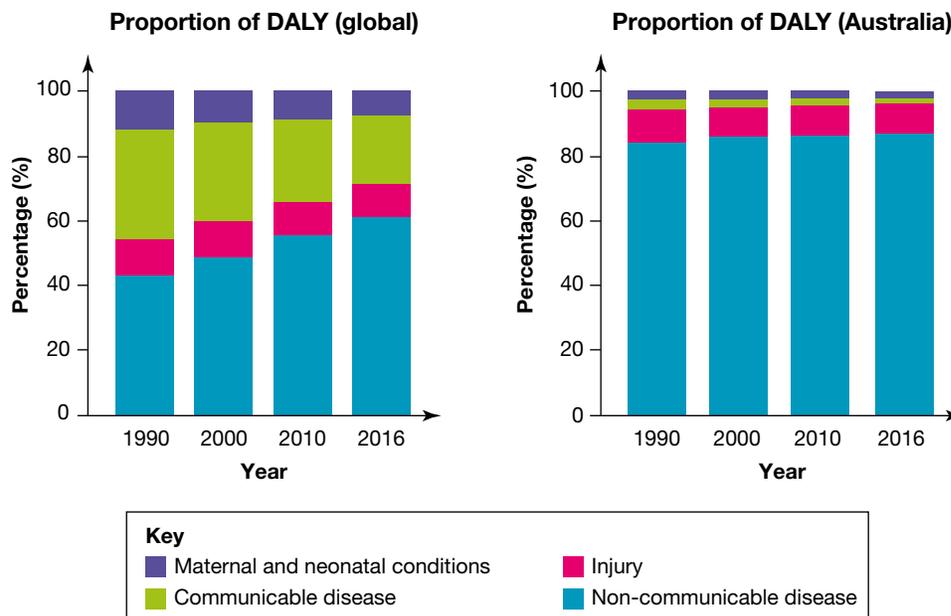
Source: VCE 2019, Health and Human Development Exam, Q.8a; © VCAA

Describe disability-adjusted life year (DALY) as a measure of health status.

Question 2 (3 marks)

Source: VCE 2019, Health and Human Development Exam, Q.8; © VCAA

Burden of communicable disease, injury, maternal and neonatal conditions and non-communicable disease, globally and in Australia, 1990, 2000, 2010 and 2016



Source: Australian Institute of Health and Welfare (AIHW), *Australia's Health 2018* 'Australia's Health' series no. 16, AUS 221, AIHW, Canberra, 2018, p. 95; GBD Collaborative Network 2017, Table S3.3.1

Use information from the graphs to **compare** the changes in the proportions contributed by each burden of disease to DALY, between 1990 and 2016, in Australia with the changes globally.

Question 3 (2 marks)

Source: VCE 2015, Health and Human Development Exam, Q.1.a; © VCAA

Explain the difference between life expectancy and health-adjusted life expectancy.

Question 4 (1 mark)

Source: VCE 2013, Health and Human Development Exam, Q.1.a; © VCAA

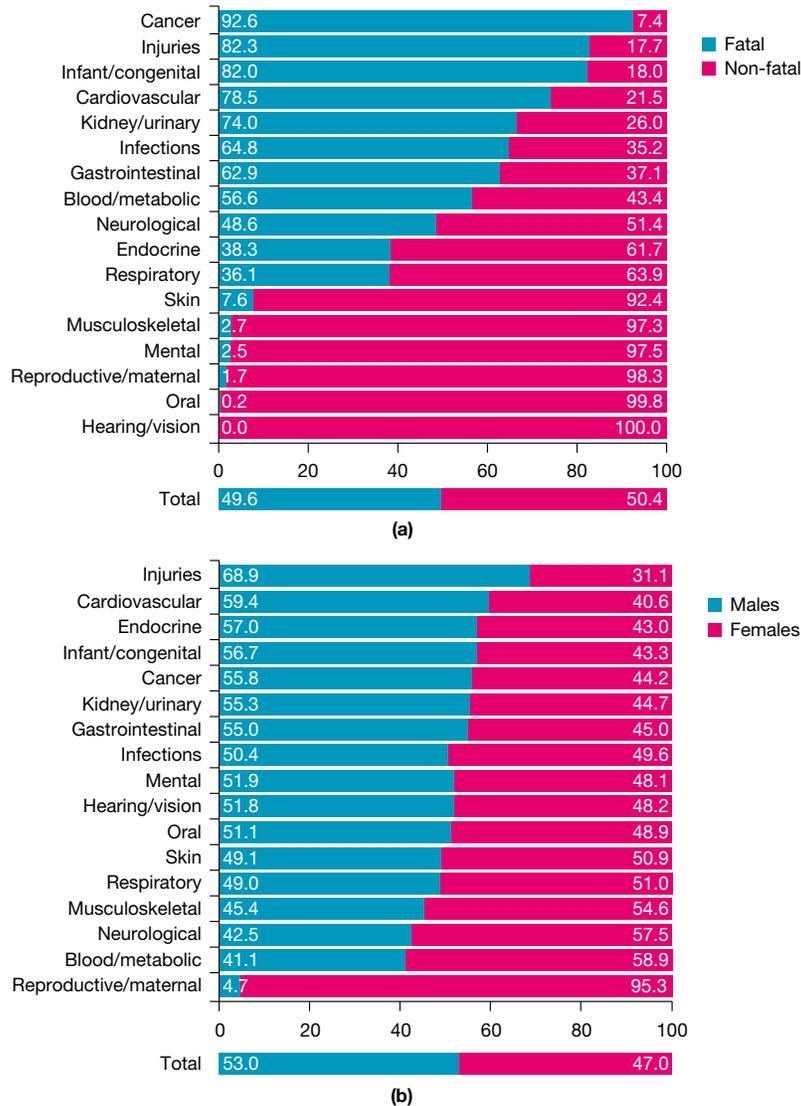
Define 'health status'.

Question 5 (6 marks)

Refer to **FIGURE 2.32**.

- a. Explain** what is meant by DALY. **1 mark**
- b. Identify** the disease group that contributed the greatest proportion of DALY through fatal outcomes. **1 mark**
- c. Identify** the disease group that contributed the greatest proportion of DALY through non-fatal outcomes. **1 mark**
- d. Identify** the disease group for which males had the highest proportion of DALY. **1 mark**
- e. Identify** the disease group for which males had the lowest proportion of DALY. **1 mark**
- f. Referring** to data from **FIGURE 2.33**, **compare** the health status of males and females in Australia. **4 marks**

FIGURE 2.32 Proportion (%) of total burden by fatal versus non-fatal (a) and sex (b), by disease group



Source: Adapted from AIHW 2019, *Australian burden of disease study: impact and causes of illness and death in Australia 2015*.

on Resources

- Digital document** Key terms glossary (doc-36124)
- Exam question booklet** Topic 2 Exam question booklet (eqb-0056)
- Interactivities** Crossword (int-6881)
Definitions (int-6882)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 2 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 2.1 Key terms glossary (doc-36124)
- 2.2 Joy of statistics worksheet (doc-32189)
- 2.7 Summary (doc-36137)

Exam question booklets

- 2.1 Topic 2 Exam question booklet (eqb-0056)
- 2.8 Topic 2 Exam question booklet (eqb-0056)

Teacher-led videos

- 2.2 Measurements of health status (tlvd-0260)
- 2.6 Key skill: Describe and apply indicators used to measure health status (tlvd-1909)
Key skill: Use data to describe and evaluate health status (tlvd-1910)
- 2.7 Extended response: build your exam skills (tlvd- 2878)

Weblinks

- 2.2 Joy of statistics
- 2.3 Interactive data on mortality in Australia

Interactivities

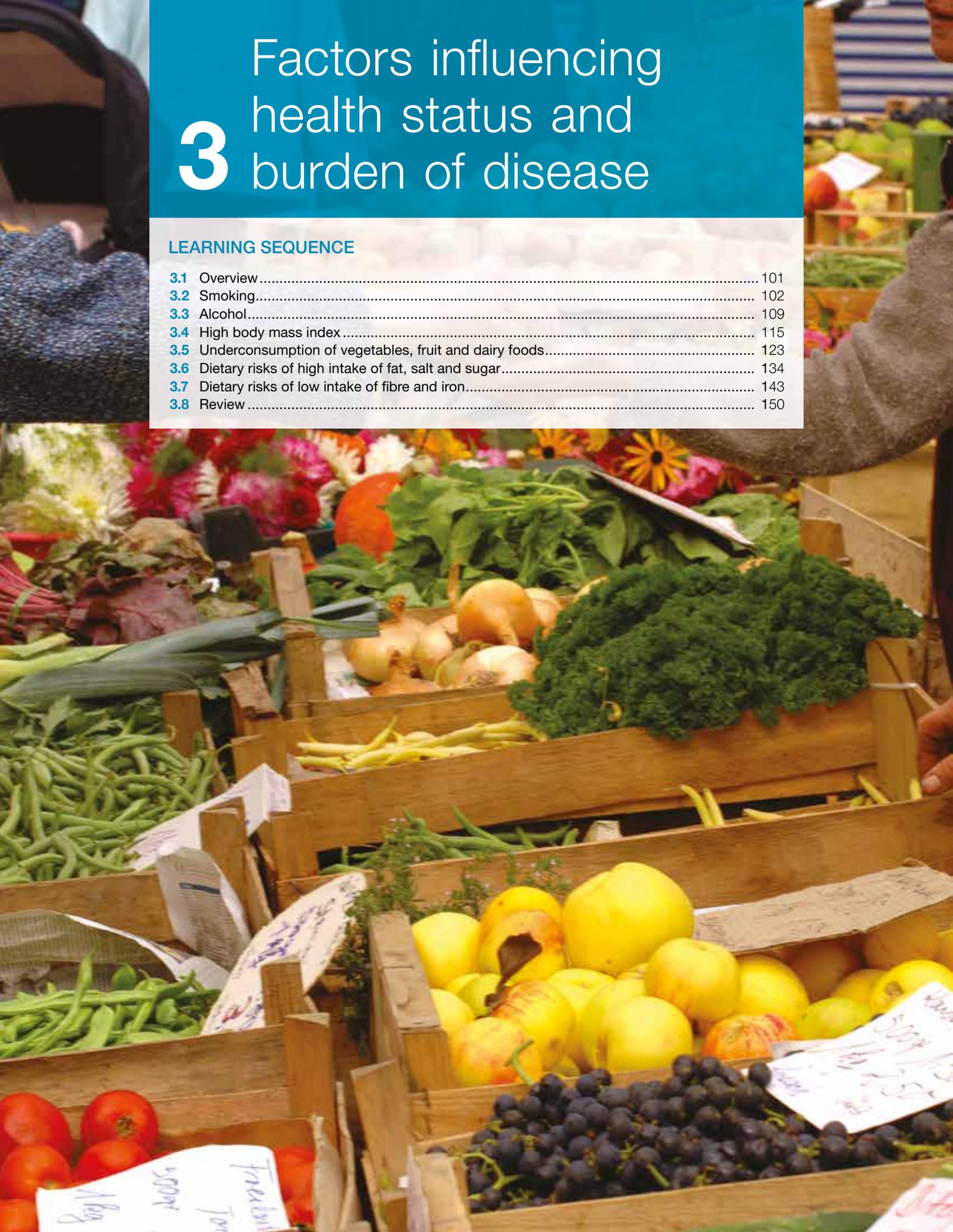
- 2.2 Health status indicators (int-8485)
Self-assessed health status, by age, 2017–18 (int-8486)
- 2.3 Infant mortality rates in Australia and the global average over time (int-8487)
Leading causes of death for those aged 1–4 in Australia, 2019 (int-8488)
- 2.4 Leading causes of GP visits, 2019–20 (int-8489)
Trends in overweight and obesity prevalence, 1995–2018 (int-8490)
- 2.4 Fatal and non-fatal composition of the total burden of disease, by age, 2019 (int-8491)
Number (a) and relative proportion (b) of the total burden (DALY), by disease group and age, 2019 (int-8492)
Projected trends in leading causes of disease burden, 2003–23 (int-8493)
- 2.7 Crossword (int-6881)
Definitions (int-6882)

To access these online resources, log on to www.jacplus.com.au.

3 Factors influencing health status and burden of disease

LEARNING SEQUENCE

3.1 Overview.....	101
3.2 Smoking.....	102
3.3 Alcohol.....	109
3.4 High body mass index.....	115
3.5 Underconsumption of vegetables, fruit and dairy foods.....	123
3.6 Dietary risks of high intake of fat, salt and sugar.....	134
3.7 Dietary risks of low intake of fibre and iron.....	143
3.8 Review.....	150



3.1 Overview

Key knowledge

The contribution to Australia's health status and burden of disease of smoking, alcohol, high body mass index, and dietary risks (underconsumption of vegetables, fruit and dairy foods; high intake of fat, salt and sugar; low intake of fibre and iron)

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Anaemia	Dental caries
Antioxidants	Energy dense
Atherosclerosis	Fortified
Body mass index (BMI)	Hypertension
Cholesterol	Nutrient dense



Resources



Digital document

Key terms glossary (doc-36125)



Exam question booklet

Topic 3 Exam question booklet (eqb-0057)

3.2 Smoking

KEY CONCEPT Understanding the contribution of smoking to Australia's health status and burden of disease

3.2.1 Introduction

As explored in topic 2, health status in Australia is very good and improvements continue to be made. Each year, however, there are around 5 million years of healthy life lost due to premature death and time lived with illness or disability in Australia, indicating that more improvements can be made.

The most recent reliable data relating to the burden of disease caused by specific risk factors in Australia comes from the 2015 Burden of Disease Study and is used throughout this topic. Data generally change slowly, so this information is still relevant when used to make judgements of burden of disease in Australia today.

The health status of individuals and populations is the product of a range of factors, some of which can be modified by behaviour and lifestyle changes. Four factors are particularly influential and relevant from an Australian perspective and will be explored in detail in the coming subtopics:

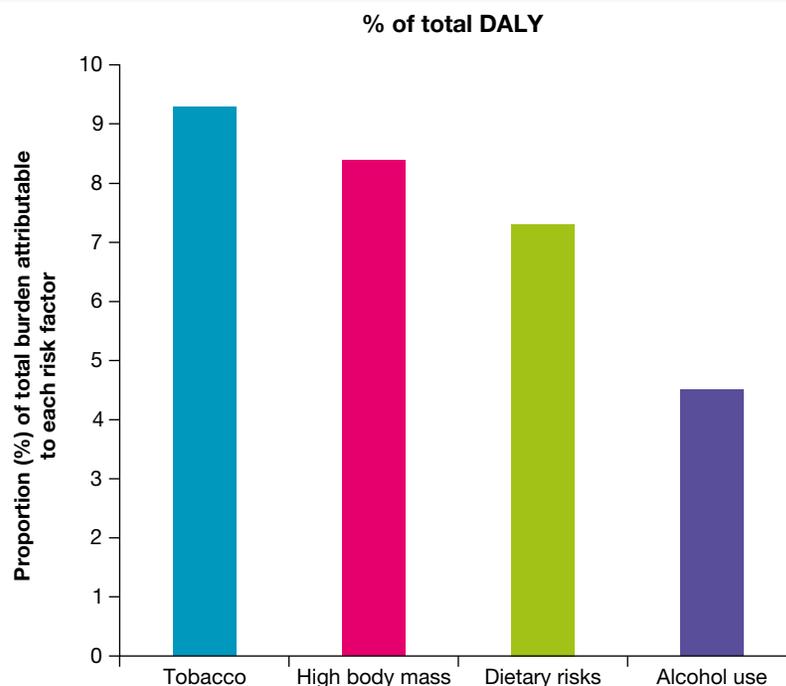
- smoking
- alcohol
- high body mass index
- dietary risks (under consumption of vegetables, fruit and dairy foods; high intake of fat, salt and sugar; low intake of fibre and iron).

Together, these factors account for around 30 per cent of the total burden of disease in Australia (see **FIGURE 3.2**). Being largely modifiable, these factors highlight areas where significant progress can be made in relation to health status and burden of disease.

FIGURE 3.1 Reducing tobacco and alcohol use could contribute to significant health gains in Australia.



FIGURE 3.2 Proportion (%) of total burden attributable to selected risk factors, 2015



Source: Adapted from AIHW 2019, *Australian burden of disease study: impact and causes of illness and death in Australia 2015*.

EXAM TIP

This study design dot point states that links must be made between the specified risk factors and health status and burden of disease. In the previous topic, you saw that burden of disease is one way of measuring health status, so how do you distinguish between burden of disease and health status when a question asks for impacts on one or the other?

Burden of disease is an indicator measured in disability-adjusted life years (DALY) and DALY are calculated by adding years of life lost (YLL) and years lost due to disability (YLD), which are the fatal and non-fatal components of burden of disease respectively. As a result, a question asking to link to burden of disease can link to any one of these three concepts (i.e. DALY, YLL or YLD). Health status questions, on the other hand, can link to any of the health status indicators including life expectancy, HALE, mortality and morbidity.

3.2.2 Rates and risk factors of smoking

Smoking is a practice in which a substance is burned and the resulting smoke is inhaled to be tasted and absorbed into the bloodstream. Smoking generally relates to the use of tobacco, but can also include marijuana and other drugs.

Rates of smoking have decreased significantly in Australia over time, from around 25 per cent in 1991 to around 11 per cent in 2019. A range of interventions contributed to this decrease, including advertising bans, bans on smoking indoors and increasingly in outdoor public spaces, plain packaging, price increases, restrictions on sales to minors, public education, and media campaigns.

Although rates have decreased significantly, tobacco use was responsible for 9.3 per cent of the total burden of disease and injury in 2015, making it the number one preventable and modifiable risk factor in Australia. The impact of tobacco includes the risks associated with past tobacco use, current use and exposure to secondhand smoke. Although males used to smoke in greater numbers, current rates of smoking are now more equal between males and females.

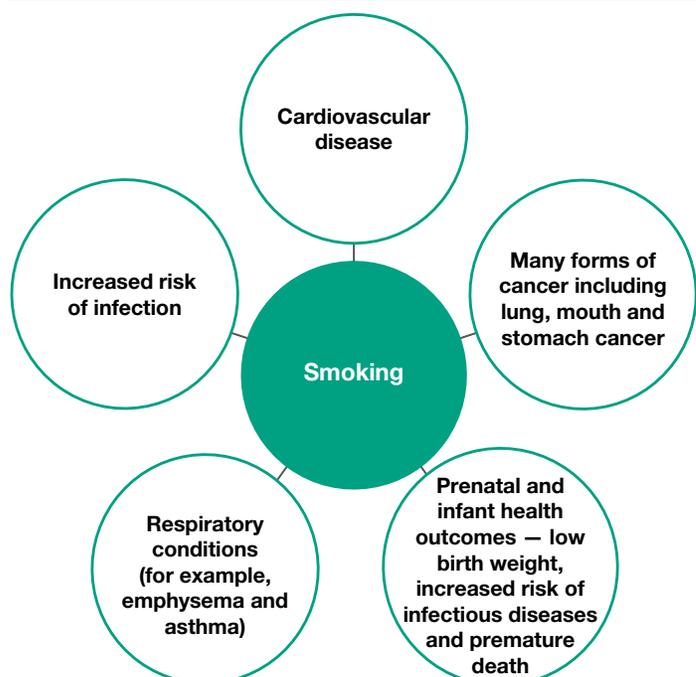
The dangers of smoking were proven more than 40 years ago. Even so, people continue to smoke and die from smoking-related conditions. Whether it is physical or mental, addiction to smoking cigarettes can be one of the hardest addictions to overcome.

Tobacco smoking is a risk factor for a range of health concerns as shown in **FIGURE 3.4**.

FIGURE 3.3 A range of interventions, such as smoking bans, have helped to reduce rates of tobacco smoking in Australia.

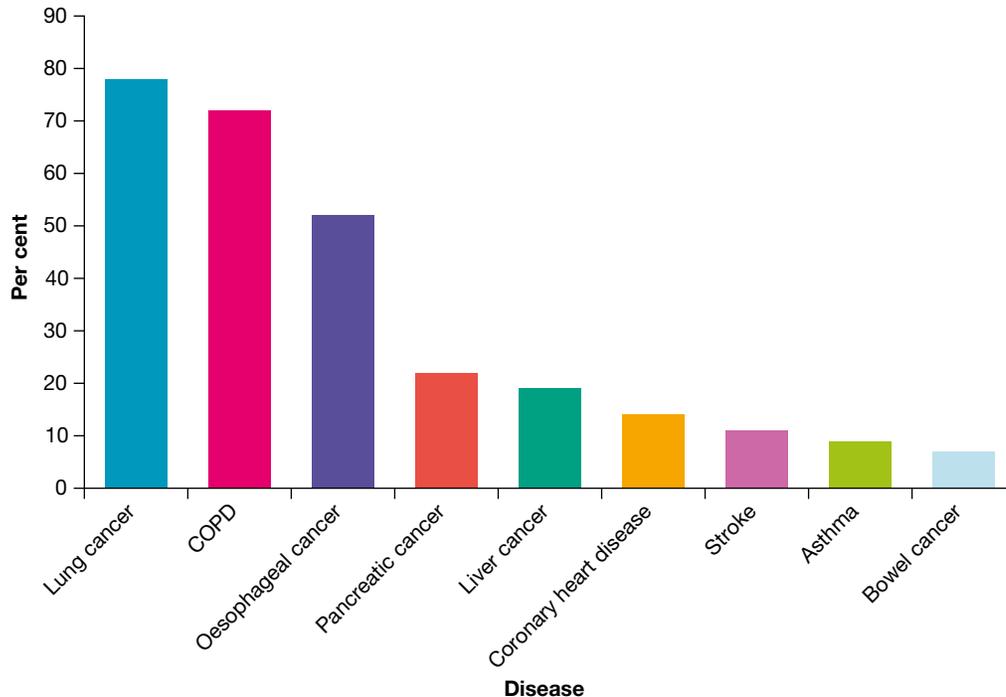


FIGURE 3.4 With more than 4000 chemicals in each cigarette, smoking can lead to any of these conditions and effects.



The burden of disease attributable to specific conditions as a result of tobacco use is shown in **FIGURE 3.5**.

FIGURE 3.5 Burden (%) attributable to tobacco use, selected conditions, 2015



Source: AIHW 2016, *Australian burden of disease study: impact and causes of illness and death in Australia 2015*.

Smoking and cardiovascular disease

Nearly 20 per cent of all smoking-related burden of disease is due to cardiovascular disease. Tobacco smoke reduces the amount of oxygen in the blood, contributing to increased blood pressure and heart rate. As well as increasing blood pressure, chemicals in tobacco smoke speed up the process of **atherosclerosis**, which significantly increases the risk of heart attack and stroke and contributes to higher mortality rates from these conditions. Chemicals in tobacco smoke also thicken the blood, making it sticky and more likely to form blood clots. A blood clot is a clump of blood that is required to stop bleeding in the body, but can also block blood vessels and restrict blood flow to various parts of the body including the heart and brain.

Smoking and cancer

Tobacco smoke can cause a fault in body cells as they divide. This can lead to a tumour and, ultimately, cancer. These faults can be caused in many parts of the body, making tobacco smoking the most preventable risk factor for cancer and cancer-related deaths in Australia. In 2015, tobacco use was responsible for almost 80 per cent of lung cancer DALY, around half of the total burden of oesophageal cancer (52 per cent) and nearly a quarter of liver cancer (22 per cent) burden.

Smoking and prenatal/infant health outcomes

Tobacco use during pregnancy reduces blood flow to the baby, which in turn reduces the amount of nutrients available for optimal development and growth, increasing the risk of having a baby with low birth weight. Babies born with a low birth weight (under 2.5 kilograms) are more likely to have an underdeveloped immune system, making them more susceptible to infections. They are also more likely to suffer from premature death, which contributes to the infant and under-five mortality rates. Low birth weight is a leading contributor to burden of disease for those aged 0–14 in Australia.

Atherosclerosis the build-up of plaque on blood vessel walls, making it harder for blood to get through

Smoking and asthma

Exposure to tobacco smoke in early life (including in the uterus) increases the risk of developing asthma.

Asthma causes the muscles in the airways to tighten and the lining of the airway becomes swollen and inflamed, producing sticky mucous. These changes cause the airways to become narrow, making it difficult to breathe. For those who experience asthma, exposure to tobacco smoke increases the risk of suffering an asthma attack and can make the symptoms more difficult to control, therefore impacting on health status. In 2015, around 10 per cent of the total asthma burden occurred as a result of tobacco smoking, mainly as a result of non-fatal outcomes.

FIGURE 3.6 Exposure to tobacco smoke in early life increases the risk of developing asthma.



Smoking and respiratory disease

Tobacco smoke damages the airways, which contributes to a number of respiratory conditions including chronic obstructive pulmonary disease (COPD). COPD was the fourth leading cause of premature death for males and females in 2019 (ABS, 2020). COPD includes chronic bronchitis and emphysema and is characterised by reduced airflow into the lungs and limited ability to utilise oxygen due to damaged lung tissue. Tobacco smoke contributes to this condition by causing inflammation of the airways and destroying the air sacs in the lungs, where gas exchange occurs. In 2015, tobacco use was responsible for 72 per cent of the DALY attributed to COPD.

Smoking and infectious disease

Exposure to tobacco smoke can lower immune function and increase the risk of contracting infectious diseases such as upper respiratory tract infections and pneumonia. Children exposed to tobacco smoke can be particularly susceptible to infections that contribute to morbidity rates and YLD among younger age groups.

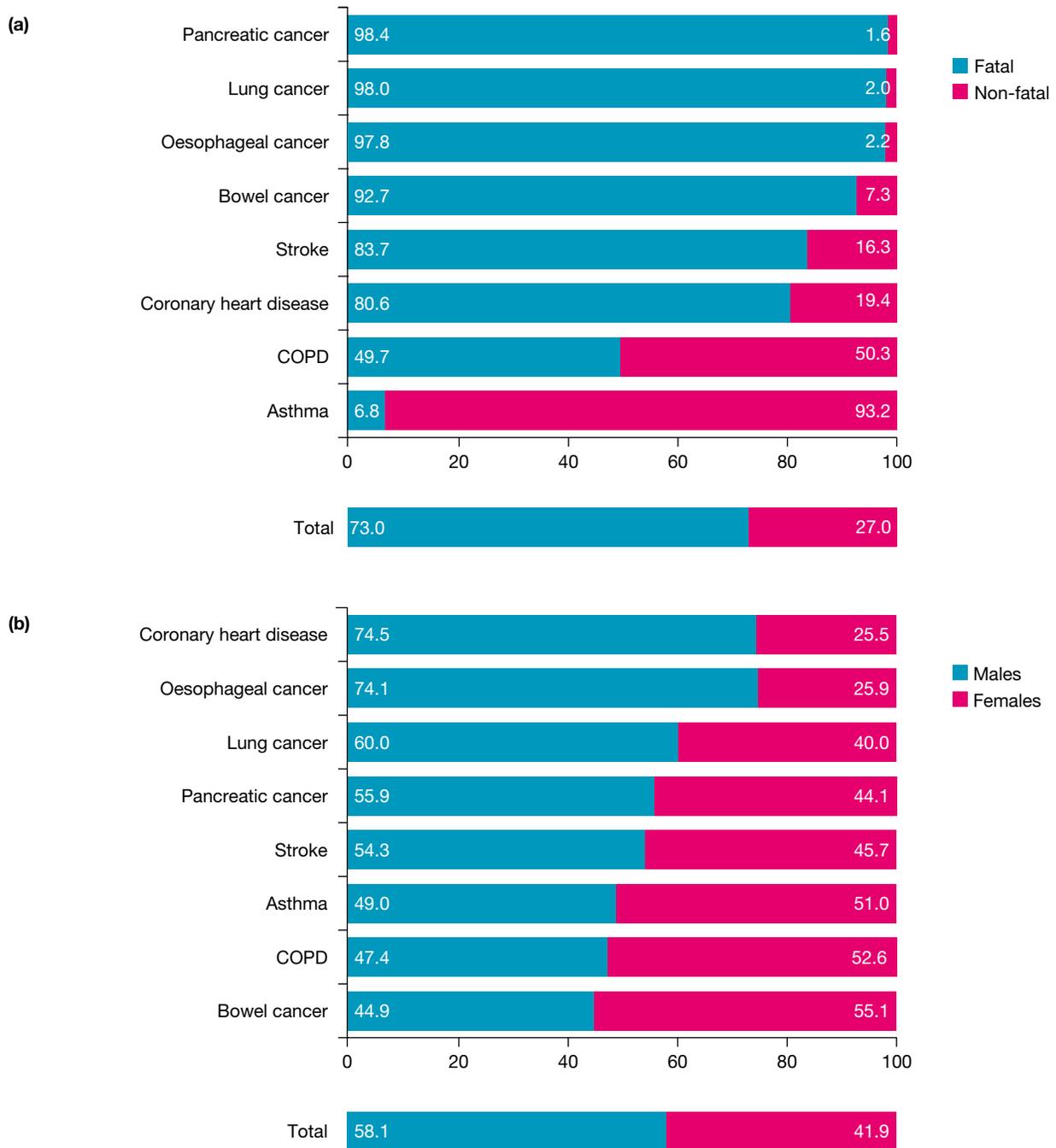
Smoking and the Australian Burden of Disease Study

Across all diseases, almost 75 per cent of the total burden attributable to tobacco use was due to premature mortality (YLL), impacting significantly on mortality rates, health-adjusted life expectancy and life expectancy.

Some diseases caused by tobacco use are more likely to lead to death than others. For example, over 97 per cent of the attributed pancreatic, lung and oesophageal cancer burden was due to fatal outcomes (see **FIGURE 3.7A**), whereas over 90 per cent of the attributable burden due to asthma was through non-fatal outcomes.

Almost 60 per cent of the disease burden attributed to tobacco was experienced by males (see **FIGURE 3.7B**), reflecting the fact that males used to smoke at significantly higher rates than females and are still experiencing more ill health as a result, even though the rates of smoking are more similar now.

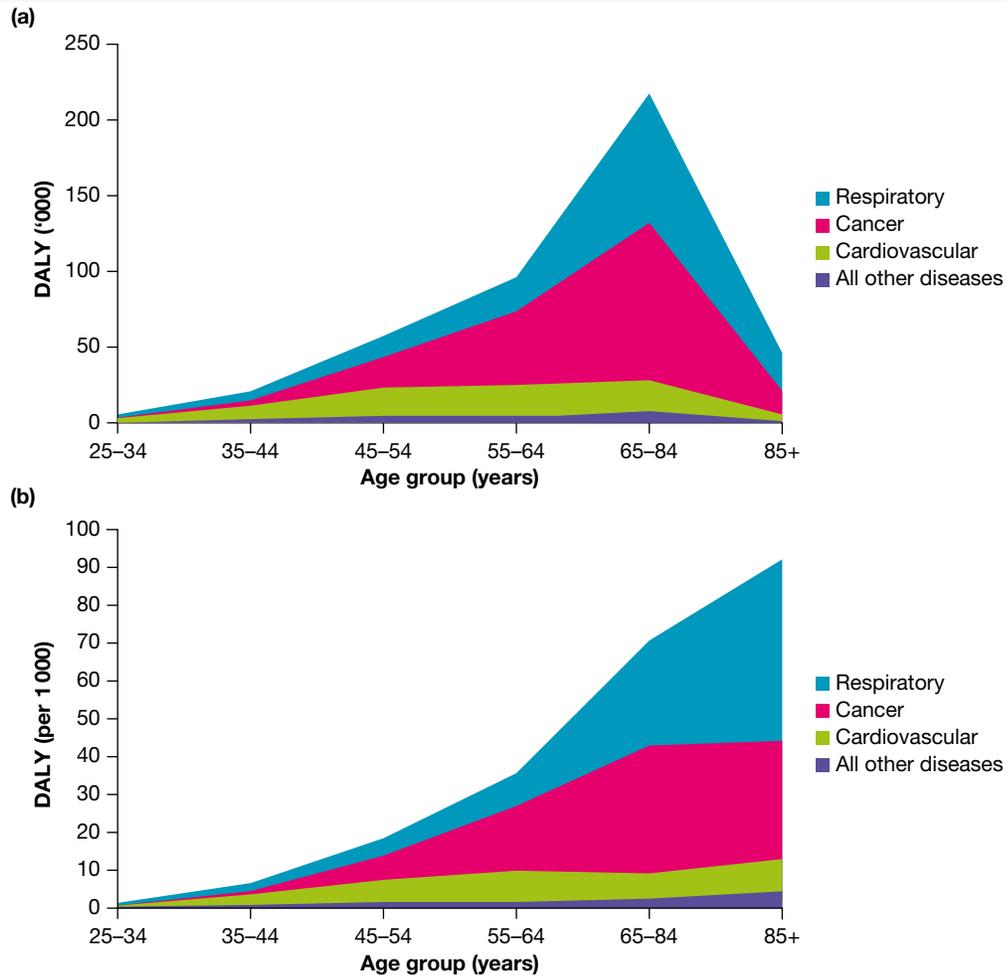
FIGURE 3.7 Proportion (%) of burden attributable to tobacco use (top eight diseases), by fatal versus non-fatal burden (a) and sex (b), 2015



Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

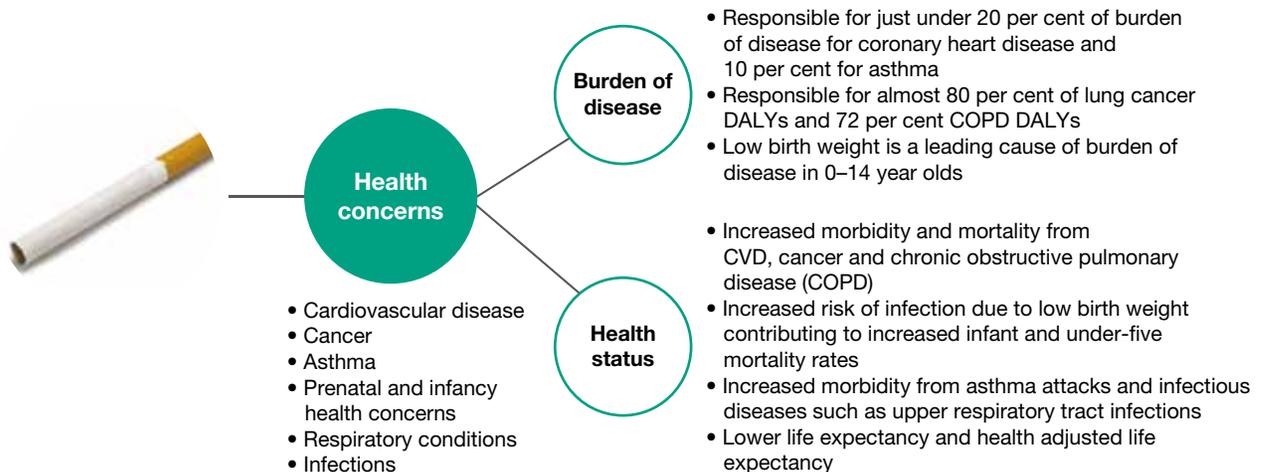
FIGURE 3.8A shows the burden of disease attributed to tobacco in people aged 25 and over, reflecting the ages at which most of the burden due to tobacco was experienced in the population. Cancers contributed almost 50 per cent of the disease burden attributed to tobacco between ages 55 and 84. Cardiovascular diseases were the largest contributor to the smoking burden below age 45 and respiratory diseases were responsible for the majority in ages 80 and over. When the structure of the population is taken into account, the rate of DALY per 1000 people provides another way to view the impact of tobacco smoking on various age groups (see **FIGURE 3.8B**).

FIGURE 3.8 Burden attributable to tobacco use according to disease and age group, by total DALY (a) and rate per 1000 people (b), 2015



Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

FIGURE 3.9 Summary of the impact of smoking on health status and burden of disease



3.2 Activity

Access the **Smoking** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

-  **Digital document** Smoking worksheet (doc-32190)
-  **Weblink** Smoking

3.2 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

3.2 Quick quiz

on

3.2 Exercise

3.2 Exam questions

Select your pathway

■ LEVEL 1

1, 2

■ LEVEL 2

3, 4, 5, 6, 7

■ LEVEL 3

8, 9

Test your knowledge

- According to **FIGURE 3.2**, which two factors contributed the most to burden of disease in Australia?
 - How much of the total burden was each responsible for?
- What is meant by 'smoking'?
 - Which substance is most likely to be smoked in Australia?
- Describe two ways that tobacco smoking contributes to disease.
- Explain why males experience a greater burden of disease related to tobacco given that the rates of smoking between males and females are now similar.

Apply your knowledge

- Explain how further reducing tobacco use could impact:
 - the burden of disease
 - the under-five mortality rate.
- Use **FIGURE 3.7** to answer the following questions.
 - What proportion of the total burden due to tobacco use was the result of fatal outcomes?
 - Which disease had an almost equal fatal and non-fatal contribution from tobacco use?
 - What proportion of the total burden of tobacco was experienced by males compared to females?
 - Identify the condition from which males experienced the greatest proportion of total burden due to tobacco use compared to females.
- Use **FIGURE 3.8** to answer the following questions.
 - Which age group contributed the most DALY as a result of tobacco? How many DALY were contributed by this group as a result of tobacco use?
 - Identify the disease group that contributed the most DALY for 35–44 year olds.
 - Using data, outline the relationship between increasing age and the rate of respiratory diseases caused by tobacco use.
- Outline two ways that reducing tobacco use could act as a resource nationally.
- Draw a flow chart showing two ways that smoking contributes to each of health status and burden of disease.

Question 1 (3 marks)

Tobacco smoking is the leading preventable risk factor for disease in Australia.

Describe three ways tobacco smoking impacts on the health status of Australians.

Question 2 (1 mark)

Identify the diseases that tobacco smoking is a risk factor for.

More exam questions are available in your learnON title.

3.3 Alcohol

KEY CONCEPT Understanding the contribution of alcohol to Australia's health status and burden of disease

Alcohol consumption has been a part of human life for thousands of years. Many cultures consume alcohol at social gatherings and it can form an integral part of ceremonies, customs and rites of passage. In moderation, alcohol has minimal side effects. Red wine in moderation may actually have benefits for cardiovascular health.

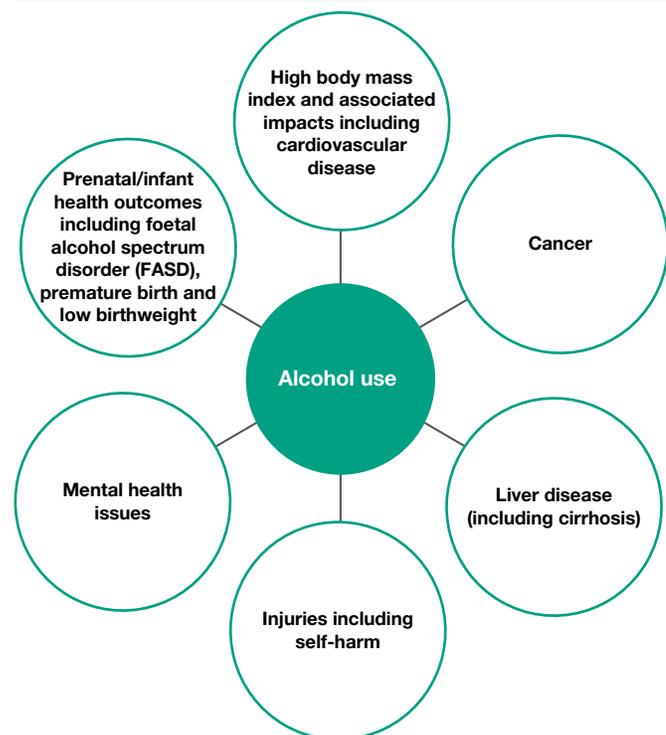
3.3.1 Alcohol and alcohol use disorders

Alcohol misuse relates to the excessive consumption of alcohol and includes alcoholism and binge drinking. Alcohol misuse over a period of time can indicate the presence of an alcohol use disorder — a disease characterised by ongoing risky alcohol consumption.

Alcoholism is when a person can't stop drinking once they have started, or has a constant desire to drink alcohol. Binge drinking in Australia is defined as consuming more than four standard drinks in one sitting. Alcoholism is more likely to contribute to chronic conditions in the long term such as liver disease, whereas binge drinking often results in health concerns in the short term such as road accidents, injuries, drownings and violence. An alcohol use disorder is not required for negative health outcomes to occur as a result of alcohol consumption. Binge drinking on one occasion may not necessarily mean the presence of an alcohol use disorder, but still increases the risk of negative health outcomes.

Alcohol use disorders and alcohol misuse can affect health and wellbeing in a number of ways (see **FIGURE 3.10**) and significantly contributes to health status and burden of disease in Australia.

FIGURE 3.10 Some of the effects of excessive alcohol consumption



According to the AIHW (2020), around 17 per cent of people aged 18 and over had consumed alcohol at levels that put them at risk of long-term harm and around 1 in 4 (26 per cent) consumed alcohol that put them at short-term harm at least monthly.

Alcohol and high body mass index

Alcohol contains kilojoules and therefore energy, which means it can increase the chances of an individual gaining weight. Over a period of time, alcohol use can contribute to a person becoming overweight or obese. Obesity is itself a risk factor for a range of other conditions such as type 2 diabetes, cardiovascular disease and some cancers.

Alcohol and cancer

There is strong evidence that alcohol use increases the risk of a range of cancers including cancer of the mouth, throat, stomach, bowel, liver and breast. The risk of developing cancer as a result of alcohol use is largely influenced by the amount of alcohol the person drinks, regardless of their body weight. Cancers are the leading cause of premature death in Australia, affecting mortality rates, DALY and life expectancy.

Alcohol and liver disease

Alcohol is filtered through the liver. Excessive consumption can cause scarring of the liver tissue, which can lead to the liver not functioning properly and toxins remaining in the body. Over time, this can lead to chronic liver diseases such as cirrhosis of the liver.

Alcohol and injuries

The behaviour of those affected by alcohol can change, putting a strain on relationships and increasing the risk of mental health issues such as depression and associated outcomes including suicide and self-harm. Those under the influence of alcohol are also more likely to act impulsively and take risks such as drink driving and displaying aggression, which increases morbidity and mortality from of injuries and violence.

Judgement and motor control are affected by alcohol use. As a result, falls and road traffic injuries are a significant cause of burden of disease attributable to alcohol use.

FIGURE 3.11 Car crashes are much more likely when the driver has been consuming alcohol.



Alcohol and mental health issues

Although there is a relationship between problem drinking and mental health and wellbeing (with problem drinkers more likely to have mental health issues and vice versa), the causal factor (mental illness or drinking) has not been established. Alcohol is a depressant, and some studies suggest that people with depressive symptoms are more likely to misuse alcohol and develop alcohol dependence in their younger years. Regardless of the cause of the relationship, alcohol use is associated with greater risk of suicide and self-inflicted injuries.

Alcohol and prenatal infant health outcomes

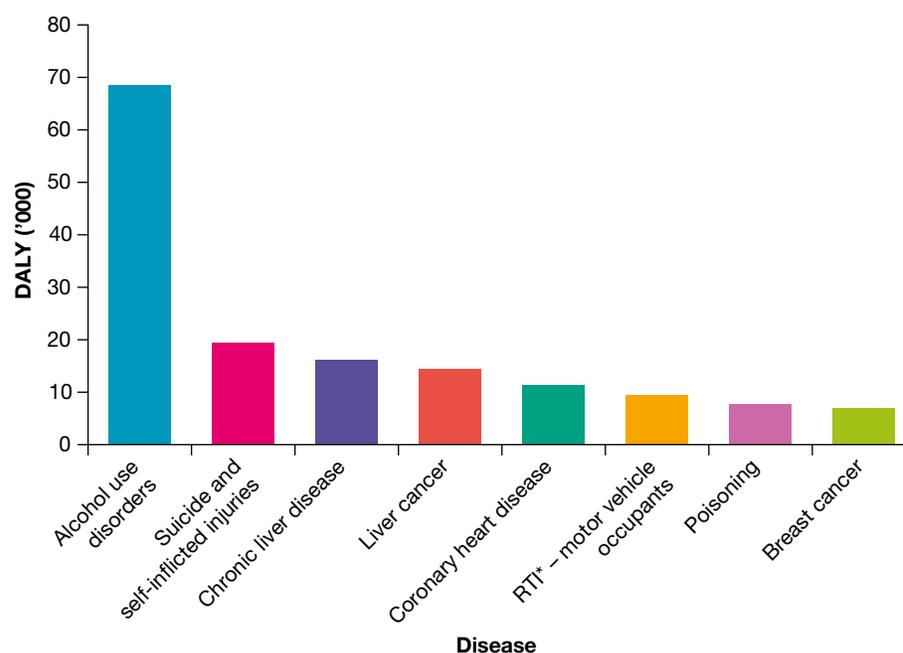
Alcohol consumption while pregnant impacts health status in a number of ways, including increasing the risk of premature birth, low birth weight and foetal alcohol spectrum disorder (FASD). FASD is an umbrella term that describes a range of conditions that can occur in children exposed to alcohol before birth.

Alcohol and the Australian Burden of Disease Study

In 2015, alcohol use was responsible for 4.5 per cent of the total burden of disease and injury, making it a leading preventable risk factor in Australia.

Alcohol use contributed to the burden for a large number of diseases and injuries. It was responsible for the entire burden due to alcohol use disorders, 28 per cent of the burden due to road traffic injuries, 24 per cent of the burden due to chronic liver disease and 23 per cent of the burden due to suicide and self-inflicted injuries (see **FIGURE 3.12**).

FIGURE 3.12 Total DALY ('000) attributable to alcohol use, selected conditions, 2015



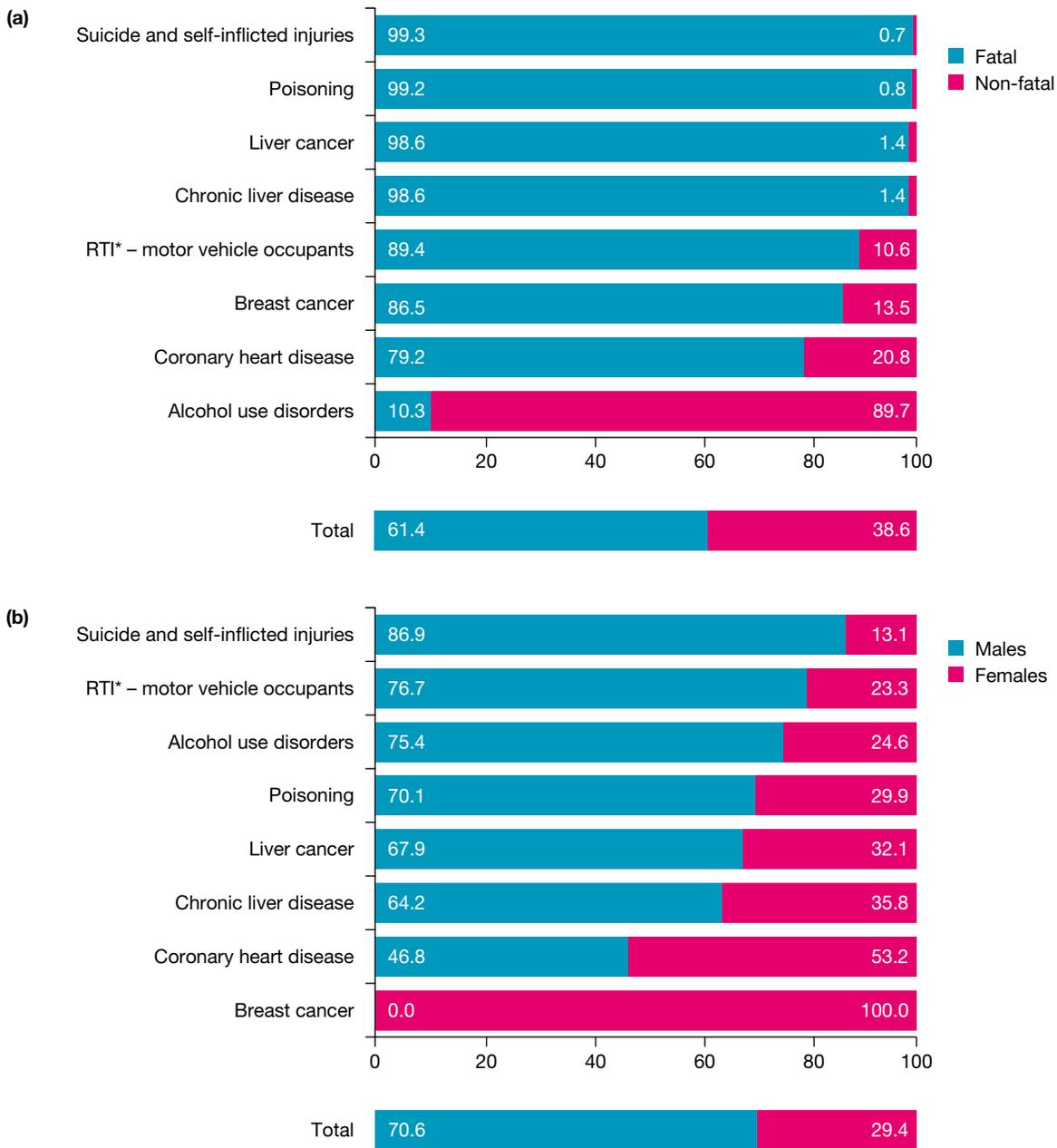
Note: * RTI = Road traffic injuries

Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

Of the burden attributable to alcohol consumption, around 61 per cent was due to fatal outcomes and around 39 per cent due to non-fatal outcomes (see **FIGURE 3.13A**). Some causes of burden of disease brought about by alcohol use are more likely to lead to death than others. For example, around 99 per cent of burden attributed to suicide and self-inflicted injuries, poisoning and liver cancer were due to fatal outcomes, whereas 90 per cent of the attributable burden due to alcohol use disorders were through non-fatal outcomes.

Overall, males experienced 71 per cent of the burden attributed to alcohol use. This proportion, however, was much higher in suicide and self-inflicted injuries (87 per cent) and poisoning (88 per cent), falls (86 per cent), road traffic injuries — motor vehicle occupants (78 per cent) and chronic liver disease (69 per cent). Females accounted for a much greater proportion of the stroke and coronary heart disease burden attributable to alcohol use (see **FIGURE 3.13B**).

FIGURE 3.13 Proportion (%) of burden attributable to alcohol use (top eight diseases), by fatal versus non-fatal burden (a) and sex (b), 2015

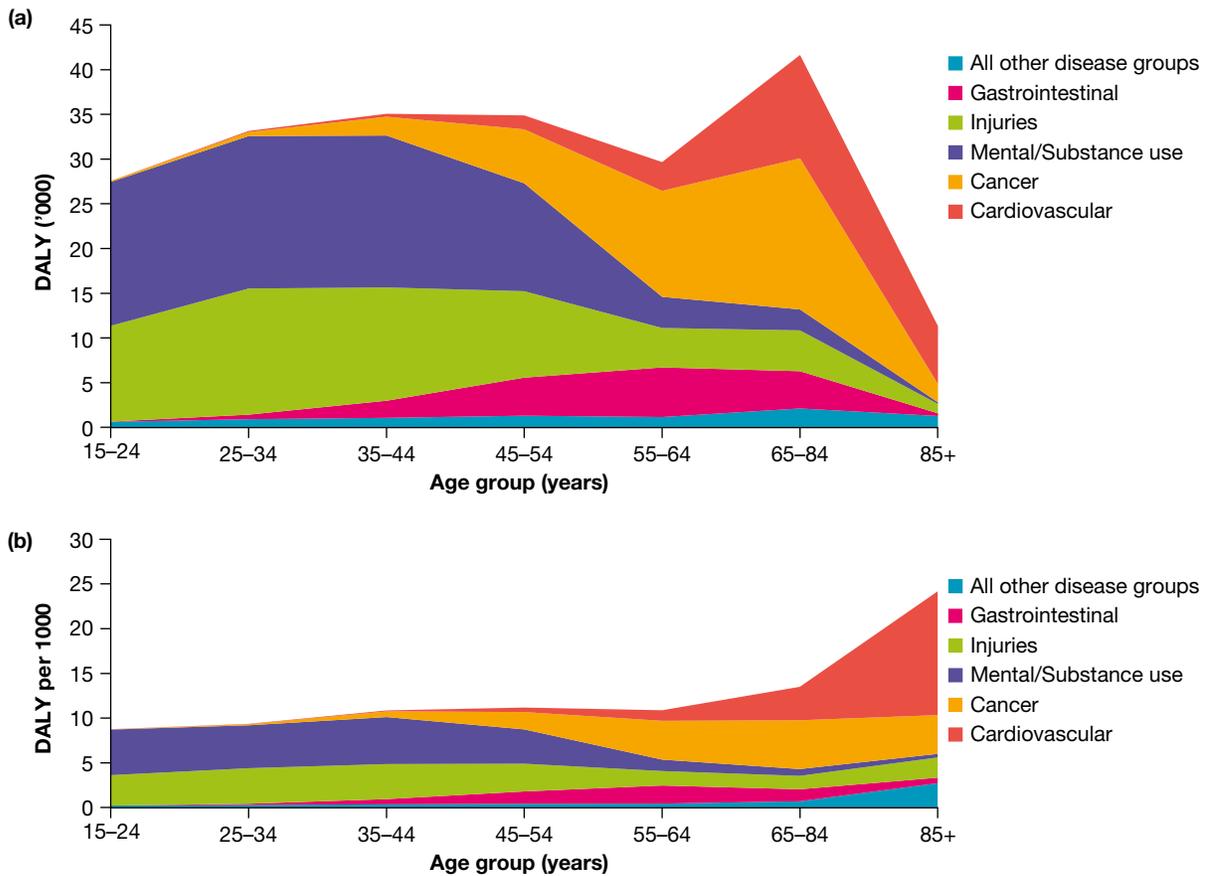


Note: * RTI = Road traffic injuries

Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>.

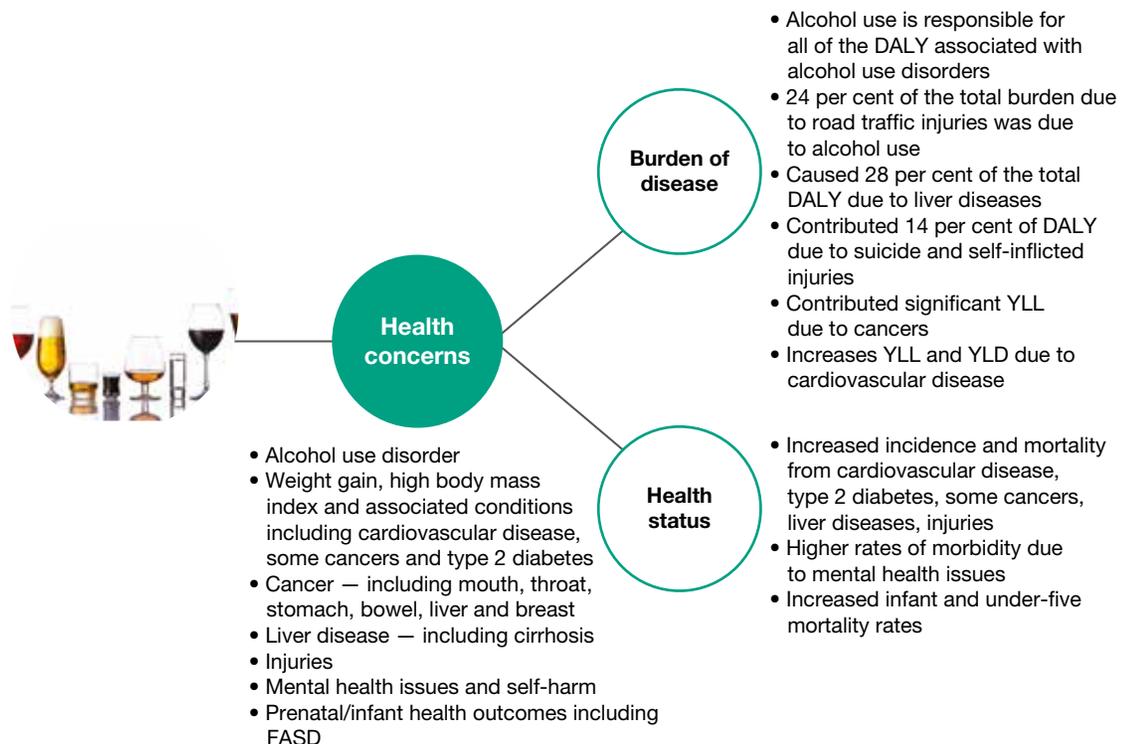
The burden attributed to alcohol differs across the lifespan (see **FIGURE 3.14**). After the age of 55, there is a significant decrease in the DALY attributed to alcohol use. Injuries and mental and substance use disorders contribute the majority of the burden up to the age of 55. After 55, the burden contributed by these conditions decreases and the burden attributed to cancer and cardiovascular disease increases.

FIGURE 3.14 Burden attributable to alcohol use according to disease and age group, by total DALY (a) and rate per 1000 people (b), 2015



Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

FIGURE 3.15 Summary of the impact of alcohol on health status and burden of disease



3.3 Activity

Access the **Impacts of alcohol** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital document** Impacts of alcohol worksheet (doc-32191)
-  **Weblink** Impacts of alcohol

3.3 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

3.3 Quick quiz

on

3.3 Exercise

3.3 Exam questions

Select your pathway

■ LEVEL 1

1, 2

■ LEVEL 2

3, 4, 5, 6, 7, 8

■ LEVEL 3

9, 10

Test your knowledge

1. Explain the difference between alcohol misuse and an alcohol use disorder.
2. Explain the difference between alcoholism and binge drinking.
3. Explain how alcohol can impact health and wellbeing in both the short and long term.
4. Explain how alcohol consumption can contribute to obesity.
5. Describe two ways that alcohol use contributes to disease.

Apply your knowledge

6. Explain how reducing alcohol use could impact:
 - a. the burden of disease
 - b. morbidity rates.
7. Use **FIGURE 3.13** to answer the following questions.
 - a. What proportion of the total burden due to alcohol use was the result of non-fatal outcomes?
 - b. For which disease was the fatal proportion of alcohol use the greatest?
 - c. What proportion of the total burden of alcohol was experienced by males compared to females?
 - d. Identify the condition from which males experienced the greatest proportion of total burden due to alcohol use compared to females.
8. Use **FIGURE 3.14** to answer the following questions.
 - a. Which age group contributed the most DALY as a result of alcohol? How many DALY were contributed by this group as a result of alcohol use?
 - b. Outline the difference in the diseases contributing the alcohol-related rate of DALY (per 1000) for 15–24 year olds compared to 85+ year olds.
9. Explain how reducing alcohol use could act as a resource for individuals.
10. Draw a flow chart showing two ways that alcohol use contributes to each of health status and burden of disease.

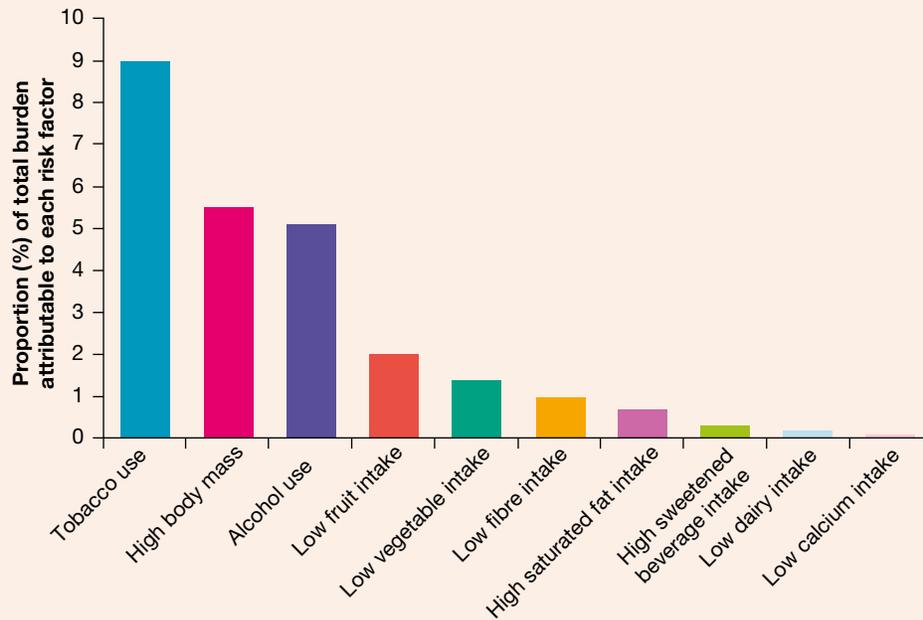
Question 1 (2 marks)

In 2015, alcohol use was responsible for 4.5 per cent of the total burden of disease and injury in Australia.

Describe how reducing alcohol use could decrease the burden of disease in Australia.

Question 2 (2 marks)

Review the data in the graph.



Source: Adapted from AIHW 2016, *Australian burden of disease study: impact and causes of illness and death in Australia 2011*, page 57.

What proportion of total burden of disease is attributed to tobacco and alcohol use?

More exam questions are available in your learnON title.

3.4 High body mass index

KEY CONCEPT Understanding the contribution of high body mass index to Australia's health status and burden of disease

Body mass relates to the amount of body weight an individual is carrying. Generally, assessments about body mass are made using the **body mass index (BMI)** and waist circumference measurements.

Body mass index (BMI) a statistical measure of body mass calculated by dividing weight (in kilograms) by height (in m²)

BMI provides a height-to-weight ratio and is calculated using the following formula:

$$\text{BMI} = \frac{\text{Weight (kg)}}{[\text{Height (m)}]^2}$$

So, for someone who is 182 centimetres tall and weighs 88 kilograms:

$$\begin{aligned}\text{BMI} &= \frac{88 \text{ (kg)}}{[1.82 \text{ (m)}]^2} \\ &= \frac{88}{3.31} \\ &= 26.6\end{aligned}$$

The BMI score of adults is compared to classifications to determine whether an individual is considered underweight, in the healthy weight range, overweight or obese. These figures are shown in **TABLE 3.1**.

High body mass index refers to a weight that is above a healthy range (i.e. 25 and above). People with a high BMI are classified as either overweight or obese.

However, BMI doesn't take fat distribution into account. Research has shown that those with a higher proportion of abdominal fat are more at risk of disease and illness compared to those with a lower proportion of abdominal fat. For this reason, waist circumference is increasingly being used as an indicator of the health risks associated with high body mass. Although waist circumference is being used more often, BMI remains a useful indicator, especially for populations and groups, and is the measure used by the Australian government to determine high body mass.

High body mass index is of particular concern in Australia as rates have been increasing steadily over time. According to the ABS *National Health Survey*, for Australian adults 18 years and over, the prevalence has increased over time from 56.3 per cent in 1995 to 67 per cent in 2017–18 (see **FIGURE 3.16**). For Australian children, there has been an increase in the proportion of 5–17 year olds who were overweight or obese since 1995, with around 25 per cent of children classified overweight or obese in 2017–18.

High body mass index can increase the risk of a number of conditions as outlined below.

High body mass index and cardiovascular disease

High body mass index usually means there is a greater strain on the heart, which increases the risk of **hypertension**, heart attack and stroke. High body mass index can also mean **cholesterol** levels are elevated, which increases the rate of atherosclerosis and the risk of cardiovascular disease. High body mass also increases the risk of an irregular heartbeat. Two common types caused by high body mass are atrial fibrillation and atrial flutter.

High body mass index and cancer

There is a relationship between high body mass index and the rates of some cancers, including colorectal cancer and breast cancer.

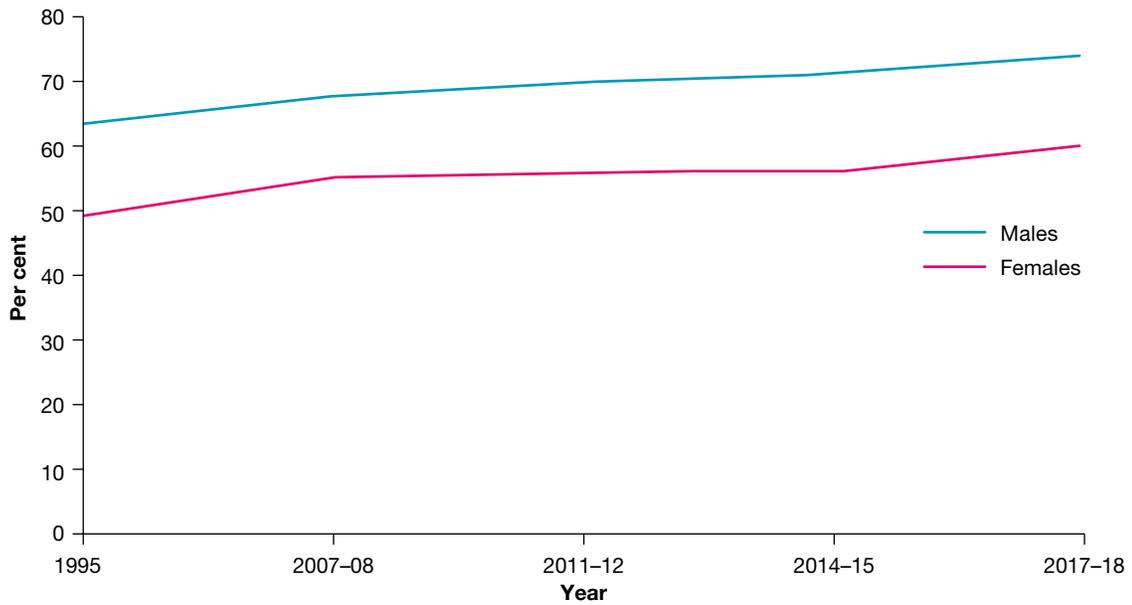
TABLE 3.1 BMI classifications for adults

BMI	Classification
Under 18.5	Underweight
18.6–24.9	Healthy weight
25–29.9	Overweight
30 and over	Obese

Hypertension high blood pressure

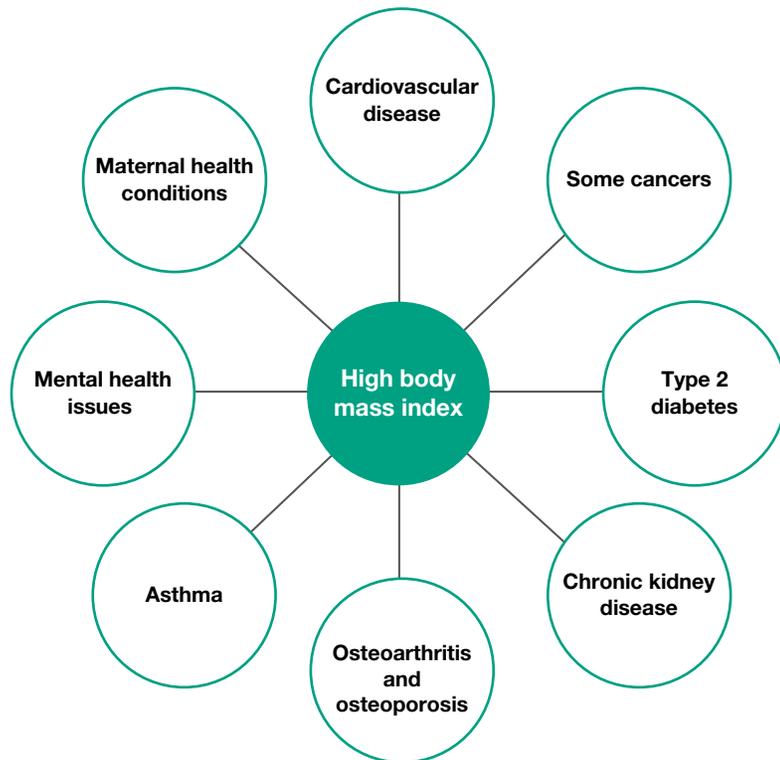
Cholesterol a type of fat required for optimal functioning of the body that in excess can lead to a range of health concerns including the blocking of the arteries (atherosclerosis). Can be 'bad' low-density lipoprotein (LDL) or 'good' high density lipoprotein (HDL).

FIGURE 3.16 Persons aged 18 years and over – proportion overweight or obese, 1995 to 2017–18



Source: ABS, National Health Survey: First Results, 2017–18.

FIGURE 3.17 High body mass index contributes to a range of health concerns.



High body mass index and kidney disease

High body mass index increases the risk of high blood pressure and type 2 diabetes, which are two significant risk factors for kidney disease.

High body mass index and type 2 diabetes

In type 2 diabetes the pancreas does not produce enough insulin, or the body cannot use the insulin effectively (known as insulin resistance). High body mass index is the greatest risk factor for type 2 diabetes. Type 2 diabetes used to be associated with adulthood, but increasing rates of high body mass index among children has seen rates increase in younger age groups.

High body mass index and arthritis and osteoporosis

High body mass index puts more pressure on joints, which can contribute to osteoarthritis, which is characterised by cartilage being worn down.

Cartilage usually cushions the joints

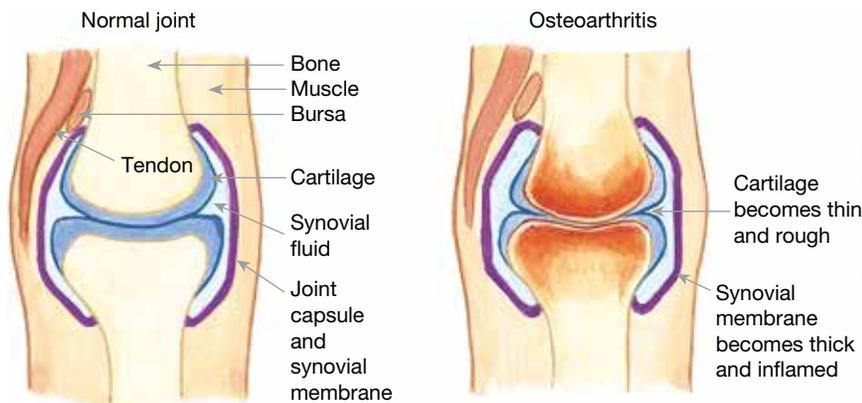
where bones meet. When cartilage wears down, bone rubs on bone, which causes pain and limited mobility. The most common sites for osteoarthritis are the knees, neck, lower back, hips and fingers. Osteoarthritis is usually a degenerative disease, meaning it becomes worse over time and often leads to reduced functioning such as the inability to write, walk or stand.

Current research also indicates that high body mass index can increase the risk of osteoporosis.

FIGURE 3.18 High body mass index is a major risk factor for cardiovascular disease, one of the leading causes of morbidity and mortality in Australia.



FIGURE 3.19 A normal joint and one affected by osteoarthritis



High body mass index and asthma

Children with a high body mass index have a greater risk of developing asthma than children with a healthy body mass.

High body mass index and mental health issues

High body mass index can contribute to conditions such as anxiety and depression. Children with high body mass index can be particularly susceptible to these conditions, thereby contributing significantly to morbidity and YLD among younger age groups.

High body mass index and maternal health conditions

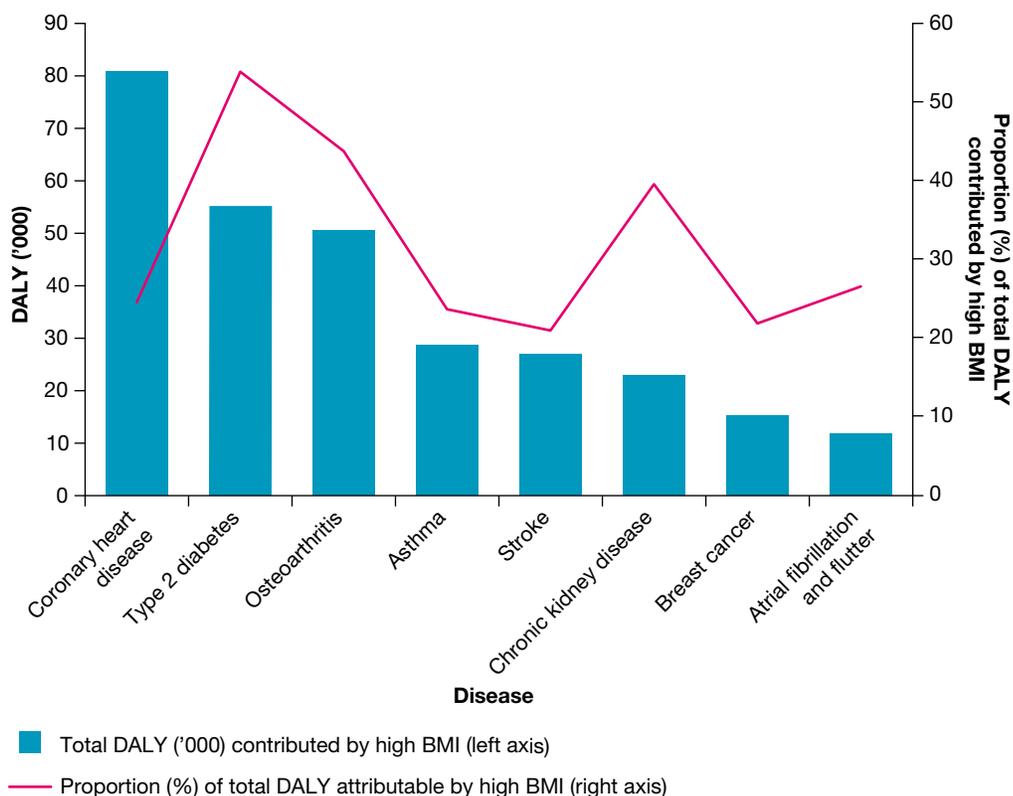
Pregnant women with high body mass index are more susceptible to a range of pregnancy-related conditions such as high blood pressure and gestational diabetes. High body mass index is also a risk factor for maternal mortality.

High body mass index and the Australian Burden of Disease Study

In 2015, high body mass contributed 8.4 per cent of all disease and injury burden in Australia, ranking as the second highest risk factor behind tobacco use. High body mass contributed to the burden for a number of diseases including around 80 000 DALY due to coronary heart disease, 55 000 DALY due to diabetes, 50 000 DALY due to arthritis and around 29 000 DALY due to asthma. In terms of the contribution of high body mass to the total DALY for certain conditions, it contributed to 54 per cent of the type 2 diabetes burden, 44 per cent of the osteoarthritis burden, 40 per cent of the chronic kidney disease burden and 25 per cent of the coronary heart disease burden (see **FIGURE 3.20**).

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FIGURE 3.20 Burden (%) attributable to high body mass, selected conditions, 2015

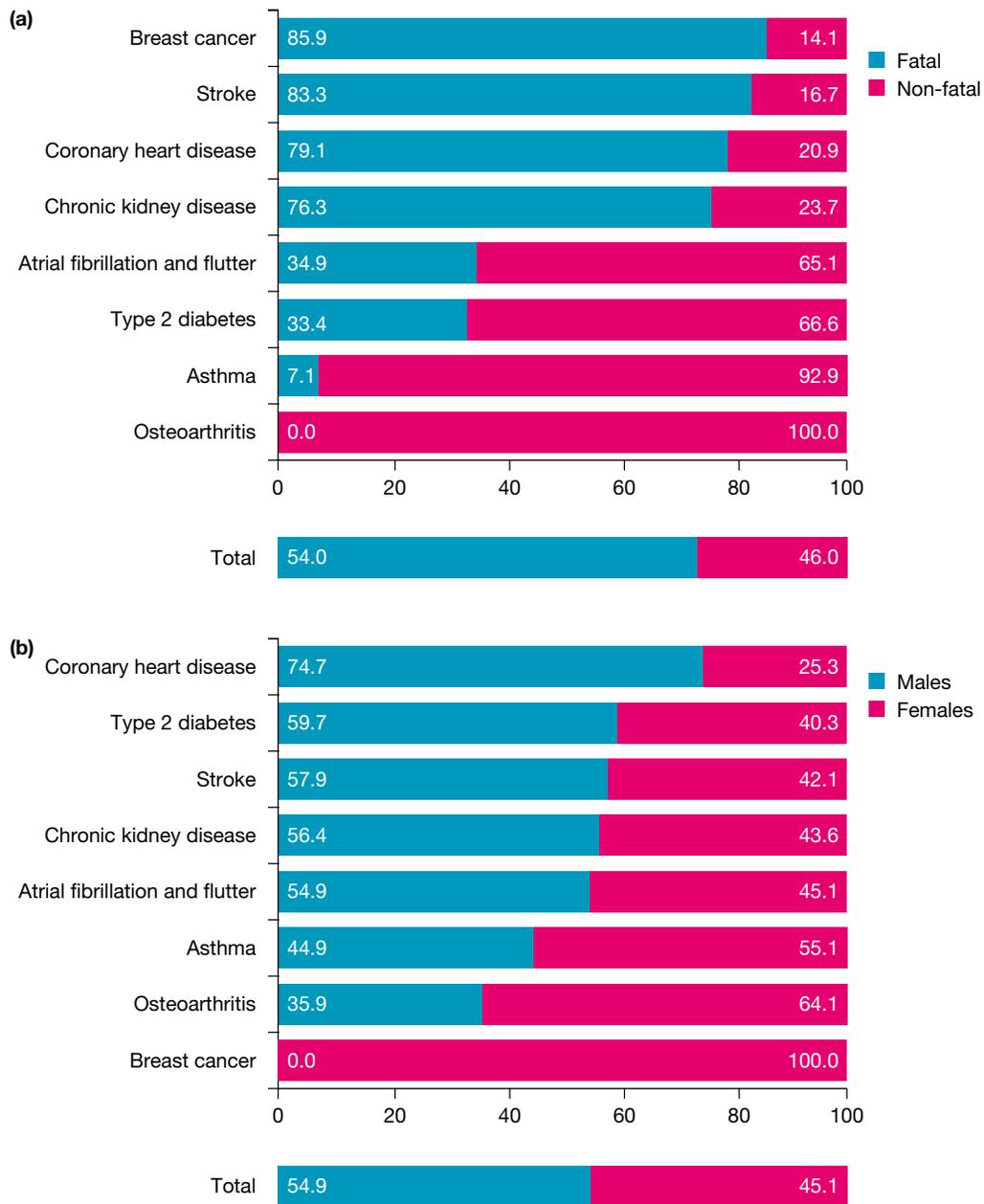


Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

Just over half (54 per cent) of the DALY attributable to high body mass was due to fatal outcomes (**FIGURE 3.21A**), therefore impacting life expectancy, mortality rates and YLL. Breast cancer, stroke, coronary heart disease and chronic kidney disease had a greater proportion of fatal burden, whereas atrial fibrillation and flutter, type 2 diabetes, asthma and osteoarthritis mainly had a non-fatal contribution.

Males experienced around 55 per cent of the burden due to high body mass (see **FIGURE 3.21B**) and made up a greater proportion of the burden for most conditions. This contributed to the difference in life expectancy and HALE between males and females.

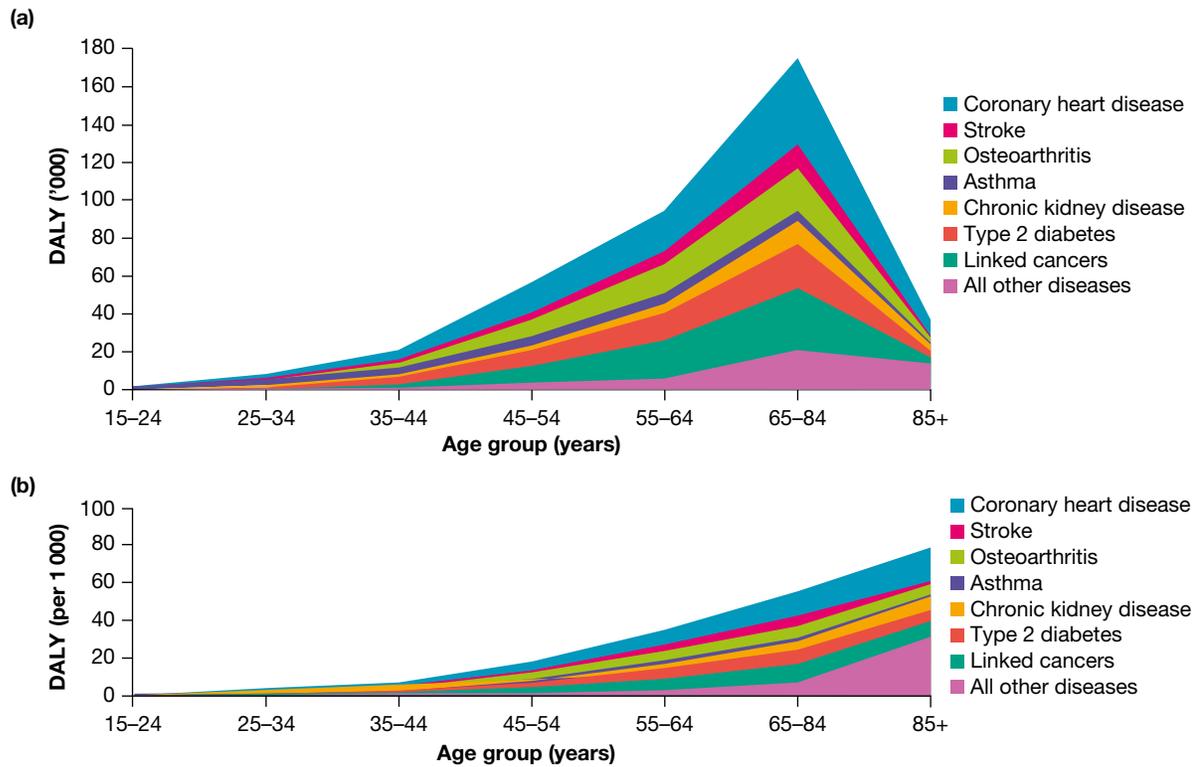
FIGURE 3.21 Proportion (%) of burden attributable to high body mass (top eight diseases), by fatal versus non-fatal burden (a) and sex (b), 2015



Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

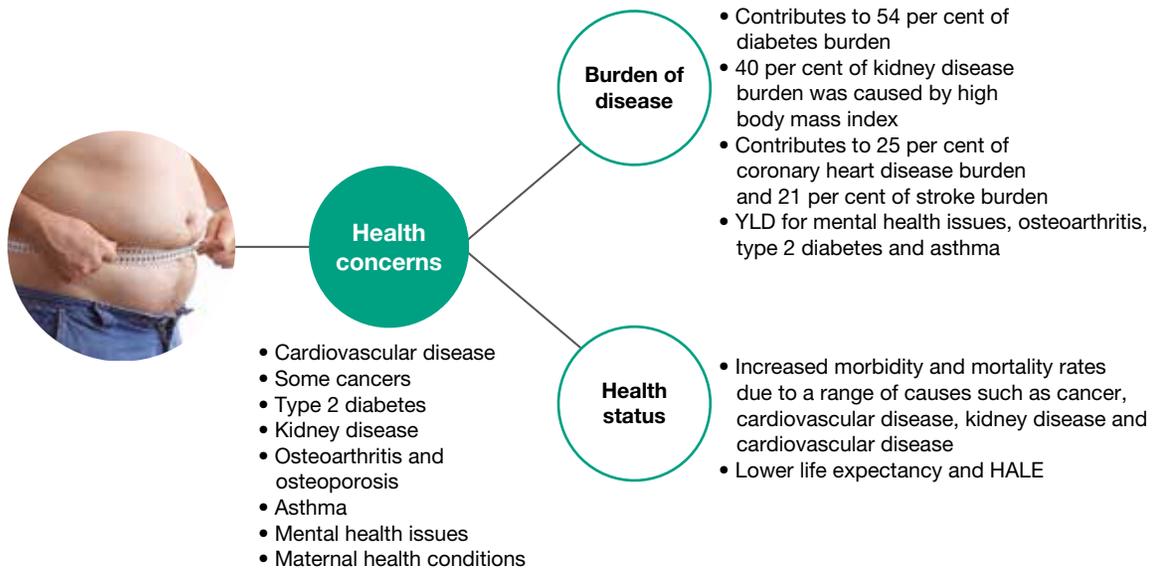
The diseases attributable to high body mass by age group are shown in **FIGURE 3.22**. The rate of burden due to high body mass increased with age.

FIGURE 3.22 Burden attributable to high body mass according to disease and age group, by total DALY (a) and rate per 1000 people (b), 2015



Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

FIGURE 3.23 Summary of the impact of high body mass index on health status and burden of disease



3.4 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

3.4 Quick quiz



3.4 Exercise

3.4 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4, 5, 6

■ LEVEL 2

7, 8, 9, 10, 11

■ LEVEL 3

12, 13, 14

Test your knowledge

1. Explain what is meant by BMI and how it is measured.
2. Which classification would individuals with the following BMI have?
 - a. BMI of 26
 - b. BMI of 30
 - c. BMI of 21
3. Describe two ways that high body mass index contributes to disease.
4. Explain two ways that high body mass index can impact the health status of children.
5. Outline the relationship between abdominal fat and disease.

Apply your knowledge

6. Explain two reasons why high body mass index is of particular concern in Australia.
7. Using data from **FIGURE 3.16**, draw two conclusions relating to overweight and obesity in Australia.
8. Explain how reducing body mass index could impact:
 - a. years of life lost (YLL)
 - b. morbidity rates.
9. Use **FIGURE 3.20** to answer the following questions:
 - a. Identify the disease for which high body mass contributed the most DALY. Approximately, how many DALY did high body mass contribute in relation to this disease?
 - b. Identify the disease for which high body mass contributed the highest proportion of total DALY. Approximately what proportion of DALY did high body mass contribute in relation to this disease?
10. Use **FIGURE 3.21** to answer the following questions:
 - a. What proportion of the total burden due to high body mass was the result of fatal outcomes?
 - b. For which disease was the fatal proportion of high body mass the greatest?
 - c. For which disease did females have the greatest proportion of burden of disease due to high body mass compared to males?
 - d. What proportion of the total burden of high BMI was experienced by females compared to males?
11. Use **FIGURE 3.22** to answer the following questions:
 - a. Describe the change in total DALY contribution between the ages of 25 and 85+.
 - b. Which disease group contributed the most to DALY for 65–84 year olds? Approximately how many DALY were contributed by this disease in this age group?
12. Ava is a seven-year-old who attends primary school. She has been steadily gaining excess weight over the previous two years and is now classified as obese. Discuss how Ava's weight could affect her social and emotional health and wellbeing.
13. Explain how reducing high body mass index could act as a resource nationally.
14. Draw a flow chart showing two ways that high body mass index contributes to each of health status and burden of disease.

3.4 Quick quiz



3.4 Exercise

3.4 Exam questions

Question 1 (2 marks)

Identify two impacts of a high body mass on health status.

Question 2 (1 mark)

Identify what people who have a BMI of 35 are considered to be.

Question 3 (2 marks)

Explain how body mass index may impact on the mental health and wellbeing of children.

Question 4 (1 mark)

Identify what people who have a body mass index (BMI) of 27 are considered to be.

Question 5 (4 marks)

Explain how a high body mass index increases the risk of cardiovascular disease and type 2 diabetes.

More exam questions are available in your learnON title.

3.5 Underconsumption of vegetables, fruit and dairy foods

KEY CONCEPT Understanding the contribution of underconsumption of vegetables, fruit and dairy foods to Australia's health status and burden of disease

Dietary risks have emerged as some of the most significant preventable risk factors impacting health status in Australia and collectively caused an estimated 7.3 per cent of total DALY in 2015. Of particular concern is:

- underconsumption of vegetables, fruit and dairy foods (subtopic 3.5)
- high intake of fat, salt and sugar (subtopic 3.6)
- low intake of fibre and iron (subtopic 3.7).

3.5.1 Underconsumption of vegetables

Vegetables are **nutrient dense**. They are high in minerals and vitamins (such as magnesium, vitamin C and folate), low in kilojoules, and high in dietary fibre and **antioxidants**.

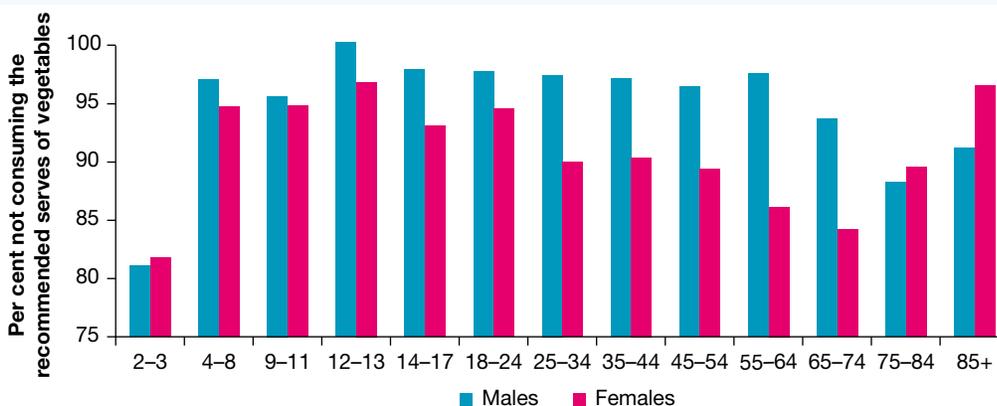
Eating a range of vegetables increases the variety and amount of vitamins and minerals consumed. Many of these nutrients promote adequate functioning of body systems, including immune system function, which can reduce the incidence of conditions such as cancer, cardiovascular disease and **neural tube defects**. Despite the many benefits of consuming vegetables, the majority of Australians do not consume the recommend amount (see **FIGURE 3.24**), increasing the rates and impacts of a range of conditions (see **FIGURE 3.25**).

Nutrient dense (foods) foods that contain a large amount of nutrients such as vitamins and minerals

Antioxidants compounds in foods that neutralise free radicals

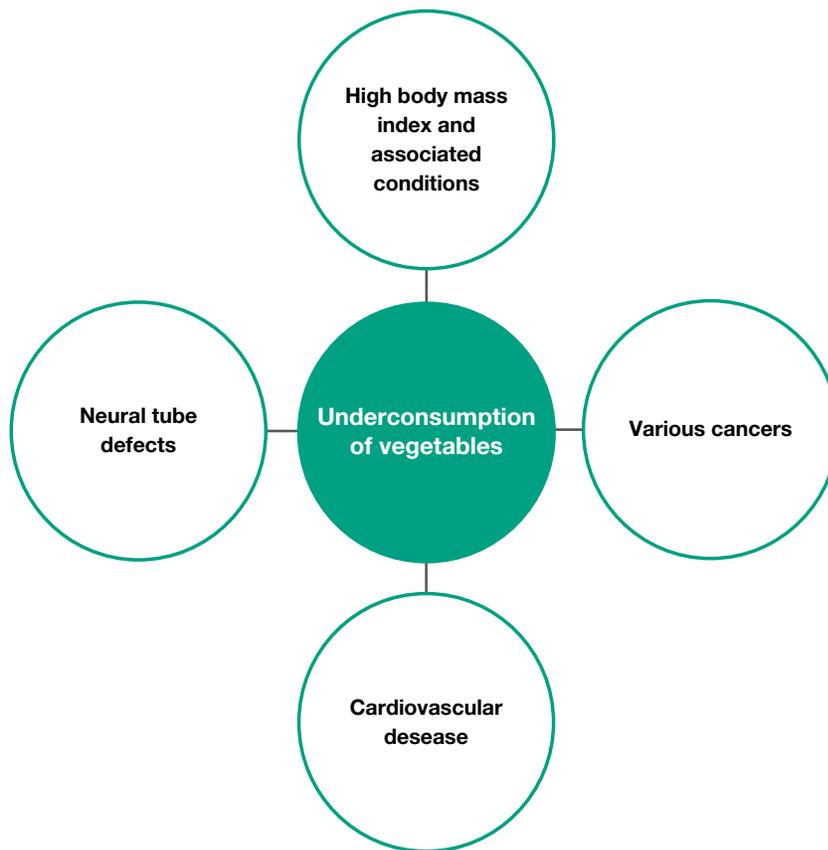
Neural tube defects conditions characterised by damage to the brain and spine, and to the nerve tissue of the spinal cord during prenatal development. Examples include spina bifida and anencephaly.

FIGURE 3.24 Underconsumption of vegetables according to age and sex



Source: Adapted from ABS, *National Health Survey: First Results, 2017-18* — Australia

FIGURE 3.25 Underconsumption of vegetables contributes to a number of health concerns.



Underconsumption of vegetables and high body mass index

As already discussed, high body mass index contributes significantly to burden of disease in Australia by increasing the risk of cardiovascular disease, type 2 diabetes, kidney disease and some cancers. Consuming vegetables instead of **energy dense** foods can assist with weight management and reduce the risk of high body mass index. Vegetables are also a rich source of fibre, which further assists in reducing the risk of weight gain and some cancers such as colorectal cancer. (The benefits of fibre will be explored in more detail in subtopic 3.7.) Underconsumption of vegetables is therefore a risk factor for high body mass index.

Underconsumption of vegetables and cardiovascular disease and cancer

Vegetables are also a source of antioxidants, which work to reduce the impact of **free radicals** in the body. Free radicals are molecules that can damage body cells and increase rates of morbidity and mortality due to conditions such as cardiovascular disease and cancer. The antioxidants in vegetables target free radicals and eliminate them from the body, thereby reducing the burden of disease associated with cardiovascular disease and cancer. Underconsumption of vegetables often means that antioxidant consumption is also low, increasing the risk of these conditions.

Energy dense (foods) foods that contain significant amounts of fat, carbohydrates and/or protein, therefore contributing large amounts of energy to the diet

Free radicals molecules formed when oxygen is metabolised. Free radicals can damage healthy body cells and increase the risk of diseases such as cardiovascular disease and cancer.

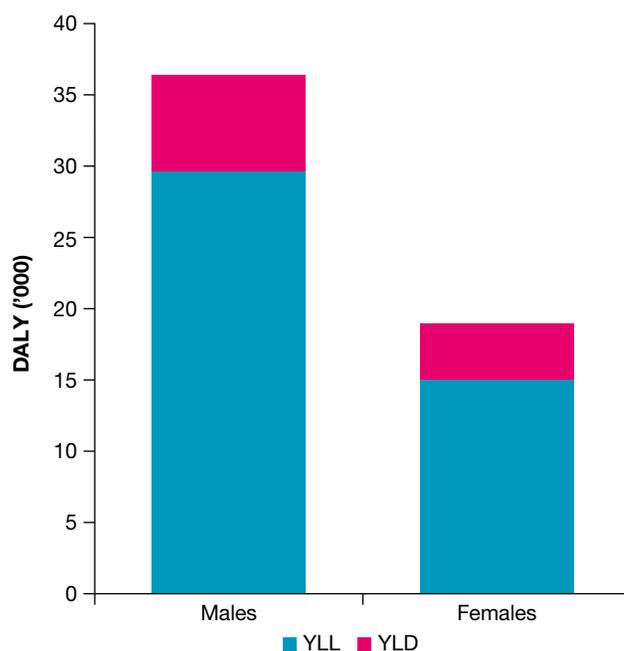
Underconsumption of vegetables and neural tube defects

Nutrients found in vegetables, such as folate, play a significant role in the development of the brain and spinal cord during the prenatal stage of the lifespan. Underconsumption of vegetables before and during pregnancy increases the risk of neural tube defects such as spina bifida, which contributes to mortality and morbidity in Australia, particularly among infants.

Underconsumption of vegetables and the Australian Burden of Disease Study

In 2015, a diet low in vegetables was responsible for 1.2 per cent of all the disease and injury burden in Australia. A diet low in vegetables was responsible for 14 per cent of the total burden associated with coronary heart disease and 8 per cent of the total stroke burden. Overall, low intake of vegetables contributed over 55 000 DALY through both fatal and non-fatal outcomes (see **FIGURE 3.26**).

FIGURE 3.26 YLL, YLD and total DALY contributed by low intake of vegetables according to sex



Source: AIHW 2019, *Australian burden of disease study: impact and causes of illness and death in Australia 2015*.

The fatal component was responsible for 81 per cent of the total burden attributable to a diet low in vegetables (see **FIGURE 3.27**).

FIGURE 3.27 Proportion (%) of burden attributable to low vegetable intake by fatal versus non-fatal burden, 2015

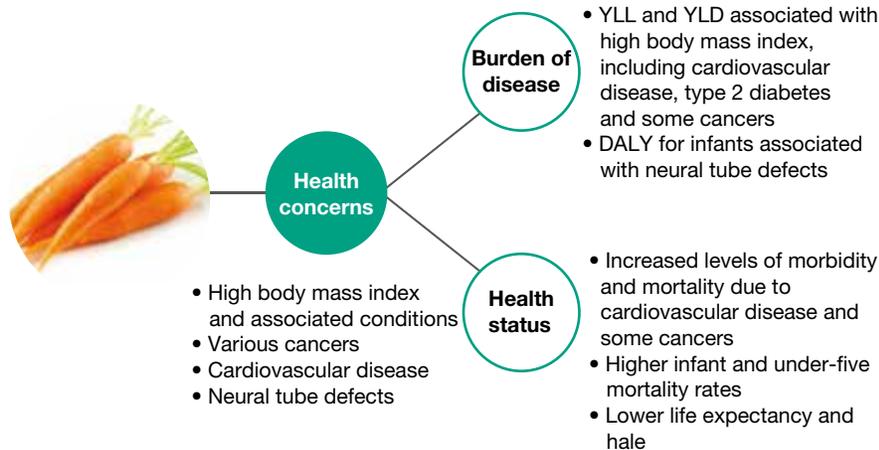


Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

FIGURE 3.28 Females are more likely to consume the recommended servings of vegetables than males.



FIGURE 3.29 Summary of the impact of underconsumption of vegetables on health status and burden of disease



3.5.2 Underconsumption of fruit

Like vegetables, fruits provide a range of essential nutrients including vitamins, minerals and fibre, while being low in fat and a good source of antioxidants. As a result, underconsumption of fruit reduces adequate function of body systems and increases the risk of conditions (see **FIGURE 3.30**). Although Australians of all ages are more likely to meet their daily recommended intake of fruit (see **FIGURE 3.31**) compared to vegetables, around half of the population do not consume enough fruit which contributes significantly to health status and burden of disease.

The greatest benefits occur when individuals consume a range of raw, whole fruits as these varieties provide the greatest amount and combination of nutrients. Fruit juice is often high in sugar and does not contain the same level of fibre as whole fruits and should therefore be consumed in moderation.

FIGURE 3.30 Underconsumption of fruit contributes to a number of health concerns.

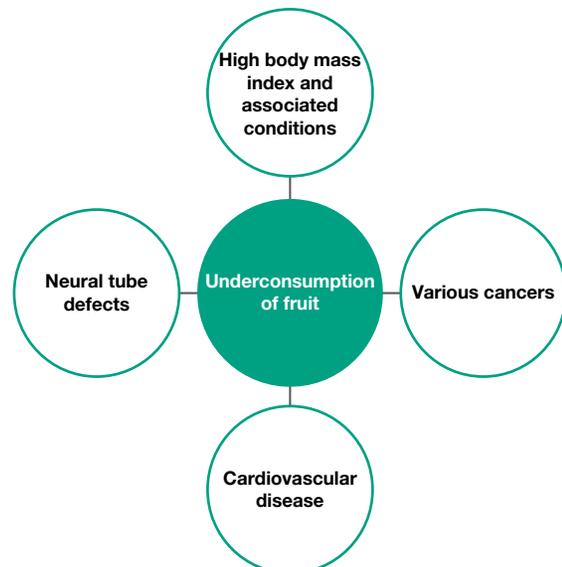
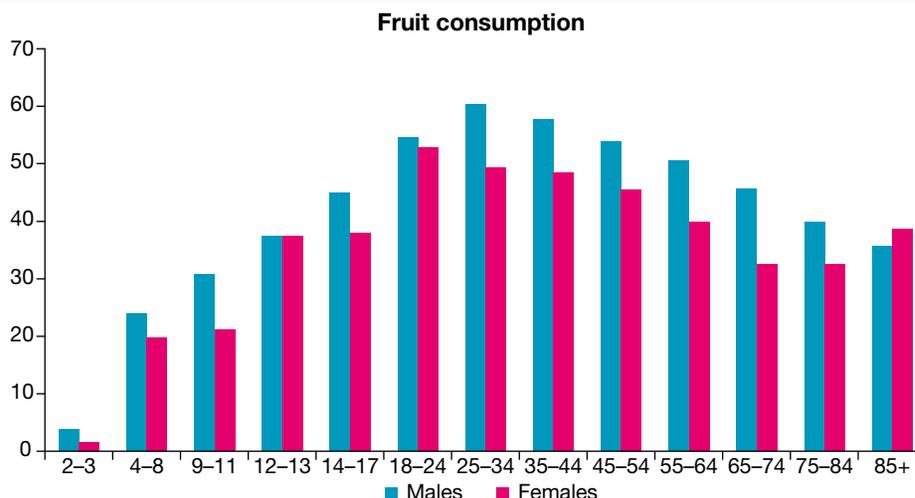


FIGURE 3.31 Underconsumption of fruit according to age and sex



Source: Adapted from ABS, *National Health Survey: First Results, 2017–18 — Australia*

Underconsumption of fruit and high body mass index

People who eat adequate amounts of fruit are likely to feel full for longer and are therefore less likely to consume energy dense foods. This assists in protecting against weight gain, high body mass index and associated conditions such as cardiovascular disease, type 2 diabetes and some cancers. Conversely, underconsumption increases the risk of these conditions.

Underconsumption of fruit and cardiovascular disease, cancers and neural tube defects

By containing relatively high amounts of nutrients including vitamins, minerals and fibre, while being low in fat and a good source of antioxidants, fruit plays similar roles in the body as vegetables. As a result, underconsumption of fruit also increases the risk of conditions such as cardiovascular disease, cancers and neural tube defects.

Underconsumption of fruit and the Australian Burden of Disease Study

In 2015, underconsumption of fruit was responsible for 1.4 per cent of all the disease and injury burden in Australia. Specifically, underconsumption of fruit was responsible for around 45 000 DALY due to cardiovascular disease, 13 500 DALY due to cancer and 7500 due to type 2 diabetes, with males contributing more DALY than females for all disease groups (see **FIGURE 3.33**).

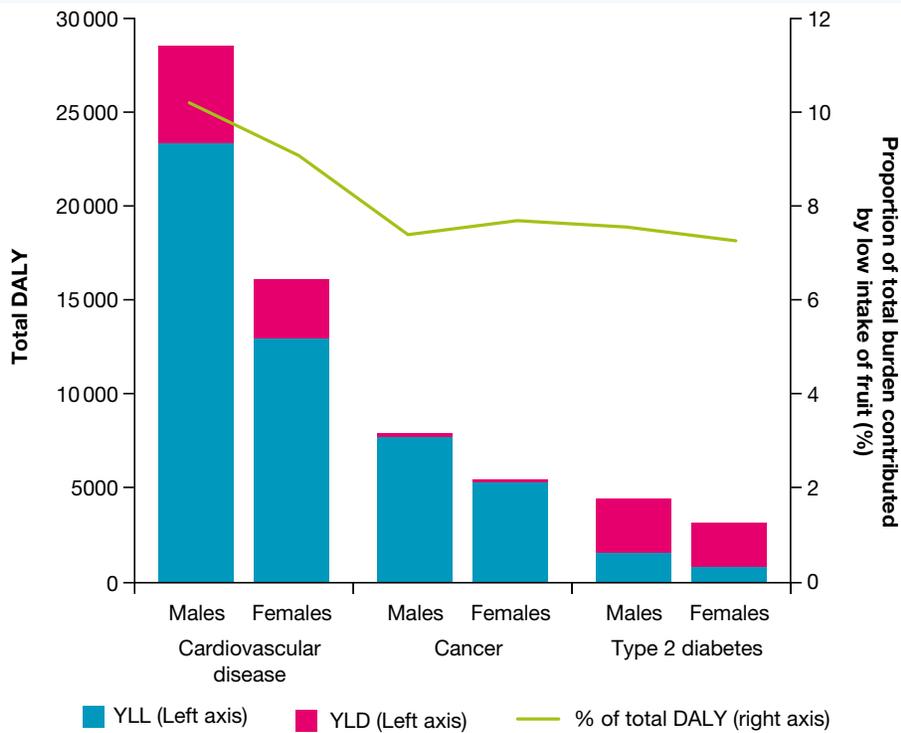
Overall, almost 80 per cent of the attributable burden of a diet low in fruit was due to fatal burden. Most diseases caused by low fruit intake had a significantly higher proportion of fatal outcomes as opposed to non-fatal outcomes. The fatal contribution ranged from 98.1 per cent for lung cancer to around 80 per cent for coronary heart disease (see **FIGURE 3.34A**).

Around 57 per cent of the disease burden attributed to underconsumption of fruit was experienced by males. Males experienced 70 per cent of the burden due to coronary heart disease caused by a diet low in fruit, but rates of stroke due to underconsumption of fruit were similar for males and females. The burden of cancers caused by lack of fruit intake was more likely to be experienced by males (see **FIGURE 3.34B**).

FIGURE 3.32 Fruits such as pears are a rich source of fibre.

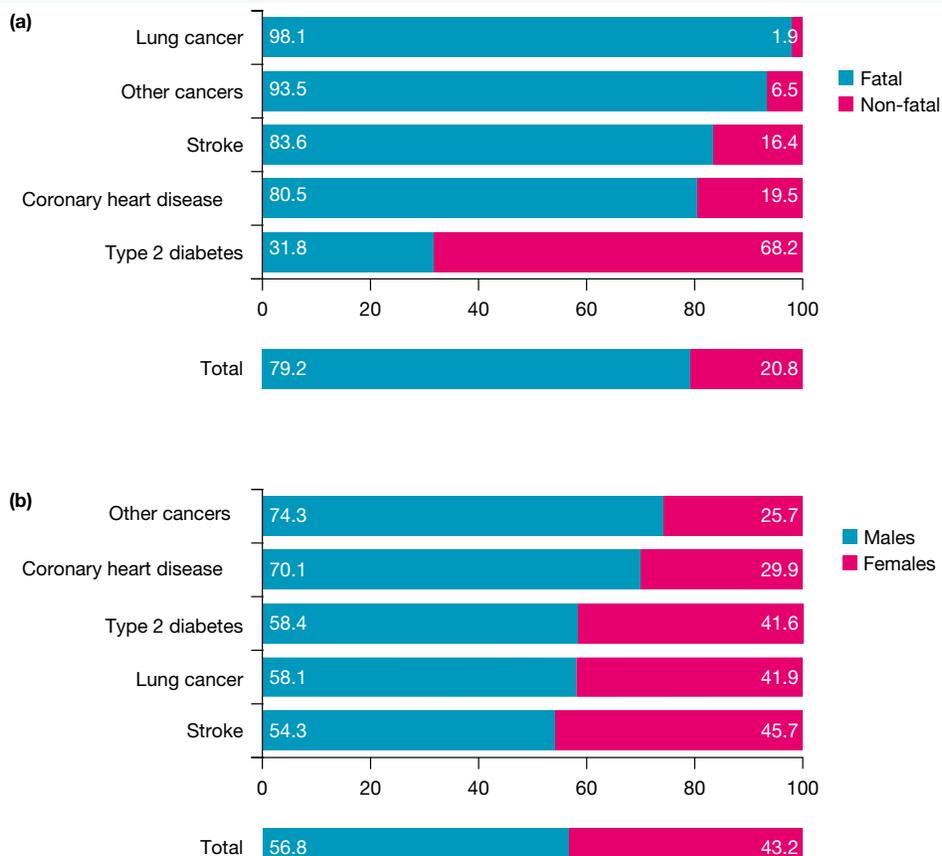


FIGURE 3.33 Number of YLL and YLD (left axis) and proportion of total DALY (right axis) contributed by low intake of fruit, by broad disease group and sex, 2015



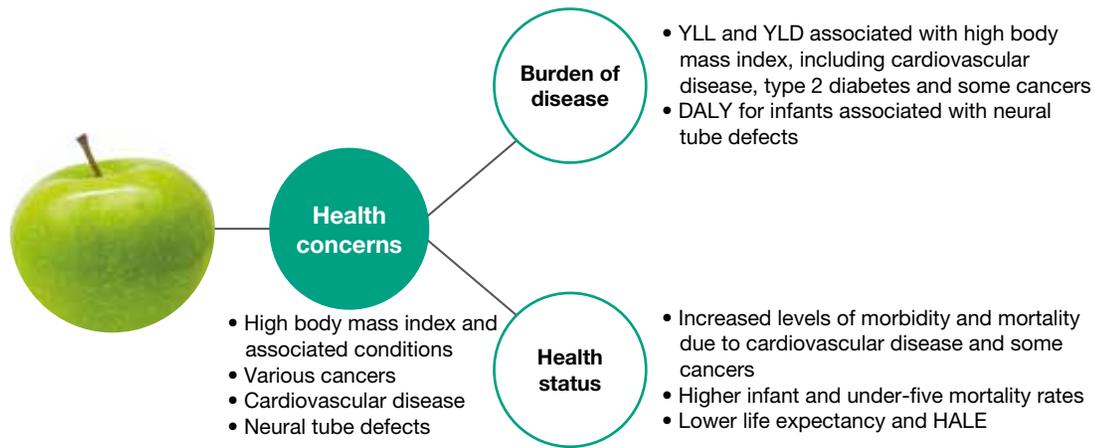
Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

FIGURE 3.34 Proportion (%) of burden attributable to underconsumption of fruit, by fatal versus non-fatal burden (a) and sex (b), 2015



Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

FIGURE 3.35 Summary of the impact of underconsumption of fruit on health status and burden of disease



3.5.3 Underconsumption of dairy

Dairy refers to animal milk and products created from animal milk, including cheese and yoghurt. In Australia, the most common forms of dairy are products made using cow’s milk, but varieties made using the milk from goats and sheep are also commonly available.

Some Australians, particularly younger people, reduce their dairy intake as they believe that these foods contribute to weight gain. However, there is insufficient evidence to support this claim.

Around 5 per cent of the population experience dairy intolerance, which is a reduced ability to digest lactose, a type of sugar found in dairy products. For affected individuals, **fortified** milk substitutes such as soy or almond milk can satisfy dairy needs, but are not technically a type of dairy and will therefore not be considered in this section.

Underconsumption of dairy and osteoporosis

The main nutritional contribution of dairy is the provision of calcium, a mineral essential for a range of functions in the human body including the strengthening of bones and the prevention of osteoporosis — a bone disease characterised by weak, porous bones that are susceptible to fracture (see **FIGURE 3.36**).

Dairy is also a rich source of other nutrients, and research has shown that underconsumption of dairy acts to increase morbidity and mortality in relation to a range of other conditions including cardiovascular disease, colorectal cancer, type 2 diabetes and **dental caries**.

Underconsumption of dairy and cardiovascular disease

Underconsumption of dairy has been associated with increased risk of coronary heart disease, hypertension and stroke.

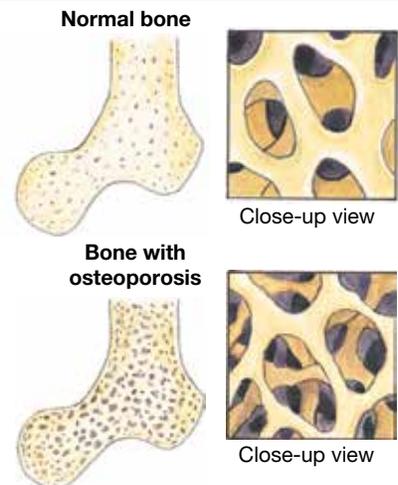
Underconsumption of dairy and colorectal cancer

According to the Australian Dietary Guidelines, recent evidence suggests that people who regularly consume more than one serve of dairy products each day (particularly milk) have a reduced risk of developing colorectal cancer. Underconsumption of dairy therefore increases the risk.

Underconsumption of dairy and type 2 diabetes

A 10-year study of 3000 overweight adults found that the underconsumption of milk and other milk products and consuming refined sugars and carbohydrates instead, may increase the risk of overweight young adults developing type 2 diabetes.

FIGURE 3.36 Calcium in dairy products helps to build peak bone mass and reduce the risk of osteoporosis, a condition characterised by weak bones.



Fortified (foods) when a nutrient has been artificially added to food to increase its nutritional value

Dental caries decay of teeth caused by a breakdown in the tissues that make up the tooth

Underconsumption of dairy and dental caries

Underconsumption of dairy often means teeth are not as strong as they could be, increasing the risk of dental caries.

Underconsumption of dairy and the Australian Burden of Disease Study

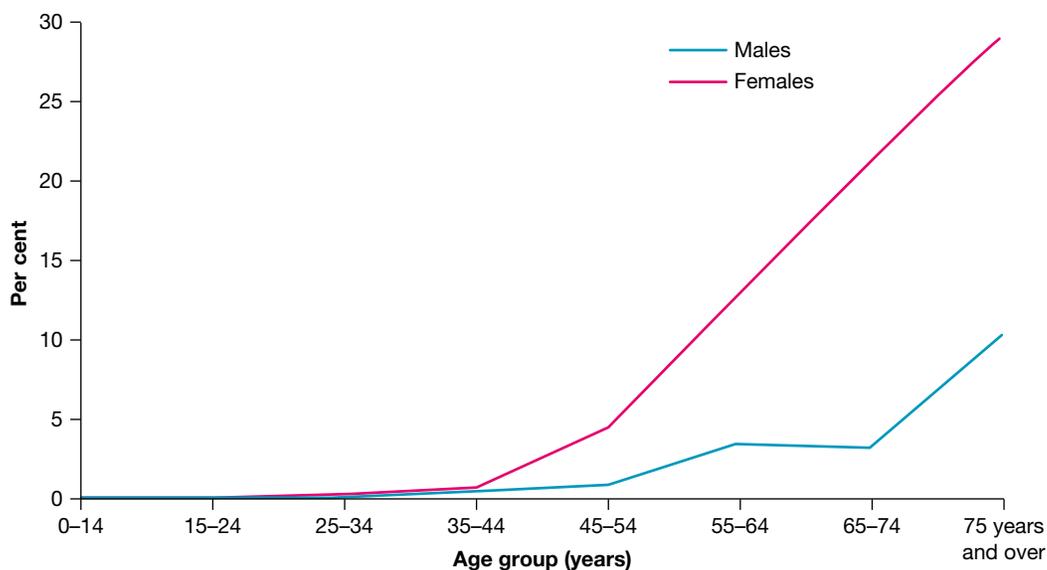
Data specifically relating to the burden of disease attributable to underconsumption of dairy are not available. Therefore, data relating to underconsumption of milk, and conditions attributed to the underconsumption of dairy, will be explored.

- In 2015, underconsumption of milk was linked to 0.2 per cent of the total burden of disease in Australia, much of which was through the relationship between milk and osteoporosis.
- In 2017–18, 3.8 per cent (or just over 900 000) of Australians experienced osteoporosis. Women overall were twice as likely to experience osteoporosis as males, and five times more likely in the 55 and over age group (see **FIGURE 3.38**).

FIGURE 3.37
Cow's milk is a rich source of calcium.

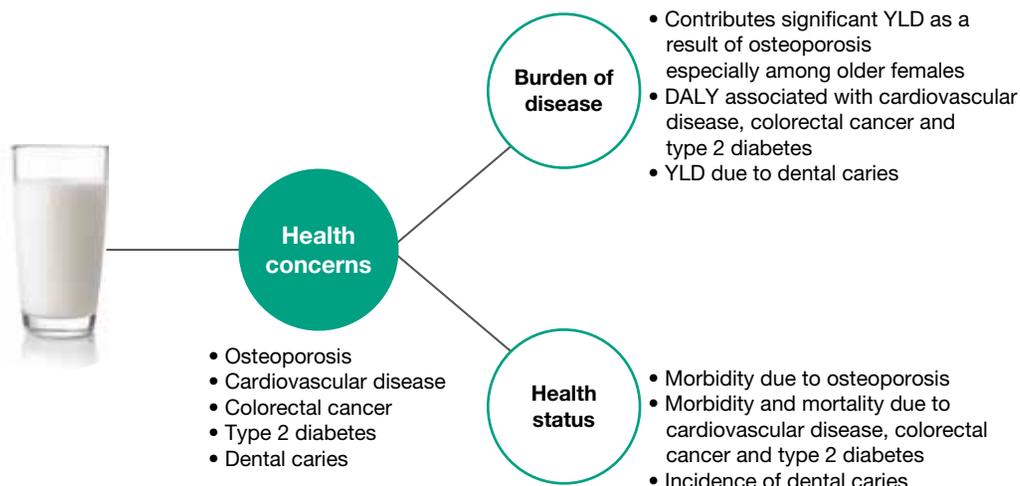


FIGURE 3.38 Proportion of males and females with osteoporosis, 2017–18



Source: Adapted from ABS, *National Health Survey: First Results, 2017–18*.

FIGURE 3.39 Summary of the impact of underconsumption of dairy on health status and burden of disease



3.5 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

3.5 Quick quiz **on**

3.5 Exercise

3.5 Exam questions

Select your pathway

■ LEVEL 1

2, 4, 5

■ LEVEL 2

1, 3, 6, 7, 8

■ LEVEL 3

9, 10

Test your knowledge

- Complete the following table:

	Explanation of impacts	Link/s to health status	Link/s to burden of disease
Underconsumption of vegetables			
Underconsumption of fruit			
Underconsumption of dairy			

- Explain what is meant by:
 - nutrient dense foods
 - energy dense foods.
- Briefly explain how antioxidant intake can promote health status.
- Explain why individuals should consume whole fruits instead of fruit juice.
- Explain what is meant by 'dairy'.
 - Which nutrient is dairy a rich source of?
 - Outline why this nutrient is important for good health and wellbeing.

Apply your knowledge

- Referring to **FIGURE 3.24** and **FIGURE 3.26**, explain how differences in the proportion of males and females consuming the recommended serves of vegetables per day may impact on the difference in the number of YLL and YLD experienced between males as females as a result of low intake of vegetables.
- Use **FIGURE 3.27** to answer the following questions.
 - What proportion of the total burden due to underconsumption of vegetables was the result of fatal outcomes?
 - For which disease was the fatal proportion of underconsumption of vegetables the greatest?
- Suggest reasons the lower intake of vegetables for those aged 85+ compared to those aged 75–84.
- According to **FIGURE 3.34**, what proportion of the burden associated with underconsumption of fruit was attributed to females?
 - For which disease did females experience the greatest proportion of burden of disease compared to males?
- Outline one trend shown in **FIGURE 3.38**.

Question 1 (2 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.6.a.i; © VCAA

In 2014–15, the Australian Bureau of Statistics conducted the National Health Survey. The survey was designed to collect information about the health of Australians. Some key findings for Australian adults included the following:

- less than half (49.8 per cent) met the Australian Dietary Guidelines for the recommended daily serves of fruit
- 7.0 per cent met the Australian Dietary Guidelines for the recommended daily serves of vegetables
- 5.1 per cent met both guidelines
- 63.4 per cent were overweight or obese.

Data: Australian Bureau of Statistics, 'National Health Survey, First Results, Australia, 2014–15', ABS cat. no. 4364.0.55.001; © Commonwealth of Australia 2015

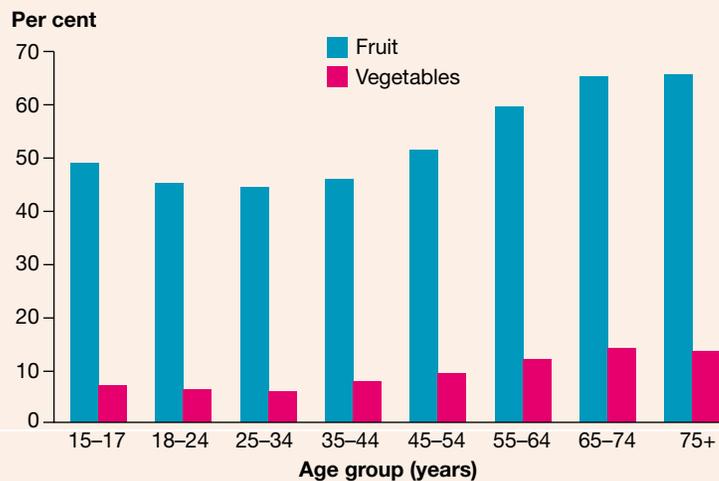
Based on the results of the survey, **identify** one nutrient that could be deficient in the diet of Australians and outline one possible consequence for health.

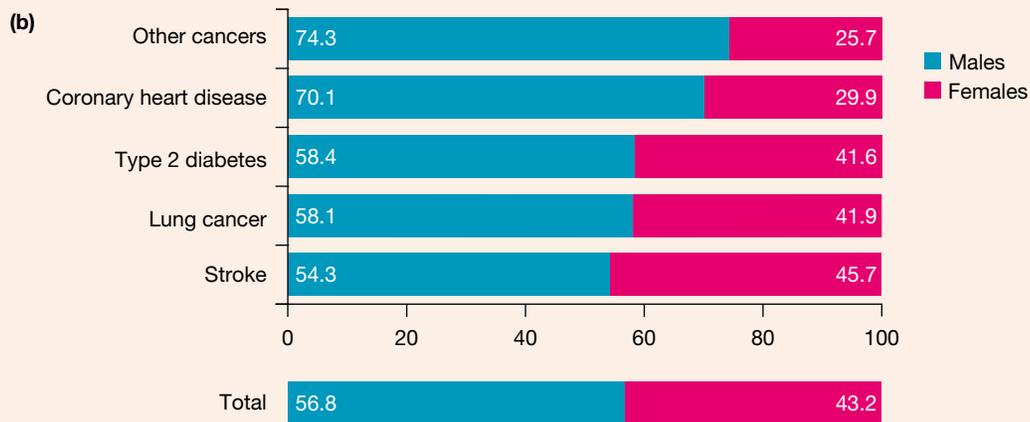
Question 2 (1 mark)

Source: VCE 2013, *Health and Human Development*, Section A, Q.4.a; © VCAA

Identify one trend from the graph in relation to the percentage of people who usually eat the recommended daily intake of fruits and vegetables.

People aged 15 years or over who usually eat the recommended daily intake of fruits and vegetables

**Question 3 (2 marks)**

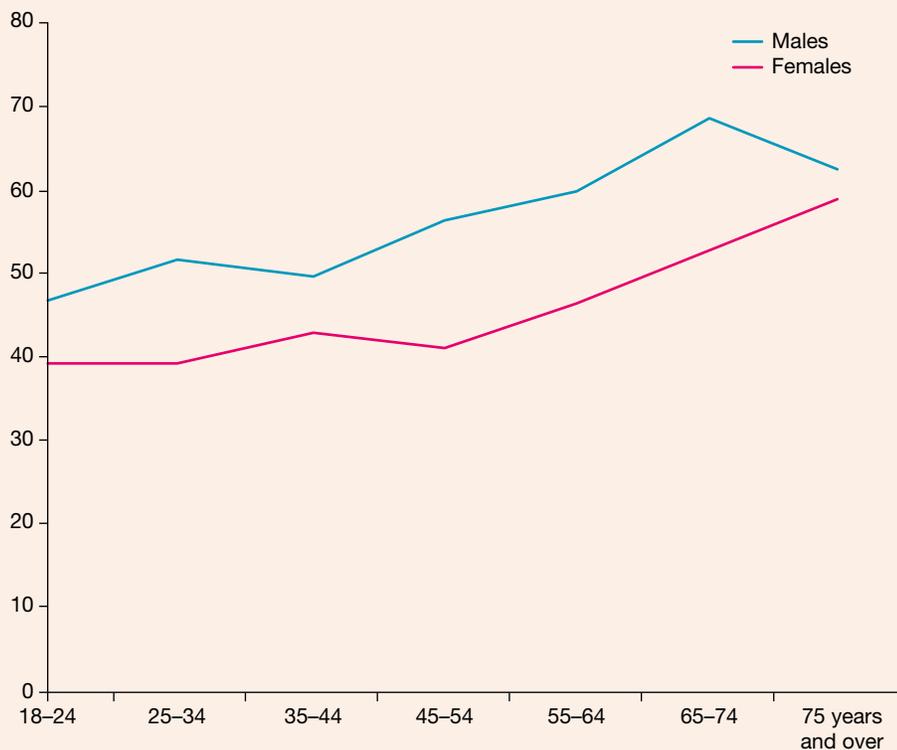


Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

Identify the top fatal burden attributed to low fruit intake and the top non-fatal burden attributed to low fruit intake.

Question 4 (4 marks)

Persons 18 years and over – Proportion with adequate intake of fruit, vegetables or both (a), 2014–2015



From the data in the graph, **describe** two conclusions that can be drawn about the adequate consumption of fruits and vegetables.

Question 5 (2 marks)

Insufficient intake of dairy foods is a major risk factor for osteoporosis. **Identify** a population group where the prevalence of osteoporosis is high and explain why this group is most at risk.

More exam questions are available in your learnON title.

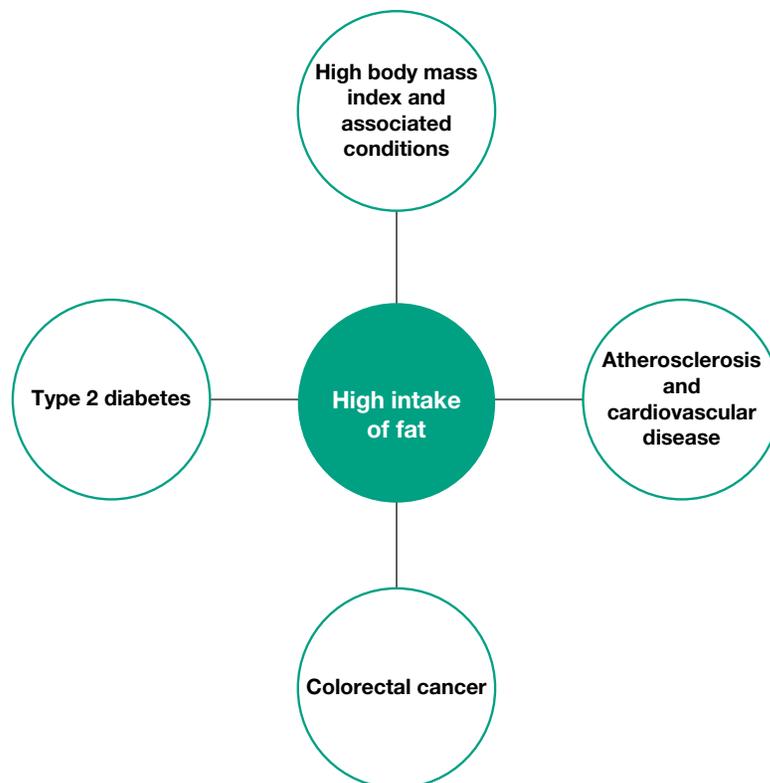
3.6 Dietary risks of high intake of fat, salt and sugar

KEY CONCEPT Understanding the contribution of high intake of fat, salt and sugar to Australia's health status and burden of disease

3.6.1 High intake of fat

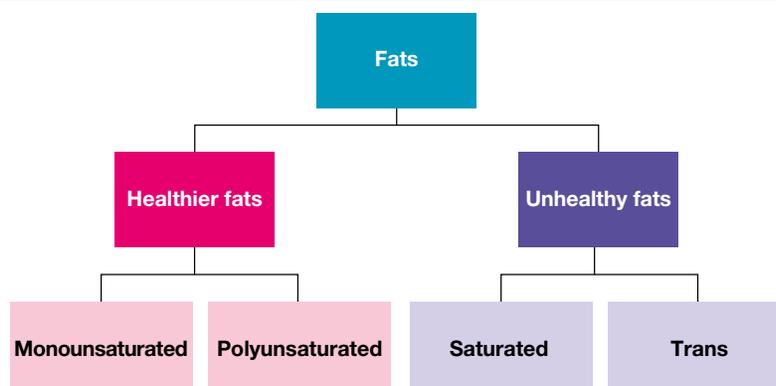
Fats (sometimes referred to as lipids) play a number of roles in relation to health and wellbeing. Most people get enough fats in their diet. In fact, Australians are more likely to overconsume than underconsume this nutrient, and this can have detrimental effects on health and wellbeing (see **FIGURE 3.40**).

FIGURE 3.40 High intake of fat contributes to a number of health concerns.



Although fats are an important part of a balanced diet, there are different types of fats and some are healthier than others (see **FIGURE 3.41**).

FIGURE 3.41 The different types of fat



High intake of fat and high body mass index

One of the primary functions of fat is to act as a fuel for energy production. All fats can be used as a fuel source for energy production and will contribute to weight gain if the energy provided by them is not used. Excessive consumption of any type of fat can therefore contribute to high body mass index and the associated conditions that were explored in subtopic 3.4.

Overconsumption of fats impacts health status in Australia as many people consume too much of this nutrient, especially saturated fat. The greatest impact of overconsumption of fat is in relation to high body mass, which increases morbidity and mortality in relation to cardiovascular disease, osteoarthritis, type 2 diabetes and some cancers.

High intake of fats and cardiovascular disease

The other impact of overconsumption of saturated and trans fats on health status is in relation to high cholesterol levels.

One of the main differences between the types of fat is in the way they impact cholesterol levels in the bloodstream. There are two types of cholesterol:

- low-density lipoprotein (LDL), also known as ‘bad’ cholesterol
- high-density lipoprotein (HDL), also known as ‘good’ cholesterol.

When there is too much LDL in the blood, it tends to be deposited on the walls of the blood vessels, giving the blood less room to travel to the cells. When this occurs, the cholesterol deposits allow other substances (such as calcium) to become embedded, which leads to hardening and narrowing of the arteries. This condition is known as atherosclerosis (see **FIGURE 3.42**). Atherosclerosis is the main underlying factor in most types of cardiovascular disease, including coronary heart disease and stroke, as it makes the heart work harder and can eventually cut off blood supply completely. High-density lipoprotein can slow the process of atherosclerosis, therefore reducing the risk of heart disease and stroke.

Saturated and trans fats are sometimes known as ‘bad’ fats because they increase LDL cholesterol levels in the blood and therefore increase the risk of cardiovascular disease. Trans fats can also decrease levels of HDL cholesterol, further increasing the risk of heart disease and stroke.

Monounsaturated and polyunsaturated fats are often considered to be healthier fats because they can reduce the levels of LDL cholesterol in the body and therefore reduce the risk of cardiovascular disease. Polyunsaturated fats can also help increase HDL cholesterol and reduce blood clots and inflammation, which further decreases the risk of heart disease and stroke.

High intake of fat and type 2 diabetes

In addition to increasing the risk of cardiovascular disease, diets high in saturated and trans fats have been shown to change the composition of cell membranes, which can interfere with the transport of glucose into the cell, increasing the impact of impaired glucose regulation and the risk of type 2 diabetes.

High intake of fat and colorectal cancer

Although saturated and trans fat can increase the risk of high body mass index, which is a risk factor for colorectal cancer, excessive intake also appears to increase the risk of colorectal cancer directly (that is, even in people who have normal body mass).

High intake of fat and the Australian Burden of Disease Study

In 2015, high cholesterol was responsible for 3 per cent of the total burden of disease in Australia, including 31 per cent of the burden due to cardiovascular disease. The majority (more than 80 per cent) of the burden was due to premature mortality. Males accounted for around 67 per cent of the total burden (see **FIGURE 3.43B**).

FIGURE 3.42 High cholesterol can contribute to atherosclerosis

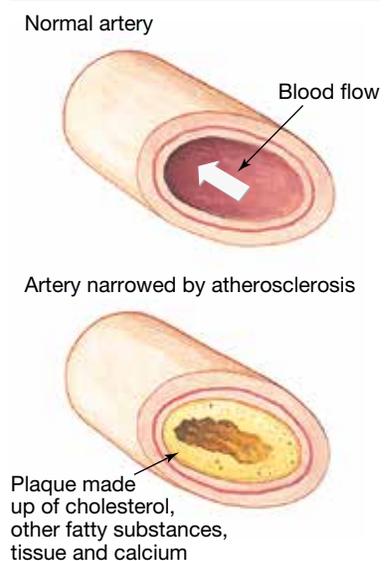
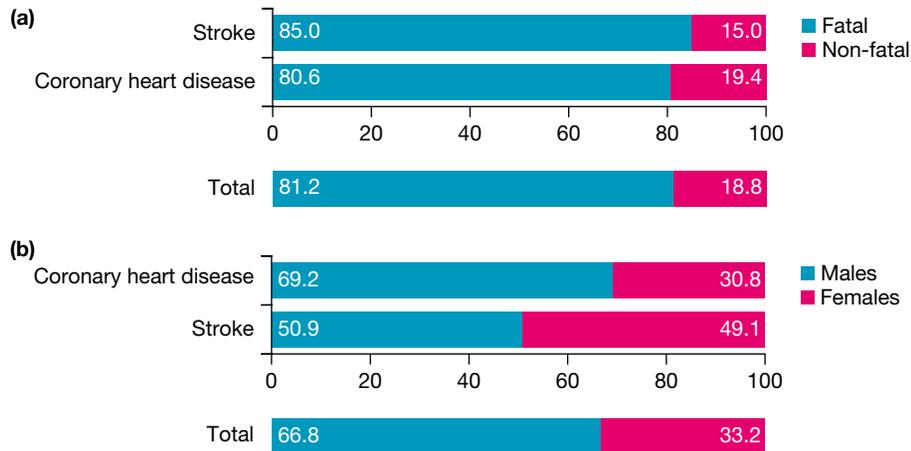


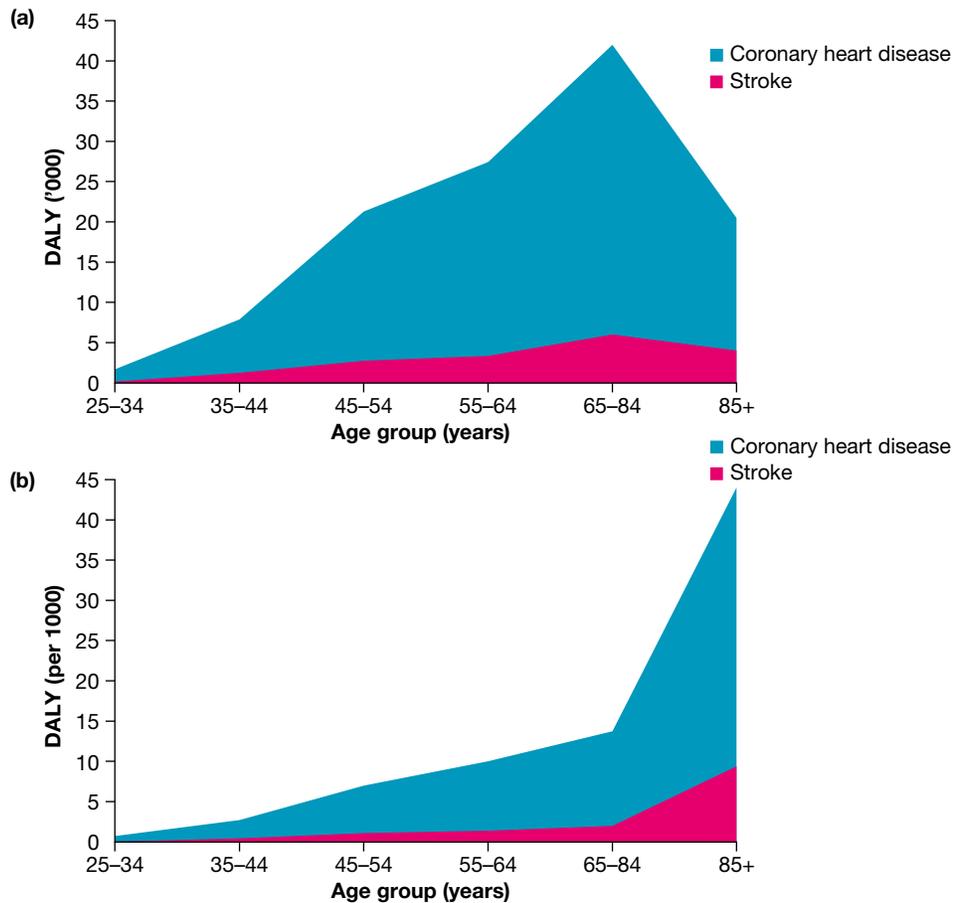
FIGURE 3.43 Proportion (%) of burden attributable to high cholesterol, by fatal versus non-fatal burden (a) and sex (b), 2015



Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

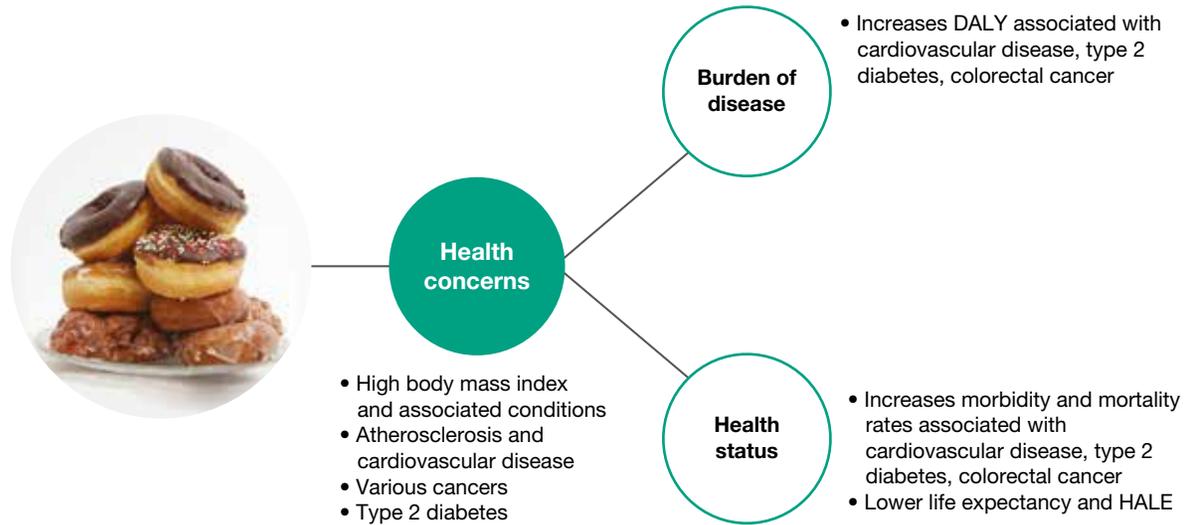
Coronary heart disease was responsible for the majority of DALY attributable to high cholesterol. The total number of DALY caused by high cholesterol gradually increased with age until reaching a peak in the 65–84 age group (see **FIGURE 3.44**).

FIGURE 3.44 Burden attributable to high cholesterol according to disease and age group, by total DALY (a) and rate per 1000 people (b), 2015



Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

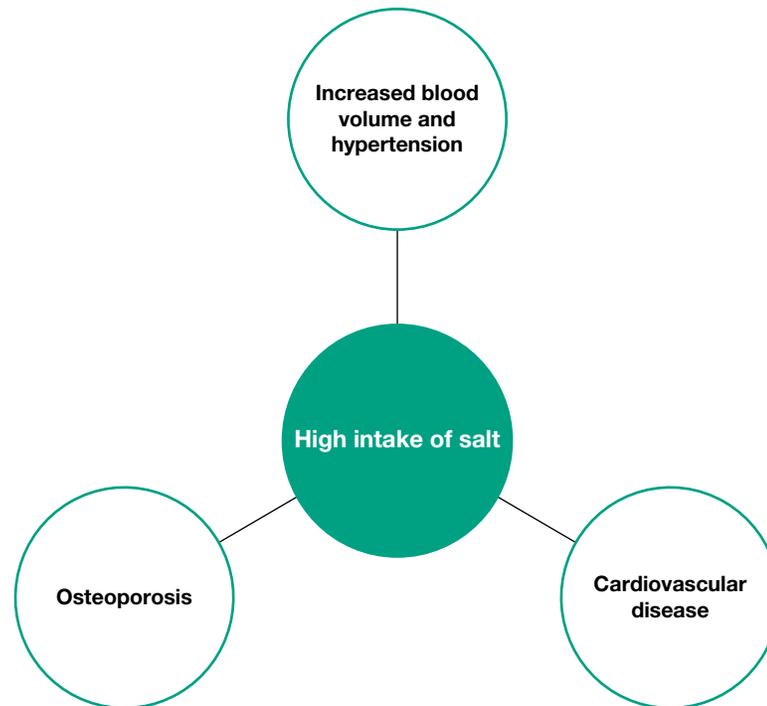
FIGURE 3.45 Summary of the impact of high intake of fat on health status and burden of disease



3.6.2 High intake of salt

One of the main components of salt is sodium. Like fat, sodium is required for optimal human functioning but too much can contribute to negative health outcomes (see **FIGURE 3.46**).

FIGURE 3.46 High intake of salt contributes to a number of health concerns.



In high-income countries like Australia, salt from processed foods is the major source of sodium for most people. Most Australians get more than enough sodium in their diet. According to the Better Health Channel, the average Australian consumes eight to nine times the amount of sodium they need for good health and wellbeing.

FIGURE 3.47 Processed foods are often high in salt. Checking the label for the amount of sodium present is often the best way to determine which foods have lower levels of salt.



High intake of salt and hypertension

High levels of sodium in the body can draw excess fluid out of the cells. This increases blood volume and contributes to hypertension.

High intake of salt and cardiovascular disease

A high intake of salt can lead to cardiovascular disease. Increased blood volume and hypertension force the heart to work harder. Heart failure can result if the heart cannot keep up with demand from the body. Hypertension associated with excess sodium intake contributes to higher rates of stroke and heart attack.

FIGURE 3.48 Excess sodium increases blood volume and contributes to hypertension — a major risk factor for heart attack.



High intake of salt and osteoporosis

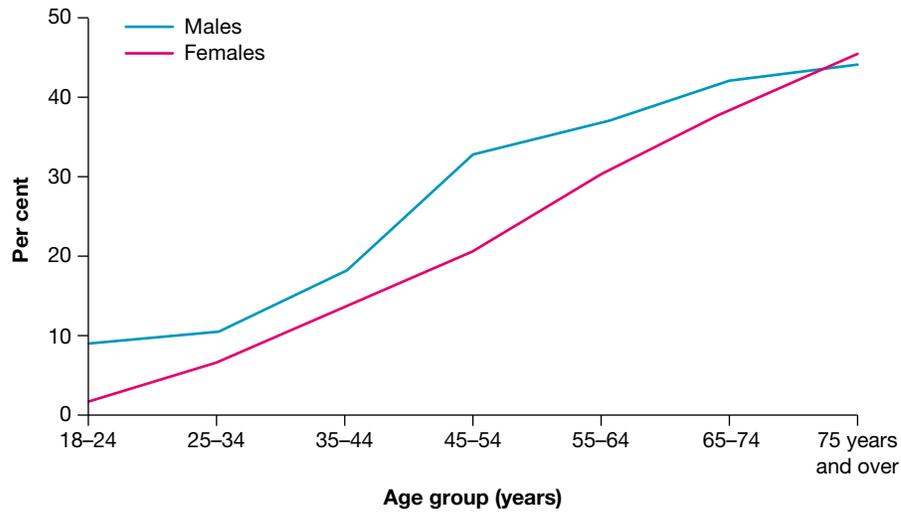
Excess sodium causes calcium to be excreted in urine, which can lead to the demineralisation of bones and osteoporosis.

High intake of salt and the Australian Burden of Disease Study

According to the Australian Institute of Health and Welfare and the ABS:

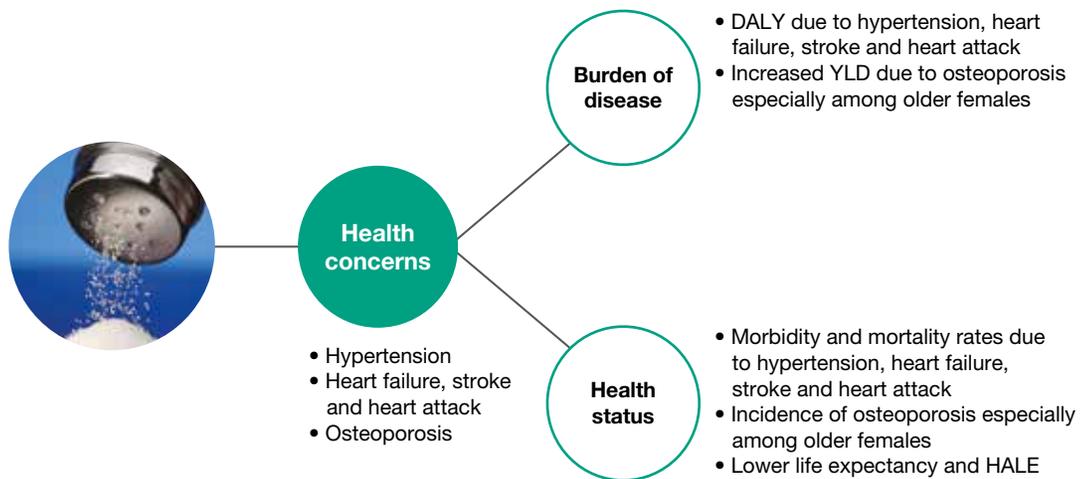
- Overconsumption of salt was responsible for 1.2 per cent of the total burden of disease in Australia in 2015.
- In 2017–18, around 23 per cent of adults, or 4.3 million people, had measured high blood pressure, excluding those taking medication.
- High blood pressure was more common in men (25.4 per cent) than in women (20.3 per cent), except among people aged 75 and over (45.4 per cent in women and 44.6 per cent in men).
- The proportion with high blood pressure increased with age, from 6 per cent for people aged 18–24 years to 45 per cent for people aged 75 and over (see **FIGURE 3.49**).

FIGURE 3.49 Proportion of persons aged 18 years of over with high blood pressure



Source: Adapted from ABS, *National Health Survey: First Results, 2017-18*.

FIGURE 3.50 Summary of the impact of high intake of salt on health status and burden of disease



3.6.3 High intake of sugar

Sugars are a type of carbohydrate found naturally in some foods such as fruit and honey, and added to many processed foods such as confectionary, sugar-sweetened soft drinks and cordials, fruit drinks, vitamin waters, energy and sports drinks.

High intake of sugar and high body mass index

Sugars are required as a fuel for energy production but, if consumed in excess, they are stored as adipose (fat) tissue. Over time, this can lead to weight gain and high body mass index. High body mass index contributes to health status and burden of disease in a number of ways (see subtopic 3.4).

FIGURE 3.51 High intake of sugar contributes to a number of health concerns.

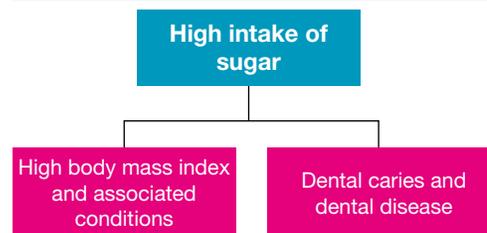


FIGURE 3.52 Sweetened beverages, such as these energy drinks, have emerged as one of the main sources of sugar for Australians.



FIGURE 3.53 Overconsumption of sugar is a risk factor for dental caries, a major cause of morbidity for children.



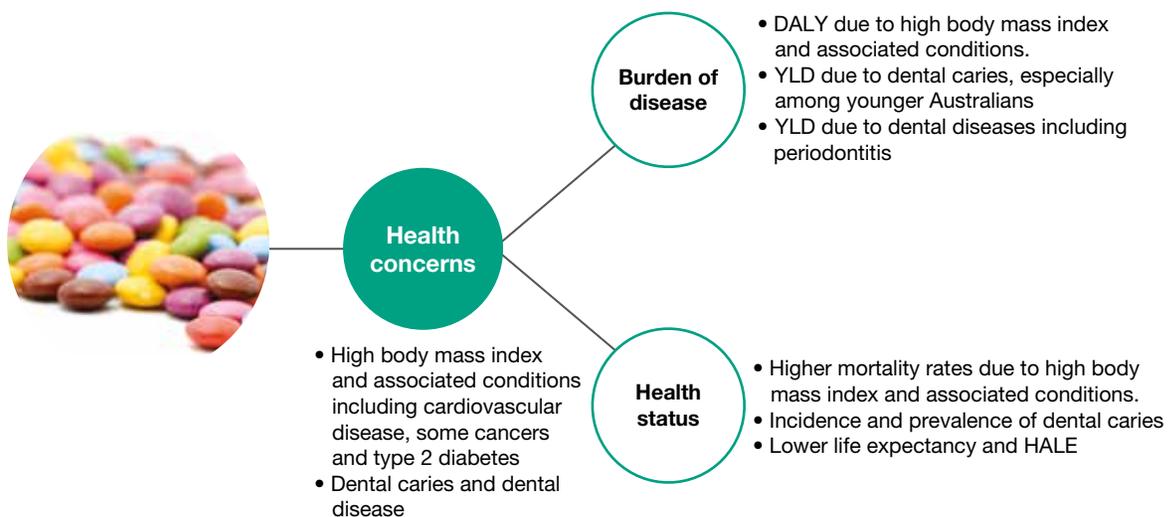
High intake of sugar and dental caries and dental disease

As well as providing a fuel for energy production, sugars provide a food source for bacteria in the mouth. These bacteria produce acids that can contribute to dental decay and the development of dental caries, which is a significant contributor to morbidity among children in Australia. Dental caries can impact mental health and wellbeing as a result of reduced self-esteem if the individual's appearance is altered. If left untreated, diseases such as **periodontitis** can occur. Periodontitis is a condition characterised by inflammation and infection of the tissues that support the teeth. In the long term, periodontitis can lead to the loosening and loss of teeth.

Over the past 15 years, research has established links between poor oral health (especially periodontitis) and a range of serious diseases that contribute significantly to burden of disease in Australia including heart disease, stroke, severe infections, kidney disease, oral cancers and dementia (Dental Health Services Victoria, 2015). The causal relationship between oral health and chronic disease is the subject of ongoing research.

Periodontitis a condition characterised by inflammation and infection of the tissues that support the teeth

FIGURE 3.54 Summary of the impact of high intake of sugar on health status and burden of disease



3.6 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

3.6 Quick quiz

on

3.6 Exercise

3.6 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6, 7

■ LEVEL 3

8

Test your knowledge

- Identify the four types of fat.
- Briefly explain the difference between LDL and HDL cholesterol.
- Explain the process of atherosclerosis.
 - Explain how atherosclerosis contributes to cardiovascular disease.
- Which two fats are considered the 'bad' fats? Why?
 - Which two fats are considered the 'good' fats? Why?
- Complete the following table:

	Explanation of impacts	Link/s to health status	Link/s to burden of disease
High intake of fat			
High intake of salt			
High intake of sugar			

Apply your knowledge

- Use **FIGURE 3.43** to answer the following questions:
 - What proportion of the total burden due to high cholesterol was as a result of fatal outcomes?
 - For which disease was the fatal proportion of high cholesterol the greatest?
 - For which disease did males and females have the most similar proportion of burden of disease due to high cholesterol?
 - What proportion of the total burden of high cholesterol was experienced by males compared to females?
- Use **FIGURE 3.44** to answer the following questions:
 - Which disease contributed the most to DALY due to high cholesterol?
 - Discuss how high cholesterol contributes to the disease identified in part a.
 - Approximately how many DALY did those aged 65–84 experience due to high cholesterol?
- Using data from **FIGURE 3.49**, describe the change in the proportion of those with hypertension as age increases.
 - Explain how the difference in rates of hypertension between those aged 18–24 and those aged 75 and over could contribute to differences in health status between these two groups.

Question 1 (2 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.6.a.ii; © VCAA

In 2014–15, the Australian Bureau of Statistics conducted the National Health Survey. The survey was designed to collect information about the health of Australians. Some key findings for Australian adults included the following:

- less than half (49.8 per cent) met the Australian Dietary Guidelines for the recommended daily serves of fruit
- 7.0 per cent met the Australian Dietary Guidelines for the recommended daily serves of vegetables
- 5.1 per cent met both guidelines
- 63.4 per cent were overweight or obese

Data: Australian Bureau of Statistics, 'National Health Survey, First Results, Australia, 2014–15', ABS cat. no. 4364.0.55.001; © Commonwealth of Australia 2015

Based on the results of the survey, **identify** one nutrient that could be in excess in the diet of Australians and **outline** one possible consequence for health.

Question 2 (2 marks)

Source: VCE 2015, *Health and Human Development Exam*, Q.6.c; © VCAA

Between 2011 and 2013, the Australian Government conducted the Australian Health Survey (AHS), which collected in-depth data on nutrition. One of the preliminary findings was that the average daily consumption of sodium was 2404 mg per day, significantly higher than the 460–920 mg recommended by the National Health and Medical Research Council (NHMRC).

Outline how excessive sodium consumption can have an impact on health.

Question 3 (2 marks)

Source: VCE 2012, *Health and Human Development Exam*, Section B, Q.4.b; © VCAA

The Heart Foundation is a non-government agency that provides dietary advice to help maintain healthy weight to lower the risk of contracting a range of diseases. The Heart Foundation advises the following.

- Eat a variety of foods.
- Include vegetables, wholegrains, fruit, nuts and seeds every day.
- Choose healthier fats and oils.
- Try to limit sugary, fatty and salty takeaway meals and snacks.
- Drink mainly water.

Outline one health benefit of limiting the intake of sugary, fatty and salty takeaway meals and snacks.

Question 4 (2 marks)

All fats are a concentrated source of energy and if overconsumed can lead to weight gain and obesity. Saturated fats and trans fats also have a specific impact on both cardiovascular disease and type 2 diabetes.

Describe how saturated fats and trans fats contribute to the development of cardiovascular disease and type 2 diabetes.

More exam questions are available in your learnON title.

3.7 Dietary risks of low intake of fibre and iron

KEY CONCEPT Understanding the contribution of low intake of fibre and iron to Australia's health status and burden of disease

3.7.1 Low intake of fibre

Fibre is a type of carbohydrate that is required for optimal health and wellbeing. Found in all foods of plant origin, fibre does not get absorbed by the body. Rather, it travels through the digestive system, promoting feelings of fullness and assisting in keeping the digestive tract clean by adding bulk to faeces.

Two types of fibre are essential for good health and wellbeing: soluble and insoluble. Soluble fibre (found in foods such as oats) absorbs water. If left in a bowl of water, oats will absorb moisture and turn into a mushy, gel-like substance. Other good sources of soluble fibre include fruits, vegetables, barley, seed husks, flaxseed, dried beans, lentils, peas, soy milk and soy products. Insoluble fibre does not absorb moisture. The peels of fruit and vegetables are sources of insoluble fibre and, if left in a bowl of water, will not change in texture. Other good sources of insoluble fibre include wheat bran, corn bran, rice bran, nuts, seeds, dried beans and wholegrain foods.

Most Australians do not consume enough fibre. On average, most Australians consume 20–25 grams of fibre daily. The Heart Foundation recommends that adults should aim to consume approximately 25–30 grams daily.

Low intake of fibre and high body mass index

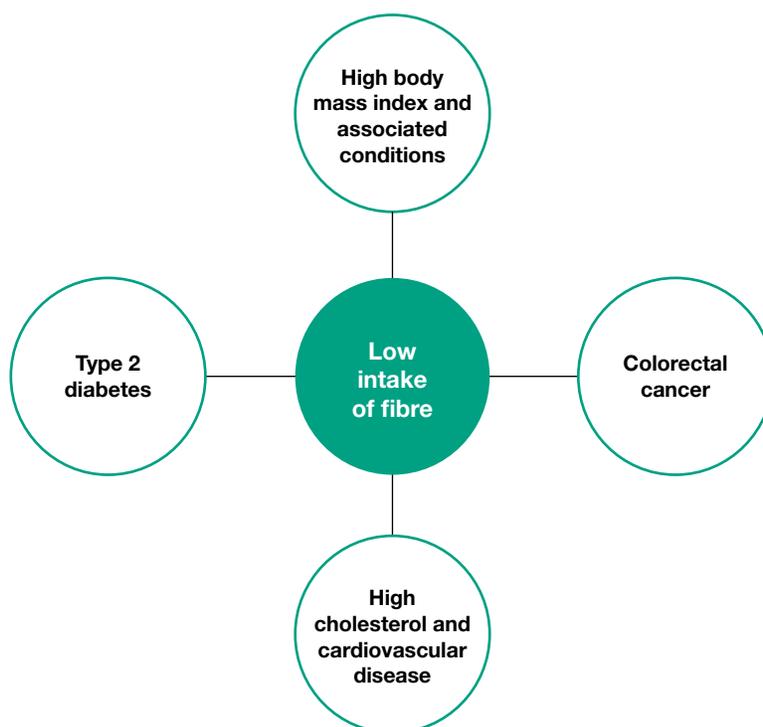
Both types of fibre travel through the digestive system without being absorbed by the body. This promotes feelings of fullness, which means that low intake can contribute to overeating and high body mass index. (The impacts of high body mass were explored in subtopic 3.4.)

By absorbing water, soluble fibre forms a mushy, gel-like substance that slows digestion and delays the absorption of glucose into the blood stream. Low intake therefore contributes to more glucose being absorbed by the body, which increases the risk of high body mass index.

FIGURE 3.55 Bran, which is found in many breakfast cereals, is a good source of fibre. Unfortunately, too few people get enough of it.



FIGURE 3.56 Low intake of fibre contributes to a number of health concerns.



Low intake of fibre and colorectal cancer

Fibre adds bulk to faeces and assists in keeping the digestive system clean, reducing the risk of abnormal cells developing, especially in the colon and rectum. Low intake of fibre intake is therefore associated with higher rates of morbidity and mortality from colorectal cancer, including bowel cancer.

Low intake of fibre and cardiovascular disease

In the digestive system, soluble fibre attaches to particles of LDL cholesterol and helps to excrete them. As a result of this process, soluble fibre helps to decrease levels of cholesterol in the body and reduces rates of morbidity and mortality from cardiovascular disease. Low intake has been shown to increase the rate of cholesterol absorption and the risk of cardiovascular disease.

Low intake of fibre and type 2 diabetes

Evidence shows that people with a low intake of insoluble cereal fibre or wholegrain foods have a significantly higher risk of developing type 2 diabetes.

Fibre reduces the absorption of glucose, which is protective in relation to type 2 diabetes as it takes pressure off the pancreas.

Low intake of fibre and the Australian Burden of Disease Study

Data specifically relating to the burden of disease attributable to low intake of fibre were not collected in the 2015 Burden of Disease Study. As a result, data relating to low intake of wholegrain and high fibre cereals (which are both high in fibre) are explored in this section. In 2015, low intake of wholegrains and high fibre cereals accounted for 1.6 per cent of the total burden of disease, responsible for 14 per cent of the burden due to coronary heart disease and type 2 diabetes, and more than 12 per cent of the burden due to stroke (see **TABLE 3.2**).

FIGURE 3.57 Fibre is essential for the health of the digestive system and can decrease the risk of colorectal cancer.

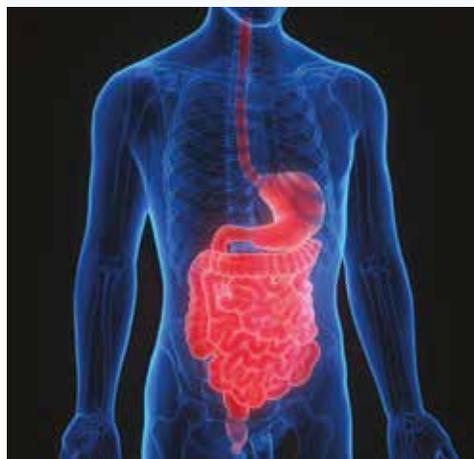


TABLE 3.2 Burden (number and percentage of linked disease) attributable to diet low in whole grains and high fibre cereals, 2015

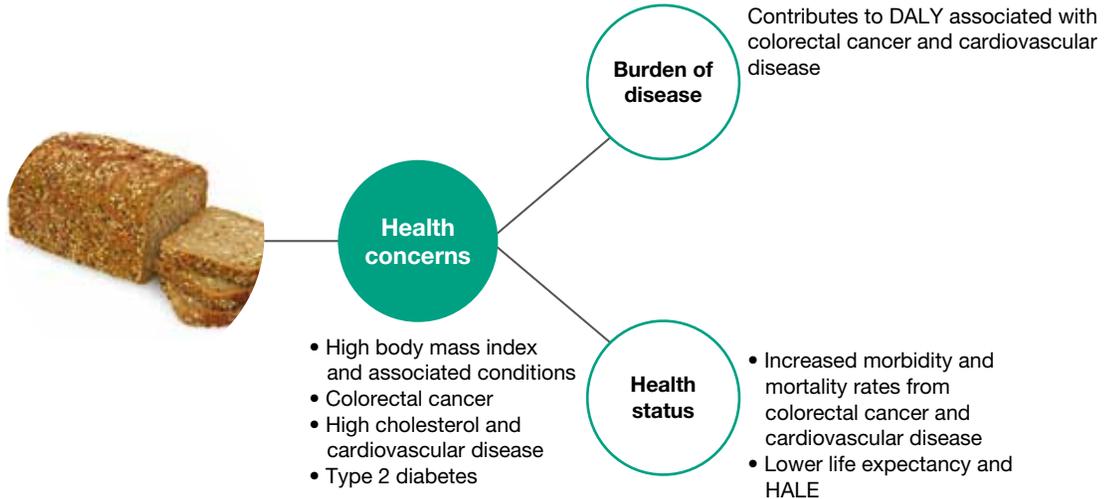
Linked disease	DALY	
	Number	Per cent
Coronary heart disease	46 452	14.1
Stroke	15 825	12.4
Type 2 diabetes	14 380	14.0
Total	76 657	1.6

Note: The 'per cent' column refers to the proportion of burden attributable to low intake of wholegrains and high fibre cereals for each disease.

Source: Adapted from Australian Burden of Disease Study: *Impact and causes of illness and death in Australia, 2015* (Risk factor estimates for Australia: Supplementary tables)

In 2015, the fatal burden contributed 72 per cent of the overall burden attributable to a diet low in wholegrains and high fibre cereals. Over 83 per cent of the attributable burden from stroke and 80 per cent of the burden due to coronary heart disease was due to premature deaths, compared to type 2 diabetes, where the majority of DALY were due to non-fatal outcomes (68 per cent). Nearly two-thirds (65 per cent) of the burden attributable to a diet low in fibre was experienced by males.

FIGURE 3.58 Summary of the impact of low intake of fibre on health status and burden of disease



3.7.2 Low intake of iron

Low intake of iron and anaemia

Iron is an essential part of blood. Iron forms the ‘haem’ part of haemoglobin, which is the oxygen carrying part of blood. A person who does not get enough iron may develop iron-deficiency **anaemia**, a condition characterised by tiredness and weakness. Individuals with iron-deficiency anaemia struggle to generate enough energy to complete daily tasks such as school, work, sport and socialising. Although there are different types and causes of anaemia, iron deficiency is responsible for 100 per cent of cases of iron-deficiency anaemia. Low intake of iron is a major cause of iron deficiency, although other causes exist, such as an inability to absorb iron and severe blood loss.

Red meat is a rich source of iron but it often contains high levels of saturated fat. As a result, lean cuts of meat should be chosen and iron should also be gained from other sources such as nuts, brown rice and eggs. A balanced, varied diet is the best way to get adequate amounts of iron.

FIGURE 3.59 Red meat is a rich source of iron, but it can also be high in saturated fat.



Anaemia a condition characterised by a reduced ability of the body to deliver enough oxygen to the cells due to a lack of healthy red blood cells

CASE STUDY

A close up on anaemia

Anaemia is a condition characterised by a deficiency in the number or quality of red blood cells. Red blood cells are responsible for transporting oxygen to cells around the body to allow them to carry out their normal functions. One of the components of red blood cells is a protein called haemoglobin. Each red blood cell contains

a haemoglobin molecule and it is this molecule that gives red blood cells their red colour. When transported to the lungs, oxygen molecules attach themselves to the haemoglobin and are carried through the network of blood vessels until they are absorbed by a cell.

Anaemia occurs when there is a reduced level of red blood cells or haemoglobin in the blood.

In those with anaemia, the heart pumps harder in an attempt to ensure adequate levels of oxygen are delivered to the cells. During exercise, meeting the demands of the cells becomes increasingly difficult and the individual can become exhausted.

Anaemia isn't a disease itself, but the result of a malfunction somewhere in the body. Females are particularly susceptible to anaemia, with some estimates suggesting that around one in five menstruating females and half of all pregnant females are anaemic. Youth experiencing puberty are also at an increased risk as blood volume increases, which increases the demand for red blood cells and haemoglobin.

How are blood cells produced?

Blood cells are constantly being produced in the bone marrow, at a rate of millions per second. Bone marrow is a spongy tissue in the cavities of bones that is responsible for generating the key components of blood, including red blood cells. Bone marrow requires certain nutrients, including iron, folate and vitamin B12, to be able to create red blood cells.

In Australia, iron deficiency is one of the most common causes of anaemia. If there is not enough iron in the diet, the body will use stored supplies from the liver. Once this reserve is used up, the bone marrow will not be able to make enough haemoglobin and anaemia may result.

What causes anaemia?

Anaemia can have many causes, and although commonly associated with a deficiency in iron, folate and/or vitamin B12, anaemia can also occur as the result of:

- malabsorption — this occurs when the nutrients that are consumed are not able to be used. It can be caused by conditions such as coeliac disease.
- inherited disorders — some blood disorders such as thalassaemia and sickle cell disease can be inherited from parents and can lead to anaemia
- chronic conditions — conditions such as rheumatoid arthritis and tuberculosis can contribute to anaemia
- bone marrow conditions — such as cancer or infection
- blood loss — due to injury, surgery, cancer, stomach ulcers, heavy periods or giving blood frequently
- rapid growth or times during which large amounts of energy are required — such as puberty or while pregnant.

What are the symptoms of anaemia?

Depending on the severity, the symptoms of anaemia can include:

- pale skin
- tiredness
- weakness
- shortness of breath
- blood pressure drops on standing up suddenly — sometimes caused by blood loss, such as during a heavy menstrual period
- headaches
- fast pulse
- irritability
- difficulty concentrating
- cracks or redness of the tongue
- appetite loss
- strange food cravings (including the desire to eat dirt or rice, a condition known as *pica*).

How is anaemia treated?

Treatment for anaemia depends on the severity and the cause of the condition. In any case, the cause must be addressed in addition to treating the symptoms.

Vitamin and mineral supplements may be required in the case of dietary deficiency. Iron injections may be required if iron levels are particularly low. Note that iron supplements should be used only under the direction of a

doctor. The human body does not excrete iron efficiently, which can contribute to iron poisoning if the dose is not monitored.

How can anaemia be prevented?

Anaemia caused by deficiencies in dietary intake can be prevented by making sure that certain foods are consumed on a regular basis, including lean meats, nuts and legumes, fruit and vegetables and dairy products. Those who do not consume any animal products (known as vegans) may have to increase their intake with fortified foods or vitamin and mineral supplements.

Anaemia caused by an underlying health condition may not be able to be prevented as it is caused by a fault in the cell-making process. Treatments are available to relieve the symptoms in these cases.

Source: Adapted from www.betterhealth.vic.gov.au

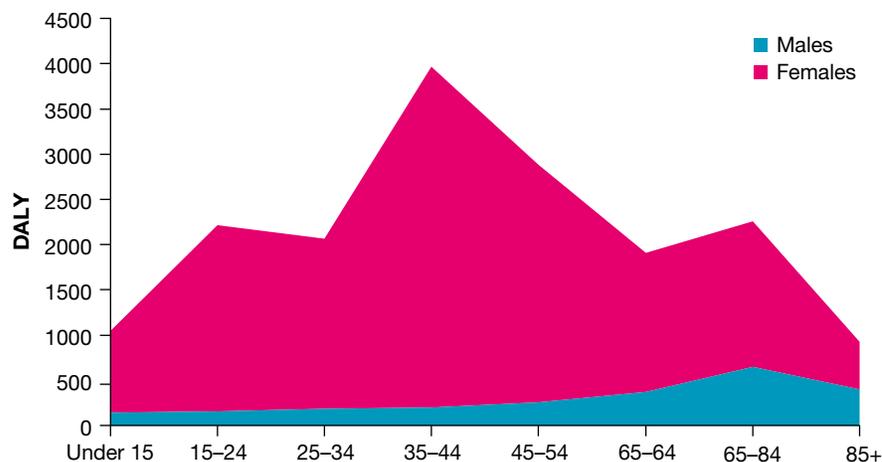
CASE STUDY REVIEW

1. Briefly explain anaemia.
2. Discuss haemoglobin and the role it plays in the body.
3. How might someone know if they are anaemic?
4. Explain how anaemia could impact on the health and wellbeing of youth.
5. Discuss why female youth are more susceptible to anaemia than male youth.
6. Discuss why youth is a higher risk lifespan stage for anaemia than adulthood.

In 2015, iron deficiency contributed over 17 000 years of healthy life lost, with most of the burden attributed to females under the age of 45 (see **FIGURE 3.60**). In females aged 0–14, iron deficiency was the second largest cause of burden of disease, responsible for 1 per cent of the burden of disease. In females aged 25–24, iron-deficiency was the sixth leading cause of burden of disease, contributing 1.6 per cent of the total burden in this age group. For females aged 25–44, low intake of iron was the tenth leading cause of burden of disease, contributing to 1.5 per cent of the total burden experienced.

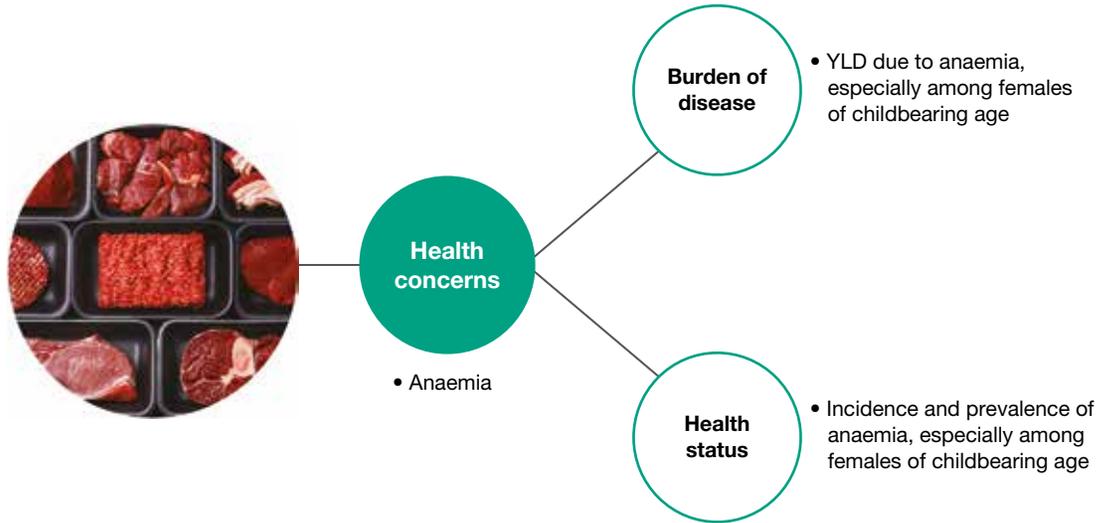
Some 99.1 per cent of the burden attributable to iron deficiency was due to non-fatal outcomes, and 86 per cent of the total burden was experienced by females.

FIGURE 3.60 Burden (DALY) attributable to low intake of iron by age and sex, 2015



Source: Adapted from <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/data>

FIGURE 3.61 Summary of the impact of low intake of iron on health status and burden of disease



3.7 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

3.7 Quick quiz

on

3.7 Exercise

3.7 Exam questions

Select your pathway

■ LEVEL 1

1, 4

■ LEVEL 2

2, 3, 6, 7

■ LEVEL 3

5, 8

Test your knowledge

- Identify and briefly explain the difference between the two types of fibre.
- Explain how low fibre intake can contribute to disease.
- For which process is iron particularly important?
 - Outline the role iron plays in the process identified in part a.
- Explain why iron intake should come from a variety of foods.
- For which disease does low fibre intake contribute the greatest DALY?
 - Outline the role low fibre intake plays in the development of the condition identified in part a.
- Complete the following table:

	Link/s to health status	Link/s to burden of disease
Low intake of fibre		
Low intake of iron		

Apply your knowledge

- Which population group is most susceptible to low levels of iron? Discuss possible reasons for this.
- Outline two ways that reducing low intake of iron could act as a resource for individuals.

Question 1 (2 marks)

Source: VCE 2019, Health and Human Development Exam, Q.3; © VCAA

List two major food sources that contain the mineral iron.

Question 2 (2 marks)

Describe how consuming adequate amounts of fibre each day reduces burden of disease.

Question 3 (2 marks)

Describe how a low intake of iron could impact on social and mental health and wellbeing.

Question 4 (1 mark)

Review the data table.

Burden (number and percentage of linked disease) attributable to diet low in fibre by disease, 2011

Linked disease	DALY	
	Number	Per cent
Coronary heart	34 206	9.9
Bowel cancer	8982	9.7
Total	43 188	1.0

Note: The per cent column refers to the proportion of burden attributable to low intake of fibre for each disease.

What proportion of burden of disease attributable to bowel cancer occurred as a result of low intake of fibre?

More exam questions are available in your learnON title.

3.8 Review

3.8.1 Topic summary

- Around 30 per cent of the total burden of disease in Australia is due to smoking, alcohol, high body mass index, and dietary risks (underconsumption of vegetables, fruit and dairy foods; high intake of fat, salt and sugar; low intake of fibre and iron).

3.2 Smoking

- Although the rate of tobacco smoking has decreased, it still remains a leading preventable contributing factor to premature death from conditions such as cancer, cardiovascular disease, respiratory conditions such as emphysema, low birth weight and infectious diseases.

3.3 Alcohol

- Alcohol consumption can impact health status and burden of disease by increasing the risk of high body mass index and associated conditions, liver diseases, injuries, a range of cancers, mental health issues, premature birth, low birth weight and foetal alcohol spectrum disorder (FASD).

3.4 High body mass index

- High body mass index contributes to health status and burden of disease in Australia by increasing the rates of a number of conditions including cardiovascular disease, some cancers, type 2 diabetes, chronic kidney disease, osteoarthritis and osteoporosis, asthma, mental health issues and maternal health conditions.
- Rates of high body mass index in Australia have increased over time.

3.5 Underconsumption of vegetables, fruit and dairy foods

- Underconsumption of vegetables and fruit in Australia are a concern due to the relationship between low intake of these foods and increased risks of high body mass index, cancer, cardiovascular disease, type 2 diabetes and neural tube defects.
- Underconsumption of dairy increases the risk of a range of conditions, particularly osteoporosis. Other conditions with underconsumption of dairy as a risk factor include cardiovascular disease, colorectal cancer, type 2 diabetes and dental caries.

3.6 Dietary risks of high intake of fat, salt and sugar

- High intake of fat contributes to weight gain and a range of related conditions. Of the four fats, monounsaturated and polyunsaturated fats are considered healthier fats than saturated and trans fats.
- High intake of saturated fats is of particular concern in Australia, and burden of disease could be improved by replacing saturated fats with monounsaturated and polyunsaturated fats.
- Monounsaturated fats decrease LDL (or 'bad') cholesterol and play a part in protecting people from cardiovascular disease.
- Polyunsaturated fats increase HDL (or 'good') cholesterol and decrease LDL cholesterol. Polyunsaturated fats also reduce blood clotting and inflammation, and decrease the risk of cardiovascular disease as a result.
- Trans and saturated fats increase LDL cholesterol and therefore increase the risk of cardiovascular disease. Trans fats also interfere with cell membranes and can contribute to impaired glucose regulation.
- Salt is a major source of sodium, and this can increase the risk of hypertension. Other conditions linked to high intake of sodium include heart failure, stroke and heart attack, and osteoporosis.
- High intake of sugar contributes to high body mass index and related conditions. Sugar can also contribute to the decay of teeth and is a significant cause of morbidity among children. The consumption of sweetened drinks is of particular concern in Australia.

3.7 Dietary risks of low intake of fibre and iron

- Fibre is a type of carbohydrate that is essential for the health of the digestive system. It does not contribute any energy to the body because it passes through without being digested. Low intake therefore increases the risk of high body mass index and related conditions.

- Fibre also assists in reducing blood glucose and cholesterol levels, and promoting digestive health. Low intake is therefore a risk factor for cardiovascular disease and colorectal cancer.
- Iron forms the 'haem' part of haemoglobin, which is the oxygen carrying part of blood. A person who does not get enough iron may develop iron-deficiency anaemia, a leading cause of morbidity among females under the age of 45.

Resources

 **Digital document** Summary (doc-36138)

3.8.2 Key terms

Anaemia a condition characterised by a reduced ability of the body to deliver enough oxygen to the cells due to a lack of healthy red blood cells

Antioxidants compounds in foods that neutralise free radicals

Atherosclerosis the build-up of plaque on blood vessel walls, making it harder for blood to get through

Body mass index (BMI) a statistical measure of body mass calculated by dividing weight (in kilograms) by height (in m²)

Cholesterol a type of fat required for optimal functioning of the body that in excess can lead to a range of health concerns including the blocking of the arteries (atherosclerosis). Can be 'bad' low-density lipoprotein (LDL) or 'good' high density lipoprotein (HDL).

Dental caries decay of teeth caused by a breakdown in the tissues that make up the tooth

Energy dense (foods) foods that contain significant amounts of fat, carbohydrates and/or protein, therefore contributing large amounts of energy to the diet

Fortified (foods) when a nutrient has been artificially added to food to increase its nutritional value

Free radicals molecules formed when oxygen is metabolised. Free radicals can damage healthy body cells and increase the risk of diseases such as cardiovascular disease and cancer.

Hypertension high blood pressure

Neural tube defects conditions characterised by damage to the brain and spine, and to the nerve tissue of the spinal cord during prenatal development. Examples include spina bifida and anencephaly.

Nutrient dense (foods) foods that contain a large amount of nutrients such as vitamins and minerals

Periodontitis a condition characterised by inflammation and infection of the tissues that support the teeth

3.8.3 Extended response: build your exam skills

tIvd-2879

Interpreting stimulus material

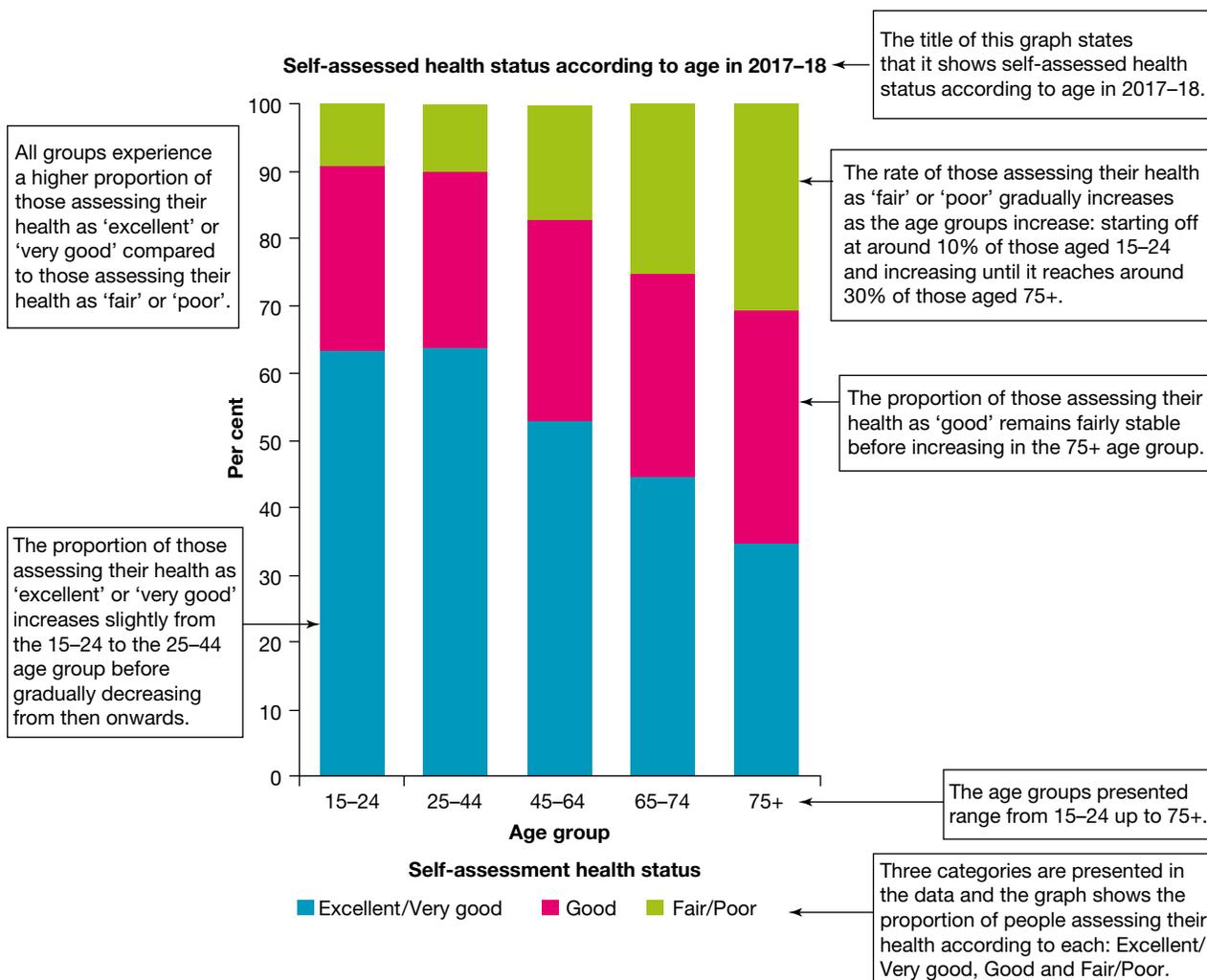
Stimulus material is designed to provide information about a relevant concept. Stimulus material can be presented in a range of formats, including infographics, graphs, tables, cartoons, maps and text, including factual and fictional case studies.

Stimulus material in extended response questions requires interpretation to determine what the information is presenting and how it should be used in the response. This includes finding trends, relationships, similarities and/or differences in data, understanding case study material and interpreting the meaning of visual material such as infographics.

In this section, a number of stimulus items presenting various data will be presented and interpreted.

Stimulus material 1

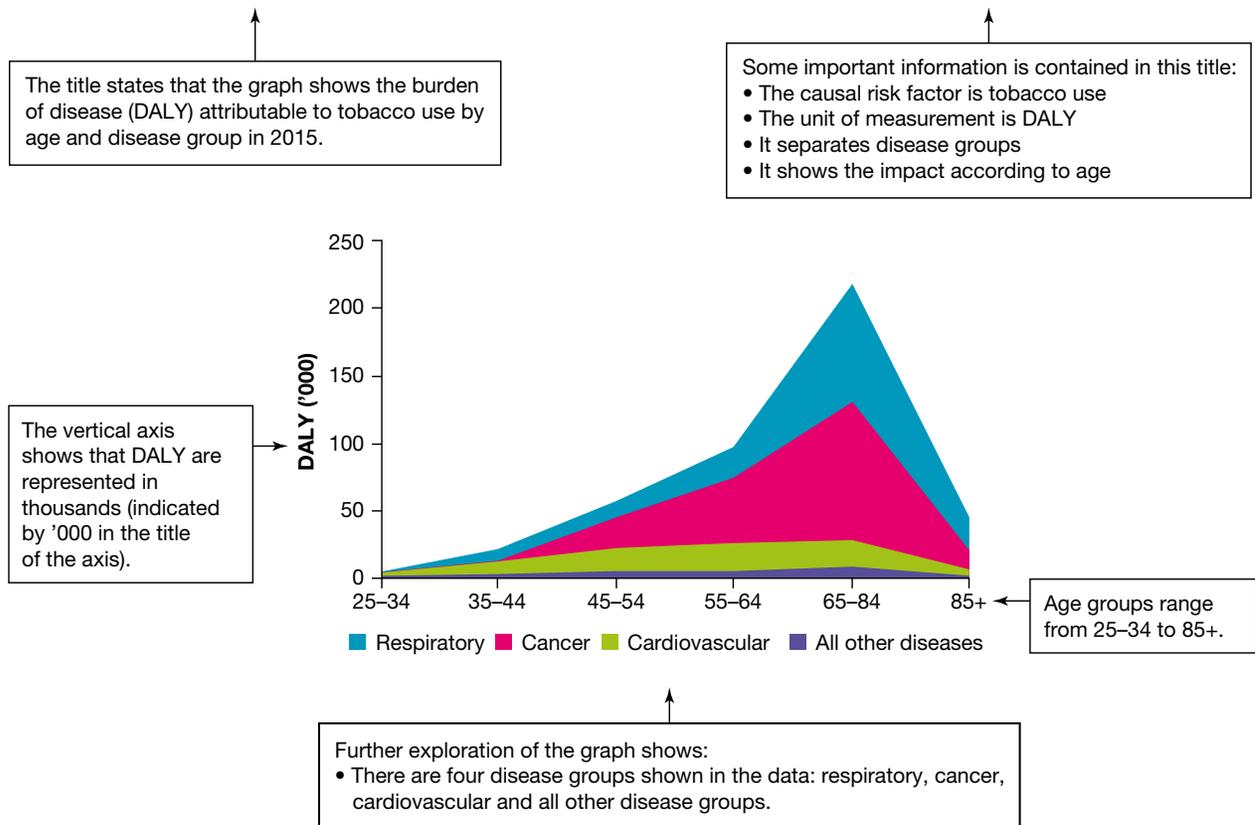
SOURCE 1 Self-assessed health status according to age group, 2017–18



Stimulus material 2

Consider the following graph:

SOURCE 2 Burden of disease (DALY) attributable to tobacco use by age and disease group in 2015



This particular graph is a stacked graph, which shows the contribution of a range of categories to the total. For example, there were around 220 000 DALY for those aged 65–84. Of the 220 000 DALY for this age group, around:

- 20 000 were due to cardiovascular disease
- 100 000 were due to cancer
- 90 000 were due to respiratory disease.

Some other observations from this graph include:

- Overall DALY increase until reaching a peak of around 220 000 DALY for those aged 65–84.
- Cardiovascular disease plateaued between the 45–54 and 65–84 age groups.
- Cancer and respiratory diseases peaked in the 65–69 age group.
- DALY for cancer increased with age group before decreasing significantly in the 85+ age group.
- The first four age groups consist of people of 10 different ages whereas the 65–84 group includes people of 20 different ages and the 85+ age group, which includes all people aged 85 and above. As a result, the population sizes in each group may not be equal, meaning that the graph doesn't show the rate, just the total number contributed by each group.

Practise this skill

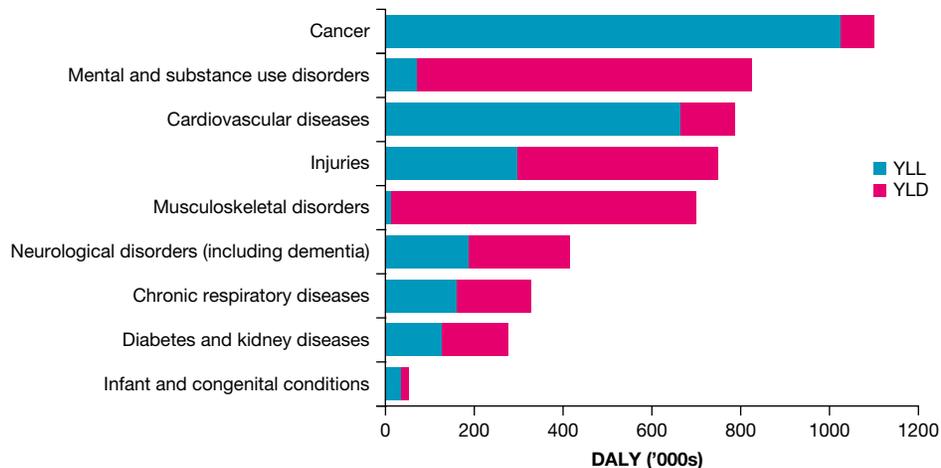
Interpret the following data and create a list of information it is presenting and then share your list with a classmate.

SOURCE 1 Life expectancy for males and females of selected ages, 2019

Age	Males	Females
0 (birth)	80.9	85.0
15	81.3	85.4
30	81.8	85.6
45	82.5	86.1
60	84.1	87.1
75	87.4	89.4
90	94.4	95.1

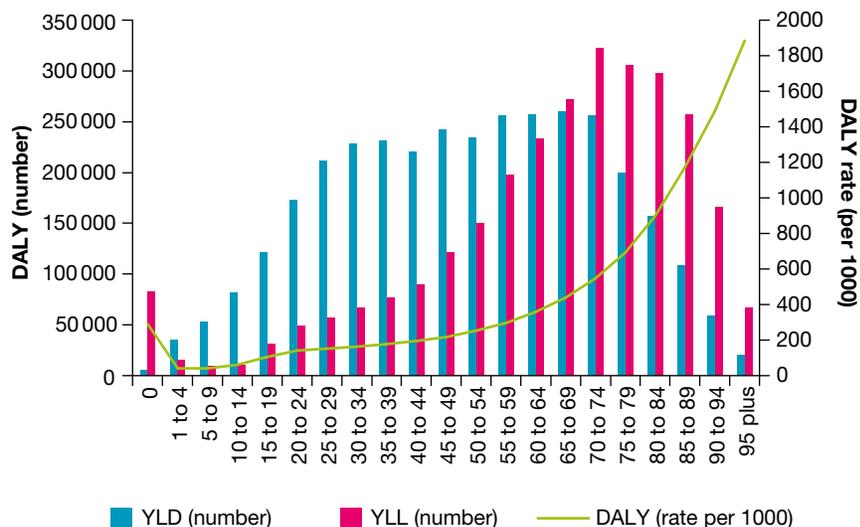
Source: ABS, *Life tables, States, Territories and Australia, 2017–19*.

SOURCE 2 Burden of disease (DALY, YLL And YLD) for major disease groups, 2019



Source: Adapted from Institute for Health Metrics and Evaluation (IHME), Global Burden of Disease Study 2019 (GBD 2020).

SOURCE 3 Burden of disease (DALY, YLL and YLD) by age group



Source: Adapted from Institute for Health Metrics and Evaluation (IHME), Global Burden of Disease Study 2019 (GBD 2020).

3.8 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

3.8 Exam questions

3.8 Exam questions

Question 1 (3 marks)

Source: VCE 2019, *Health and Human Development Exam*, Q.4; © VCAA

As part of National Nutrition Week, Nutrition Australia launched the annual Tryfor5 campaign, which is designed to encourage Australians to increase their vegetable consumption to the recommended five serves per day.

Explain how consuming the recommended five serves per day of vegetables would have an impact on the burden of disease in Australia.

Question 2 (2 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.5.c; © VCAA

Oliver is a 51-year-old male. He smokes 10 cigarettes a day and has a minimal alcohol intake. Oliver's body weight is quite high and he has little time to exercise. Oliver has been diagnosed with high cholesterol and he suffers from hypertension, placing him at risk of cardiovascular disease.

Oliver has been advised by his doctor to make changes to his diet to reduce his sodium intake.

Identify one major food source of sodium. Outline the role sodium plays in increasing the risk of cardiovascular disease.

Question 3 (4 marks)

In 2015, cancer was the leading contributor to burden of disease in Australia, accounting for 19 per cent of the total burden (AIHW, 2016).

Identify two factors and explain how each may have contributed to this outcome.

Question 4 (4 marks)

Explain two ways that high body mass index contributes to Australia's health status.

Question 5 (2 marks)

Explain how low intake of iron contributes to the burden of disease in Australia.



Resources



Digital document

Key terms glossary (doc-36125)



Exam question booklet

Topic 3 Exam question booklet (eqb-0057)



Interactivities

Crossword (int-6883)
Definitions (int-6884)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 3 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 3.1 Key terms glossary (doc-36125)
- 3.2 Smoking worksheet (doc-32190)
- 3.3 Impacts of alcohol worksheet (doc-32191)
- 3.8 Summary (doc-36138)
- Key terms glossary (doc-36125)

Exam question booklets

- 3.1 Topic 3 Exam question booklet (eqb-0057)
- 3.8 Topic 3 Exam question booklet (eqb-0057)

Weblinks

- 3.2 Smoking
- 3.3 Impacts of alcohol

Teacher-led videos

- 3.8 Extended response: build your exam skills (tvd-2879)

Interactivities

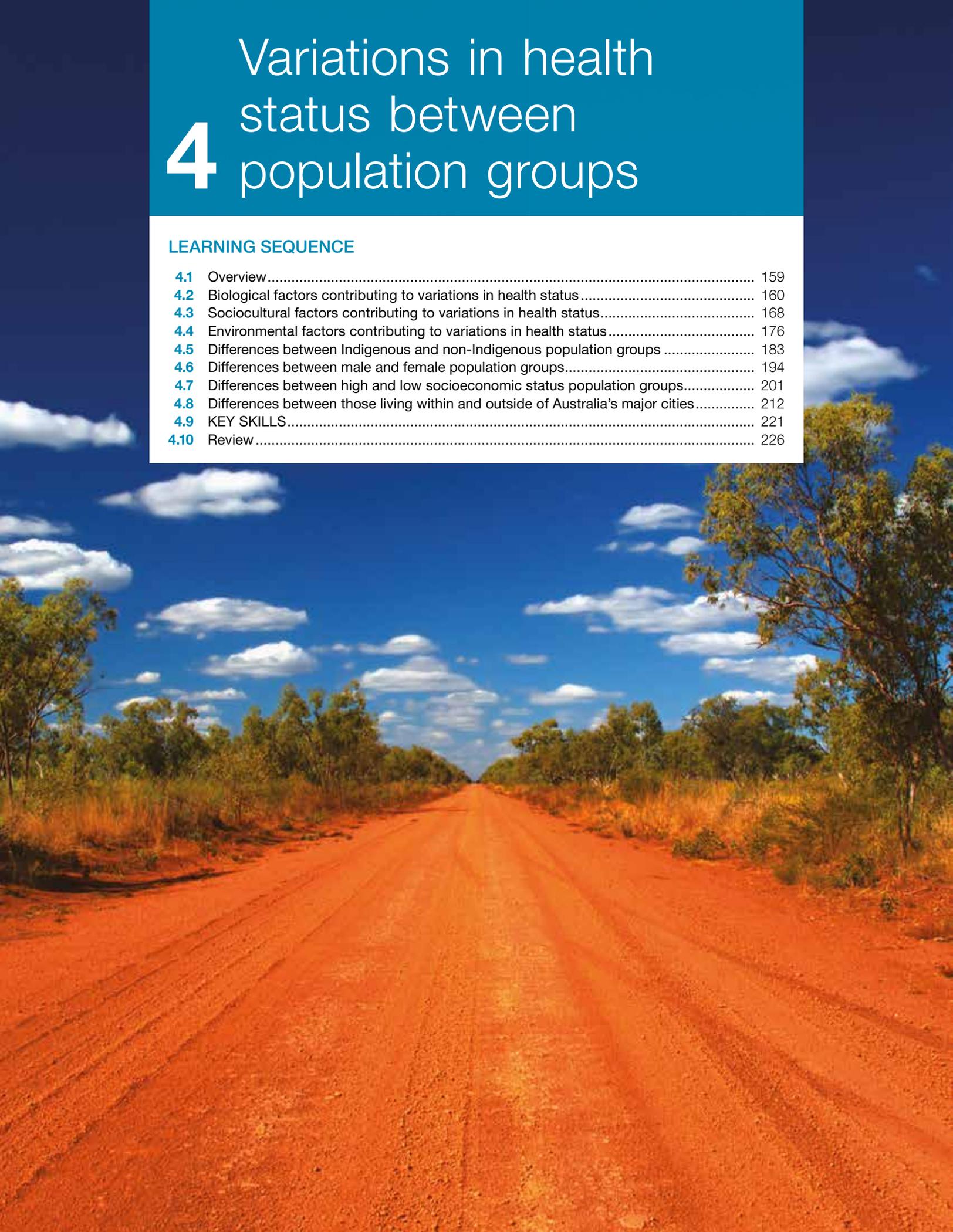
- 3.2 Burden attributable to tobacco use according to disease and age group, by total DALY (a) and rate per 1000 people (b), 2015 (int-8494)
- 3.3 Burden attributable to alcohol use according to disease and age group, by total DALY (a) and rate per 1000 people (b), 2015 (int-8495)
- 3.4 Burden (%) attributable to high body mass, selected conditions, 2015 (int-8496)
- Burden attributable to high body mass according to disease and age group, by total DALY (a) and rate per 1000 people (b), 2015 (int-8497)
- 3.8 Crossword (int-6883)
- Definitions (int-6884)

To access these online resources, log on to www.jacplus.com.au.

4 Variations in health status between population groups

LEARNING SEQUENCE

4.1	Overview.....	159
4.2	Biological factors contributing to variations in health status.....	160
4.3	Sociocultural factors contributing to variations in health status.....	168
4.4	Environmental factors contributing to variations in health status.....	176
4.5	Differences between Indigenous and non-Indigenous population groups.....	183
4.6	Differences between male and female population groups.....	194
4.7	Differences between high and low socioeconomic status population groups.....	201
4.8	Differences between those living within and outside of Australia's major cities.....	212
4.9	KEY SKILLS.....	221
4.10	Review.....	226



4.1 Overview

Key knowledge	Key skills
Health status of Australians and the biological, sociocultural and environmental factors that contribute to variations between population groups including: <ul style="list-style-type: none">• males and females• Indigenous and non-Indigenous• high and low socioeconomic status• those living within and outside of Australia's major cities	Analyse patterns in morbidity and mortality in Australia over time Analyse health information to explain factors that contribute to variations in health status between population groups

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Biological factors	Social exclusion
Environmental factors	Sociocultural factors
Food security	Socioeconomic status
Health literacy	

Exam terminology

Analyse Examine the components of; Look for links, patterns, relationships and anomalies

Explain Make plain, make clear (may require reasons)

Resources

 Digital document	Key terms glossary (doc-35917)
 Exam question booklet	Topic 4 Exam question booklet (eqb-0047)

4.2 Biological factors contributing to variations in health status

KEY CONCEPT Understanding the biological factors contributing to variations in health status

In topic 3, a range of particularly influential factors that contribute to health status and burden of disease in Australia were explored. In addition to these factors, there are a range of influences that contribute to differences in health status among population groups within Australia. These factors can be sorted into one of three categories:

- biological
- sociocultural
- environmental.

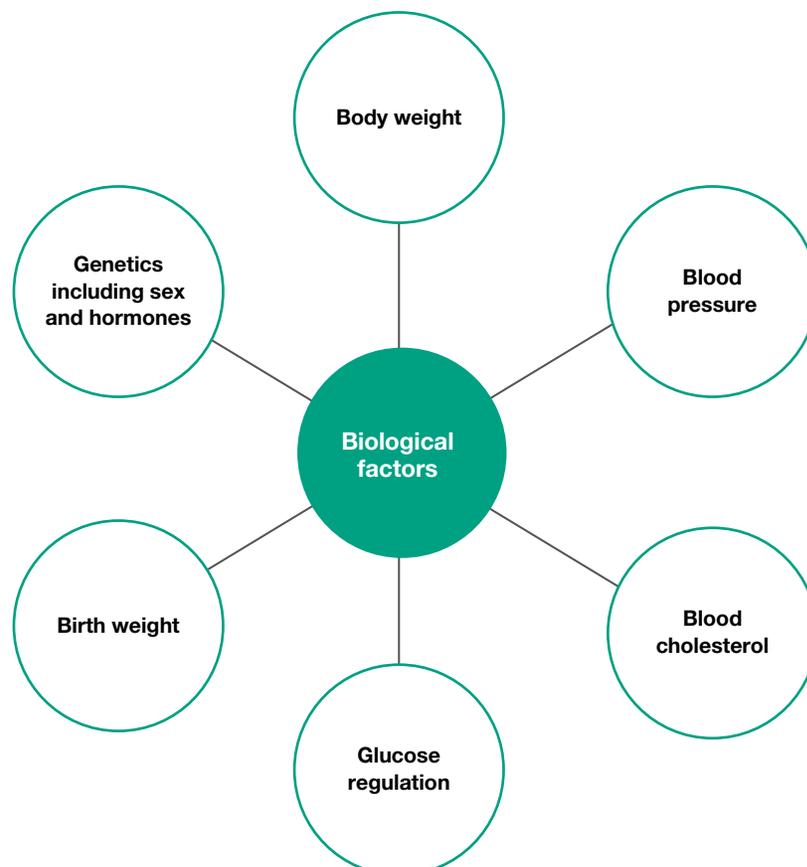
These categories and the factors that relate to each will be explored so the differences in health status between population groups in Australia can be analysed and explained. We begin with biological factors.

Biological factors relate to the structure of the cells, tissues and systems of the body and how adequately they function. There is a range of biological factors and, although many are the outcome of various sociocultural and environment factors, there is often a genetic influence that cannot be controlled. In some cases, examples of biological factors are also examples of physical health and wellbeing, such as body weight, blood pressure, blood cholesterol and blood glucose levels.

Biological factors factors relating to the body that impact on health and wellbeing, such as genetics, body weight, blood pressure, cholesterol levels, birth weight

The biological factors explored in this subtopic are shown in **FIGURE 4.1**.

FIGURE 4.1 The biological factors that impact health status



4.2.1 Body weight

The impact of high body mass index on the health status and burden of disease of the Australian population was explored in subtopic 3.4. High body mass, which includes being overweight and obesity, is also responsible for a range of differences in health status between population groups within Australia.

A biological factor, high body mass can impact on health and wellbeing and influence other biological factors. It therefore contributes significantly to variations in health status between individuals and population groups. For example, obesity increases the chances of developing high blood pressure, high blood cholesterol and impaired glucose regulation (which are also biological factors). Other health concerns associated with high body mass include:

- cardiovascular disease
- some cancers (including colorectal cancer)
- respiratory problems
- type 2 diabetes
- arthritis
- self-esteem issues and depression
- social exclusion.

4.2.2 Blood pressure

As blood circulates around the body through the blood vessels, it applies pressure to the blood vessel walls (see **FIGURE 4.2**). As the heart contracts and the blood is pushed around the body, this pressure increases. As the heart relaxes and fills with more blood, the pressure on the walls decreases. Blood pressure is simply a measure of these two levels of pressure.

A person with high blood pressure has hypertension, a common health concern throughout the world. The blood of a person with hypertension does not flow through the blood vessels as easily as that of someone with normal blood pressure. This may mean that their heart and kidneys, which regulate blood pressure and filter the blood, have to work harder, and blood flow may be restricted. Hypertension is a contributing factor to many conditions, including cardiovascular diseases such as heart attack and stroke, and kidney failure. These conditions cause many deaths in Australia. Hypertension has been called the ‘silent killer’ because it has no symptoms. Regular checkups are the only way to monitor blood pressure. Hypertension can be controlled with medication and lifestyle changes.

The risk factors for hypertension are:

- high body mass
- lack of physical activity
- stress
- smoking
- excessive alcohol consumption
- **genetic predisposition**
- poor diet (in particular, excess sodium).

Individuals and population groups that display higher rates of these risk factors are more likely to experience hypertension, which in turn increases their risk of associated health concerns such as cardiovascular disease and kidney failure.

FIGURE 4.2 Blood pressure is the force exerted on the blood vessel walls.

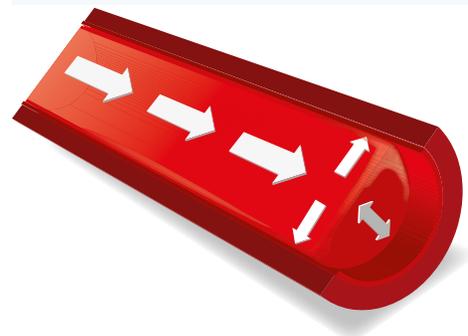


FIGURE 4.3 Regular checkups are required to monitor blood pressure.



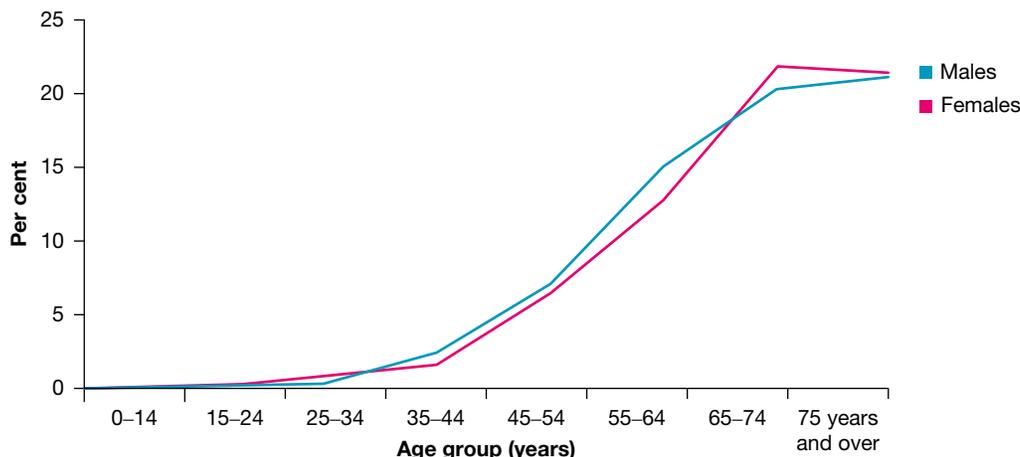
Genetic predisposition an increased likelihood of developing a particular disease based on a person's genetic makeup (often indicated by a person's family history of disease)

These risk factors often occur in conjunction with each other, which further increases the risk among some individuals and population groups.

4.2.3 Blood cholesterol

Cholesterol is a type of fat that was discussed in section 3.6.1, and high blood cholesterol is a biological factor that contributes to many differences in health status between population groups. Too much LDL cholesterol is a key risk factor for cardiovascular disease, particularly heart attack and stroke. The incidence of high blood cholesterol increases with age (see **FIGURE 4.4**).

FIGURE 4.4 Proportion of people with high blood cholesterol according to sex, 2017–18



Source: National Health Survey: First Results, 2017–18.

Blood cholesterol can be checked by a simple blood test. Lifestyle changes can sometimes reverse high levels of blood cholesterol. However, if the main contributor is a genetic predisposition, medication may be required to bring cholesterol levels down.

A range of factors can increase the risk of high blood cholesterol, including:

- excessive alcohol intake
- smoking
- a diet high in saturated fat and/or trans fats
- a lack of exercise
- high body mass index
- genetic predisposition.

4.2.4 Glucose regulation

Glucose is the preferred fuel for energy within the cells. Glucose is usually obtained from breaking down carbohydrates. When carbohydrates are eaten, the resulting glucose is absorbed into the bloodstream. When blood glucose levels rise, insulin is released from the pancreas to allow the glucose to travel from the bloodstream into the cells to be used for energy (see **FIGURE 4.5**).

A range of factors can impact on this mechanism and contribute to the cells becoming resistant to the action of insulin, preventing glucose from being absorbed into the cells.

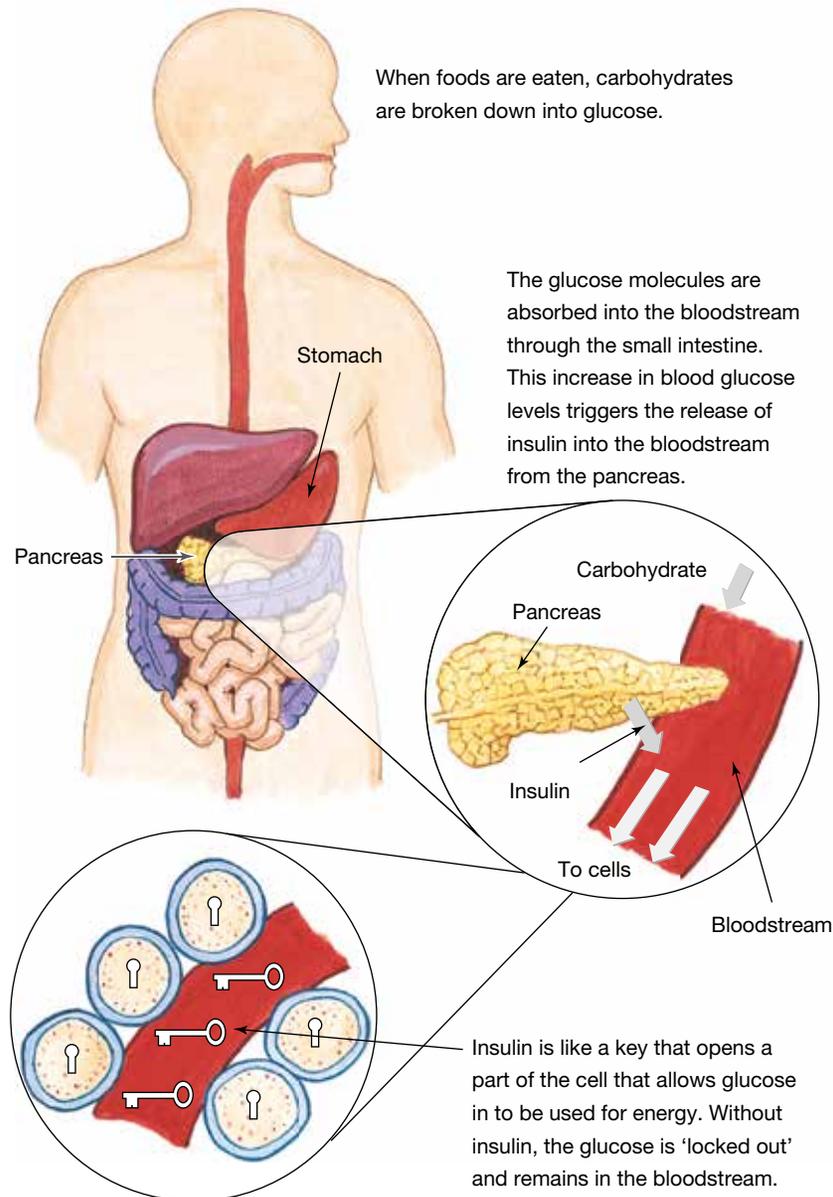
This is known as impaired glucose regulation (or insulin resistance). Impaired glucose regulation is seen as a precursor to type 2 diabetes.

Impaired glucose regulation can occur as a result of:

- genetic predisposition
- stress

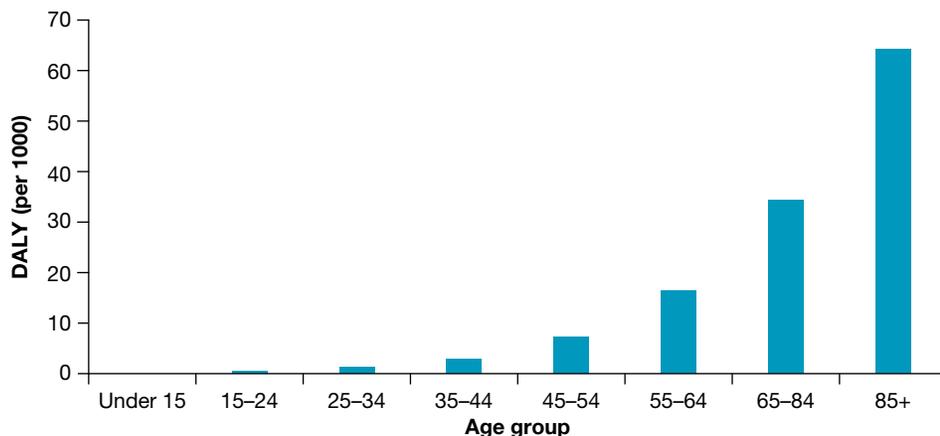
- pregnancy
- lack of exercise
- smoking
- high body mass (particularly if excess weight is stored around the abdomen)
- a diet high in fat, particularly trans fat
- excessive alcohol consumption
- high LDL cholesterol
- high blood pressure.

FIGURE 4.5 How insulin acts on glucose



Individuals and population groups who display the risk factors associated with impaired glucose regulation experience higher rates of cardiovascular disease and type 2 diabetes. These conditions can contribute to significant differences in health status, such as higher rates of heart attack, stroke, kidney disease and premature death. The impact of impaired glucose regulation increases with age (see **FIGURE 4.6**).

FIGURE 4.6 Burden of disease (rate of DALY per 1000) attributed to impaired glucose regulation by age group, 2015



Source: Adapted from ABS, <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden>

Treatment for impaired glucose regulation consists of lifestyle changes such as losing weight, quitting smoking, managing stress and eating a healthy diet.

4.2.5 Birth weight

Birth weight contributes to variations in health status among individuals and population groups. Birth weight is related to health outcomes directly after birth and later in life. Babies born with a **low birth weight** (less than 2.5 kilograms) are more likely to have an underdeveloped immune system, making them more susceptible to infections. They are also more likely to suffer from premature death and significant disabilities such as speech and learning disabilities.

Studies suggest that low birth weight can also contribute to health concerns in adulthood such as:

- high blood pressure
- type 2 diabetes
- cardiovascular disease.

There are many causes of low birth weight including:

- *Premature birth.* Less time spent in the uterus means less time to grow and develop.
- *Age of the mother.* Young mothers (especially those under 15 years of age) and older mothers (those over 45 years of age) have higher rates of low birth weight babies.
- *The mother's nutritional status.* An inadequate supply of nutrients can lead to underdevelopment of the foetus.
- *Smoking, excessive alcohol consumption and drug use by the mother during pregnancy.* Use of these substances has been shown to reduce foetal growth.
- *Illness of the mother during pregnancy.* Infections in the uterus can lead to early labour, while other infections, such as chickenpox and rubella, can cause slowed growth.

FIGURE 4.7 Babies born with a healthy weight are at lower risk of having a number of conditions in early and later life.



Low birth weight weighing less than 2500 grams (2.5 kilograms) at birth

4.2.6 Genetics

The genetic material contained in body cells controls many aspects of life that influence health status, such as sex, body type, hormone production and aspects of personality. A person's genetic blueprint and genetic potential are determined at **fertilisation**.

Sex

Certain conditions are either exclusive to males or females or are more common in one of the sexes due to the biological differences between the sexes, which is caused by genetics. Examples include:

- Women can't get prostate or testicular cancer.
- Men can't get ovarian cancer.
- Women are more likely to develop breast cancer (less than one per cent of all breast cancer cases occur in men), largely due to most women having more breast tissue than most men.

Hormones

Hormones regulate many processes in the body and control many aspects of health and wellbeing. Hormones are also responsible for the formation of male and female sex characteristics that lead to differences in some of the conditions experienced by males and females.

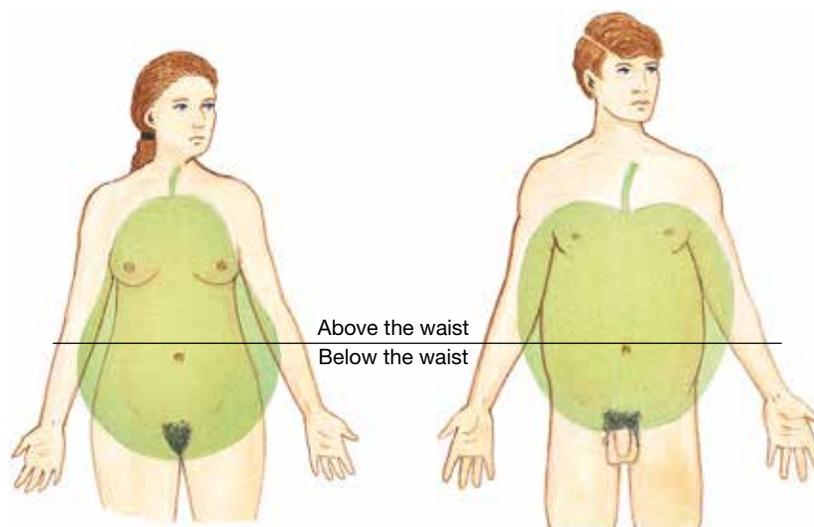
Males have a different combination of hormones to females, which could contribute to some of the differences in health concerns experienced by the two sexes. Of particular note are the hormones oestrogen and testosterone.

Oestrogen

Oestrogen is a key hormone needed for the regulation of the menstrual cycle in women. Oestrogen also helps to maintain bone density in women by keeping the bones strong, a role played by testosterone in males. When a woman enters **menopause**, the levels of oestrogen decline. This decline leads to a loss of bone mass from the skeletal system, which can contribute to osteoporosis — a disease characterised by weak, porous bones that are more susceptible to breaks and fractures. Although the levels of testosterone also decline in males as they age, they do not decrease to the same extent as oestrogen does in females, contributing to higher rates of osteoporosis among women. Oestrogen may have a protective role in the development of cardiovascular disease, which might explain the lower rates of this disease in women prior to menopause. Oestrogen is also linked to distribution and deposition of fat in the body. Oestrogen tends to result in fat being deposited around the buttocks and thighs (pear shape), whereas men and post-menopausal women tend to accumulate more fat around the abdomen (apple shape), increasing the risk of heart disease (see **FIGURE 4.8**).

Fertilisation the fusing of a sperm and egg cell. Marks the beginning of pregnancy. Also known as conception.
Menopause when the menstrual cycle stops permanently, ending the ability of a female to reproduce

FIGURE 4.8 Hormones are partly responsible for the body shapes that are characteristically male and female.



Testosterone

Testosterone is also known as the male sex hormone (even though it is also found in small quantities in females). Testosterone is mainly responsible for the male sex characteristics and the production of sperm, but may also play a role in increased risk-taking behaviours and aggression in males compared to females. Risks such as skylarking, violence and substance misuse can contribute to higher rates of injury and mortality for males compared to females.

EXAM TIP

When asked to identify and discuss the impact of a biological factor on health status you need to:

- identify a biological factor
- discuss how this factor contributes to ill health
- link to health status terms such as morbidity, mortality, etc.

For example:

Body weight — Being overweight or obese increases blood pressure and increases the risk of heart attack and stroke. This impacts on health status as cardiovascular disease is a leading cause of morbidity and mortality in Australia.

4.2 Activities

1. Access the **Blood pressure animation** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **Hypertension** weblink and worksheet in the Resources tab and then complete the worksheet.
3. Access the **Glucose regulation** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

 **Digital documents** Blood pressure animation worksheet (doc-32192)
Hypertension worksheet (doc-32193)
Glucose regulation worksheet (doc-32194)

 **Weblinks** Blood pressure animation
Hypertension
Glucose regulation

4.2 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

4.2 Quick quiz

on

4.2 Exercise

4.2 Exam questions

Select your pathway

■ LEVEL 1

1, 3, 4, 5, 7, 8, 9, 11, 12

■ LEVEL 2

2, 6, 13, 14, 16

■ LEVEL 3

10, 15

Test your knowledge

1. Identify three conditions that can occur as a result of high body mass.
2. a. What causes pressure on the walls of the blood vessels?
b. Explain why blood pressure changes with each beat of the heart.

3. What is hypertension?
4. What is the relationship between blood pressure and disease?
5. What is cholesterol?
6. Describe how high blood cholesterol rates change over the lifespan according to **FIGURE 4.4**.
7. What role does glucose play in the body?
8. What role does insulin play in the ability of the body to use glucose?
9. What two conditions are associated with impaired glucose regulation?
10. Describe the trend evident in **FIGURE 4.6**.
11. What weight is classified as low birth weight?
12. Identify three factors that increase the risk of giving birth to a baby with low birth weight.
13. Explain the role hormones can play in relation to health status.

Apply your knowledge

14. Complete the following table summarising the impact of biological factors on health status:

Biological factor	Explanation of impact/s	Impact on health status
High body mass/Overweight and obesity		
Hypertension		
High cholesterol levels		
Impaired glucose regulation		
Low birth weight		
Genetics		

15. Explain how high cholesterol could contribute to hypertension.
16. Using **FIGURE 4.1** as the basis of your response, create a mind map of the biological factors and include a brief description of their impacts on health status.

4.2 Quick quiz



4.2 Exercise

4.2 Exam questions

Question 1 (3 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.5.b (adapted); © VCAA

Oliver is a 51-year-old male. He smokes 10 cigarettes a day and has a minimal alcohol intake. Oliver's body weight is quite high and he has little time to exercise. Oliver has been diagnosed with high cholesterol and he suffers from hypertension, placing him at risk of cardiovascular disease.

Select one biological factor evident in the information provided above. **Explain** how this biological factor could increase the risk of cardiovascular disease.

Question 2 (2 marks)

Explain how one biological factor can affect physical health and wellbeing.

Question 3 (4 marks)

Identify two biological factors and describe how each impacts on health status.

Question 4 (6 marks)

List three examples of biological factors and **describe** how each may affect the health and wellbeing of an individual.

Question 5 (1 mark)

Outline how testosterone contributes to a variation in health status between males and females.

More exam questions are available in your learnON title.

4.3 Sociocultural factors contributing to variations in health status

KEY CONCEPT Understanding the sociocultural factors contributing to variations in health status

Sociocultural factors relate to the social and cultural conditions into which people are born, grow, live, work and age. The sociocultural factors examined in this subtopic are identified in **FIGURE 4.9**.

Many sociocultural factors are beyond the control of individuals, yet they have a significant impact on health status at an individual and population level.

People who experience poor sociocultural conditions experience worse health status in all societies. The gap between those at the top and those at the bottom of the sociocultural ladder has widened over the years, and those towards the bottom experience much worse health status. For this reason, sociocultural factors have now become the focus of most health authorities, who are trying to narrow the gap.

Too often, sociocultural factors interrelate, so that a person who experiences one of them is more likely to experience two or more of them when compared with people who are more fortunate. The longer the person lives in sociocultural distress, the more physiological wear and tear they will suffer, which ultimately means they are less likely to enjoy a healthy old age.

FIGURE 4.9 The sociocultural factors that contribute to variations in health status



Sociocultural factors the social and cultural conditions into which people are born, grow, live, work and age. These conditions include socioeconomic status, social connections, family and cultural norms, food security, early life experiences, and access to affordable, culturally appropriate healthcare.

Socioeconomic status the social standing of an individual in comparison to others in that society. It is based on education, income and occupation.

4.3.1 Socioeconomic status

Socioeconomic status (SES) refers to a person's position in society relative to other people based on three factors: income, occupation and education (see **FIGURE 4.10**). People who are more socioeconomically disadvantaged have poorer health status across most countries and cultures.

FIGURE 4.10 The three factors that determine socioeconomic status



All three components of socioeconomic status are related and affect each other. For example, a person who has a high level of education is more likely to work in a higher paying job. Such jobs usually carry greater status than lower paying jobs. As the level of education increases (for example, high school versus tertiary), in general, so does the status of occupation and the average income.

Income

Income can influence people's ability to access resources such as adequate housing, food, healthcare (including private health insurance), recreation, transport and education. These resources can assist people in maintaining a healthy body weight and preventing disease, staying socially connected and accessing healthcare when required, which can reduce morbidity and mortality rates.

Occupation

The occupation a person has also influences health status. Some occupations (including many trades) involve manual labour, which can increase the risk of soft tissue injuries and back pain. Other occupations are sedentary in nature (including many administrative roles), which can reduce levels of physical activity and increase the risk of obesity. There is also evidence of a relationship between occupation and mortality. People in manual occupations, such as builders and farmers, have higher mortality rates than those in managerial/professional occupations (Draper et al. 2004, *Health inequalities in Australia: mortality*). Manual workers (such as those working in factories) often come from a lower socioeconomic background and experience more occupational hazards than those in managerial/professional occupations.

Education

As well as influencing income and occupation, education impacts health status in a number of ways. Those who are more educated are more likely to be health literate, for example. **Health literacy** describes the degree to which individuals have the capacity to obtain, process and understand the basic health information and services needed to make appropriate health decisions. This can relate to healthy lifestyles and accessing healthcare when required, both of which promote health status and decrease the impact of preventable and treatable conditions including cardiovascular disease, some cancers, respiratory diseases and type 2 diabetes.

Low levels of health literacy contribute to those of low socioeconomic status being:

- less likely to take notice of health promotion messages, therefore increasing the risk of preventable diseases
- more likely to smoke and be obese due to poor nutrition and physical inactivity.

4.3.2 Unemployment

The link between unemployment and health status is well established. According to the AIHW (2006), 'the unemployed have a higher chance of dying and [suffer from] more illnesses than those of similar age who are employed'. In fact, the rates of suicide, lung cancer and cardiovascular disease are higher for those who are unemployed.

The effects of long-term unemployment on health status can be particularly serious, mainly due to psychological and financial factors (especially if the person falls into debt).

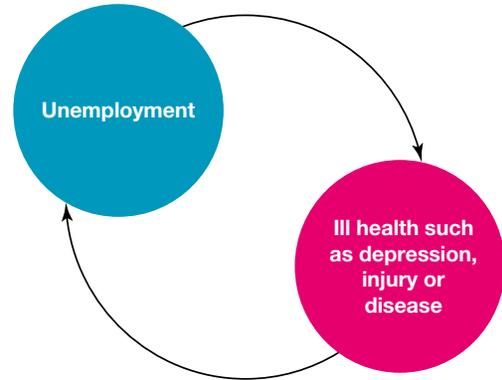
Health literacy the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions

The effect on health status can start even while the person is still working. An employee concerned about job security may begin to experience elevated levels of stress and anxiety before they even become unemployed. This can have a range of physiological implications, such as sleep problems and increased risk of cardiovascular disease (see **FIGURE 4.13**).

FIGURE 4.11 Unemployment can be stressful, and long-term unemployment can lead to a range of health issues, including a deterioration in mental health and wellbeing.



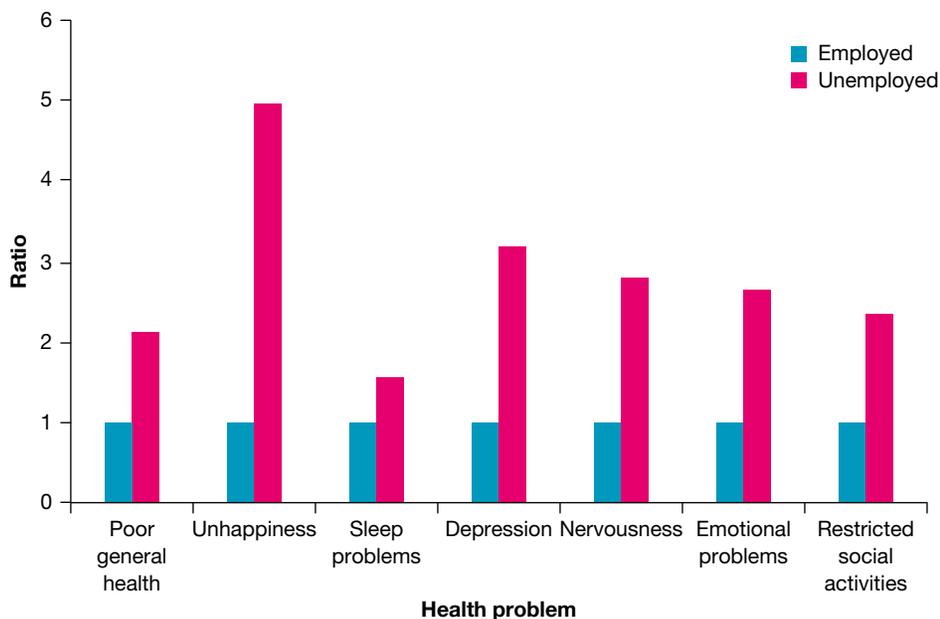
FIGURE 4.12 The cycle of unemployment and ill health.



There is a two-way relationship between health outcomes and unemployment. For some it is ill health that causes unemployment (such as an injury or disease), and for others it is unemployment that causes health problems (such as stress and depression). Despite the causal relationship, ill health and unemployment often create a cycle (see **FIGURE 4.12**).

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FIGURE 4.13 Some health problems associated with unemployment, compared with employment



Source: *Medical Journal of Australia*

4.3.3 Social connections and social exclusion

Social connections relate to the bonds between an individual and their relations, friends and acquaintances and the ability to participate in the society in which they live. Being socially connected has been associated with lower morbidity and increased life expectancy (Kawachi et al. 1997). The opposite of social connectedness is social exclusion, which contributes to significant variations in health status. **Social exclusion** refers to the segregation that people experience if they are not adequately participating in the society in which they live. It also includes those who experience feelings of disconnectedness and do not get opportunities to make use of the resources available to them in a society, such as education, employment, housing, healthcare and social security services. In the past, such people have been referred to as ‘social outcasts’.

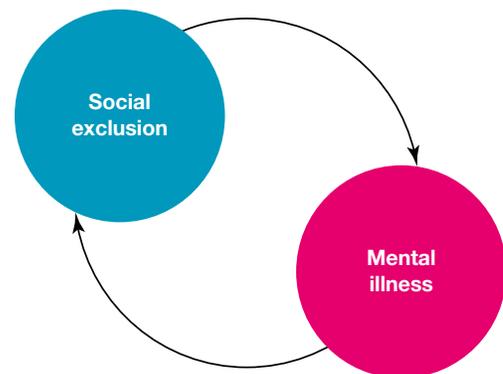
The causes of social exclusion are often the result of social exclusion as well. Therefore, the sufferer can find themselves in a vicious cycle (see **FIGURE 4.15**). Social exclusion can be caused by, or contribute to, a range of characteristics, including:

- increased risk-taking behaviours, such as alcohol and drug misuse
- poor physical and mental health and wellbeing, including increased risk of mental disorders
- disability
- inability to access services such as healthcare, education, employment and social security
- family breakdown
- homelessness
- discrimination, including racism
- low income.

FIGURE 4.14 Social exclusion can have significant effects on health and wellbeing.



FIGURE 4.15 One example of how social exclusion can form part of a cycle with other areas of health and wellbeing



4.3.4 Social isolation

Social isolation refers to not being in regular contact with others. Geographical barriers can prevent people from being able to interact with others and is an issue particularly for many people in remote areas. Disability, disease, lack of transport and communication barriers can also prevent people from socialising and contribute to social isolation, especially among the elderly and those from non-English speaking backgrounds.

Regular social contact gives people the opportunity to communicate and socialise, which can promote physical, social, emotional, mental and spiritual health and wellbeing. People who are isolated from others lack the emotional, psychological and health-related support that can improve health status. In times of difficulty, people who are socially isolated can feel they have no-one to turn to, and this can contribute to a range of mental health problems such as depression and stress.

Social exclusion the segregation that people experience if they are not adequately participating in the society in which they live
Social isolation refers to individuals who are not in regular contact with others

4.3.5 Cultural norms

Cultural norms relate to customs, ideas, values and traditions of a particular society that are passed through generations. Cultural norms that impact health status include gender stereotypes, food intake, attitudes and beliefs.

Gender stereotypes relate to behaviours that are culturally acceptable for males and females. Although many of these roles and expectations have broken down over the past decades, some cultures still retain distinct roles for males and females. These roles are learned from a very young age and shape many aspects of the wider society. Examples of stereotypes related to gender include:

- males working and females staying at home to look after the children
- males being ‘macho’ and needing to feel strong.

The dietary intake of cultural groups often evolves over a long period of time and influences the sorts of foods people consume. Changes to traditional diets can contribute to differences in health status. The traditional diet of Aboriginal and Torres Strait Islander peoples, for example, included low fat meats and a range of fruits and vegetables. The change in diet that accompanied European settlement contributes significantly to the high rates of obesity seen today in Aboriginal and Torres Strait Islander peoples.

Attitudes towards education and employment, recreation (including substance use such as alcohol consumption), and health and healthcare (including traditional medicine), all affect health status. The traditional medicine of Aboriginal and Torres Strait Islander peoples, for example, is culturally different from western medicine. This can reduce the ability of Aboriginal and Torres Strait Islander peoples to access culturally appropriate medicine in a society dominated by western practices.

Alcohol consumption is an accepted part of life for many Australians. This contributes to a range of negative health outcomes for many, especially males, who typically consume more alcohol than females. Alcohol consumption contributes to a range of conditions, including injuries, which males experience more than females.

4.3.6 Food security

The quality, availability and affordability of the food supply all affect what people eat. A shortage of such products (called **food insecurity**) can lead to deficiency diseases and other health complications. The other end of the scale is food plenty, which can contribute to people eating too much and therefore putting themselves at risk of diet-related diseases such as type 2 diabetes and cardiovascular disease.

FIGURE 4.16 Culture influences many factors that impact on health status, including food intake. This collection of nuts includes traditional foods of the Jawoyn Traditional Owners in northern Australia and are considered very healthy.



Food insecurity when healthy, affordable food is not obtainable

Although the environment has an impact on food availability (for example, when people live too far away from food outlets), sociocultural factors such as income and nutritional knowledge also have an effect. People who are unable to afford healthy foods may be forced to buy cheaper processed foods. These are often made from poorer quality produce and have added fat, salt and/or sugar in an attempt to add flavour to the product. Such additives increase the risk of diet-related diseases, including obesity and cardiovascular disease.

4.3.7 Early life experiences

Every person is, in part, a product of their past experiences. Such experiences help to shape each individual, their outlook on life and the behaviours they engage in throughout their lives.

Behaviours of women while they are pregnant are early life experiences for unborn babies that can contribute to a range of health issues. Maternal tobacco, alcohol and drug use, and maternal nutrition and exposure to certain chemicals, bacteria and viruses during pregnancy, can all have significant impacts on the individual after birth and into adulthood. Possible impacts on the baby include low birth weight, increased risk of infections and higher under-five mortality rates (U5MR). In later life, low birth weight can contribute to higher rates of cardiovascular disease and diabetes.

Having optimal growth and strong emotional attachment in the early years can assist physical, social, emotional, mental and spiritual health and wellbeing in adulthood.

Such experiences begin even before conception with the physical health and wellbeing of the mother, and become more important after conception and during pregnancy.

Infants who have experienced positive emotional stimulation are better prepared to take on the challenges of formal education and to exhibit positive behaviour, and are less likely to be socially excluded in adulthood. Infants who have had the best possible health and wellbeing are also more likely to have been exposed to healthy lifestyle choices such as a healthy food intake, a non-smoking environment and physical activity.

On the other hand, abuse or neglect during the early years affects brain function and development, and contributes to emotional and behavioural problems later in life, including tobacco and substance use. Slowed growth during infancy may lead to impaired cardiovascular, respiratory and kidney function, which can lead to ill health in later life.

FIGURE 4.17 Food security exists when people can obtain nutritionally adequate, culturally appropriate, safe food regularly through local, non-emergency sources.



FIGURE 4.18 Strong emotional attachment in the early years can promote positive health outcomes later in life.



4.3.8 Access to healthcare

Healthcare refers to services that promote and preserve health and wellbeing. These services diagnose, treat and/or manage disease and injury. In Australia, these services are carried out by doctors, nurses, scientists, dentists, pharmacists and other health professionals such as physiotherapists and naturopaths. These health professionals often work together in a hospital or medical centre.

Numerous factors can limit an individual's ability to access healthcare. Geographical access or proximity to health services is an environmental factor and will be explored in section 4.4.3, but there are many cultural, financial and other sociocultural barriers that prevent many Australians from accessing services they might otherwise use.

Some people who have geographical access to health services fail to use them. This may result from a lack of health literacy. Cultural barriers may influence an individual's access. Many Aboriginal and Torres Strait Islander peoples find it culturally inappropriate to access western medicine, and associate hospitals with death.

Patients are sometimes responsible for paying for healthcare services. Those with a low socioeconomic status may avoid healthcare as a result. According to the ABS (2020), the proportion of Australians who delayed or did not see a health professional due to cost in 2018–19 was around:

- 19 per cent for dentists
- 8 per cent for specialists
- 4 per cent for general practitioners.

Sociocultural barriers to healthcare can contribute to conditions going undiagnosed and untreated, which can result in a range of variations in health status including higher mortality rates and lower life expectancy.

4.3 Activity

Access the **Social justice** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

 **Digital document** Social justice worksheet (doc-32195)

 **Weblink** Social justice

4.3 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

4.3 Quick quiz



4.3 Exercise

4.3 Exam questions

Select your pathway

■ LEVEL 1

1, 3, 5, 6, 7

■ LEVEL 2

2, 4, 8, 9, 10, 16

■ LEVEL 3

11, 12, 13, 14, 15

Test your knowledge

1. What are the three components of socioeconomic status?
2. Discuss how:
 - a. unemployment can lead to ill health
 - b. ill health can lead to unemployment.

3. **a.** Explain the difference between social exclusion and social isolation. List three impacts of social exclusion.
b. List two possible causes of social isolation.
4. Outline three ways in which culture may contribute to differences in health status.
5. Define 'food security'.
6. Why are processed foods generally less healthy than fresh produce?
7. Why are processed foods often cheaper than fresh produce?
8. Discuss variations in health status that may occur as a result of food insecurity.
9. **a.** Make a list of ways parents can enhance the health and wellbeing of their child during pregnancy and in the first year after birth.
b. Outline three variations in health status that may occur as a result of early life experiences.
10. **a.** Outline the sociocultural factors that can affect a person's ability to access healthcare.
b. Discuss the variations in health status that may result from a lack of access to healthcare.

Apply your knowledge

11. Discuss how the three components of socioeconomic status can affect each other and how they combine to influence health status.
12. Discuss variations in health status that may occur as a result of being socially excluded and socially isolated.
13. **a.** Which resources may socially excluded people not get the opportunity to use?
b. How could not using these resources lead to ill health?
14. Describe one way that mental illness could lead to social exclusion, and one way that social exclusion could lead to mental illness.
15. 'A good start in life means supporting mothers and young children: the health impact of early development and education lasts a lifetime' (WHO, 2003). Draw a flowchart illustrating how conditions early in life could have lifelong effects.
16. Using **FIGURE 4.9** as the basis of your response, create a mind map of the sociocultural factors and include a brief description of their impacts on health status.

4.3 Quick quiz



4.3 Exercise

4.3 Exam questions

Question 1 (4 marks)

List four sociocultural factors that impact on the health status of population groups.

Question 2 (2 marks)

Describe one way that mental illness could lead to social exclusion, and one way that social exclusion could lead to mental illness.

Question 3 (1 mark)

Outline the sociocultural factors that impact on the health status of population groups.

Question 4 (2 marks)

Explain how early life experiences may impact on health status.

Question 5 (2 marks)

Apart from early life experiences, **identify** a sociocultural factor and **discuss** how it impacts on health status.

More exam questions are available in your learnON title.

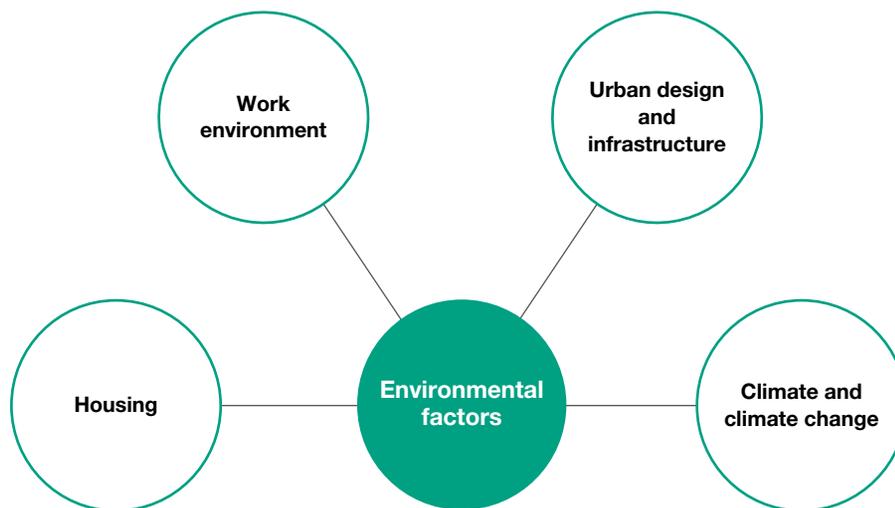
4.4 Environmental factors contributing to variations in health status

KEY CONCEPT Understanding the environmental factors contributing to variations in health status

Environmental factors, in the context of this course, relate to the physical features that surround us. These can be natural features or those built by people. As with all factors, the relationship between the physical environment and health status is complex, but there is growing evidence to suggest that the way people interact with the physical environment can increase or decrease the risk of negative health outcomes. One World Health Organization study (2002) estimated that 24 per cent of the global burden of disease and 23 per cent of all deaths were due to aspects of the physical environment. Factors related to the physical environment that are explored in more detail in this subtopic are identified in **FIGURE 4.19**.

Understanding how the physical environment can affect health status allows government and non-government groups to implement strategies to modify the physical environment to reduce the risk of ill health occurring among the population.

FIGURE 4.19 Environmental factors that impact health status



4.4.1 Housing

Most people spend more time in their house than in any other environment. The housing environment therefore plays a significant role in determining health status. Some of the specific concerns of the home environment that contribute to variations in health status include:

- *Ventilation and hygiene.* Inadequate housing has been linked to increased rates of morbidity from infectious and chronic diseases. For example, a house that is damp and has poor ventilation can promote the growth of mould, which can increase the risk of developing respiratory and asthma-related symptoms such as coughing, wheezing and irritation of the upper respiratory tract by 30–50 per cent (AIHW, 2010).
- *Design and safety.* If not adequately maintained, features of houses such as stairs, floor surfaces (especially those that may become slippery when wet), bodies of water (such as ponds, dams and pools), balconies, electrical wiring and furniture can increase the risk of falls, cuts, drowning and electrocution. Young children and the elderly are often the most at risk of these injuries.

Environmental factors the physical surroundings in which we live, work and play. Environmental factors include workplaces, housing, roads and geographical access to resources such as healthcare.

- *Overcrowding.* Those living in overcrowded housing experience higher rates of mental health issues because occupants find it difficult to find their own space. Overcrowded conditions also place added strain on bathroom, kitchen and laundry facilities, which can lead to unsanitary conditions and increases the risk of infectious diseases. Education and employment opportunities can also be impacted by overcrowded living conditions.
- *Sleeping conditions.* Sleep is an important aspect of good health and wellbeing, and sleeping conditions should promote restful sleep. Noise and overcrowding can impact on sleeping conditions and contribute to mental health issues.
- *Security.* Having a house that is not seen as secure from the elements and intruders can promote fear among the residents and lead to high levels of stress and anxiety.
- *Pollutants.* Environmental tobacco smoke, asbestos, dust, pet hair and other pollutants can lead to respiratory conditions such as asthma.
- *Resources conducive to eating a nutritionally sound diet.* Refrigeration for storing food, and adequate cooking appliances, are examples of resources that promote healthy eating. If individuals do not have access to such resources, they may rely on takeaway foods. Such foods may be high in fat and contribute to obesity and related conditions such as cardiovascular disease and type 2 diabetes.
- *Access to water and sanitation facilities.* An adequate water supply and the infrastructure to deliver clean water to homes are required to access clean water, and this decreases the risk of infectious diseases. Sanitation facilities are essential to remove human waste from the immediate environment. This reduces the risk of infectious diseases such as cholera, which are spread by contact with human waste.

FIGURE 4.20 Young children are often at risk of injury in the home, although safety devices such as gates can be used to decrease the risk.



4.4.2 Work environment

Many Australians spend a significant amount of time in their place of employment. As a result, the physical environment of the workplace plays a significant role in determining health status. Examples of how the physical environment of the workplace can impact on health status include:

- *UV exposure.* Those working outdoors are more exposed to UV radiation. This can increase the risk of skin cancer among these workers.
- *Dangerous working conditions.* According to the ABS (2018), around 4.2 per cent of all employees aged 15 and over sustained a work-related injury in the previous year. Many workplaces have risks associated with the specific environment in which the work is carried out. People working on farms, fishing trawlers and mining operations, for example, often use heavy machinery, which can increase the risk of injuries. Those working in transport, such as truck drivers and taxi drivers, may have an increased risk of road trauma as a result of spending extended periods on the roads. Those working with tools such as sewing machines and saws may have an increased risk of lacerations.
- *Exposure to hazardous substances.* Hazardous substances such as paint, asbestos, fuels, gases, acids and corrosive chemicals are used in many workplaces; for example, those used for manufacturing and building. Although the use of protective equipment can reduce the risks associated with handling such substances, they still contribute to morbidity and mortality in the workplace.

Sanitation the process of eliminating contact between humans and hazardous wastes, including human and animal faeces and urine, solid wastes, domestic wastewater (sewage and grey water), industrial wastes and agricultural wastes

FIGURE 4.21 Australia's large farming industry has a range of associated workplace hazards, including UV exposure and injuries associated with the use of heavy machinery.



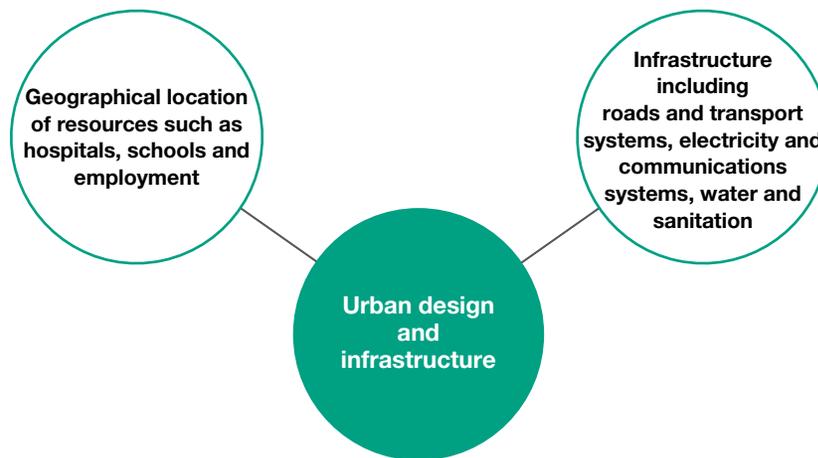
FIGURE 4.22 The use of protective equipment, such as hard hats, ear muffs and gas masks, can reduce the effects of exposure to danger in the workplace.



4.4.3 Urban design and infrastructure

Urban design and **infrastructure** relate to the features and structures of the suburbs, towns, regions and cities in which people live. Features of such areas that contribute to variations in health status for a range of population groups include the aspects summarised in **FIGURE 4.23**.

FIGURE 4.23 Factors relating to urban design and infrastructure



Geographical location of resources

Having access to goods and services can increase the ability of many people to access resources required for good health and wellbeing. Being close to supermarkets, shops and hospitals, and having the means to reach these resources, can decrease morbidity and mortality rates, because people can access the resources required to obtain adequate food and healthcare.

Infrastructure the physical and organisational structures, facilities and systems (e.g. buildings, roads, power supplies) needed for the operation of a society

EXAM TIP

It is important to discuss the selected factor in the correct context. For example, access to healthcare can be influenced by a range of factors such as health literacy, cultural influences, geographical location of hospitals and access to transport systems. If asked to discuss a sociocultural factor, access to healthcare may be appropriate, provided that the discussion relates to sociocultural influences on accessing healthcare such as health literacy and cultural influences. To discuss the impact of geographical location of hospitals or access to transport systems in relation to accessing healthcare relates to environmental factors and will not be awarded full marks.

Being in close proximity to fast-food outlets may increase the frequency at which people consume such products. This can increase energy intake and contribute to being overweight and obesity.

Industrial sites located in close proximity to residential areas may increase air and noise pollution in the area. This can increase the risk of mental health issues. In one study of neighbourhoods near Sydney airport, residents who were chronically exposed to high aircraft noise were more likely to report stress and high blood pressure than those living in a matched suburb unaffected by aircraft noise (AIHW, 2012).

Infrastructure

Having adequate infrastructure, such as sealed roads, public transport systems, information and communication technologies, such as telephone and internet connections, electricity grids and supply, clean water facilities and sanitation systems, and adequate parks, gardens and recreation facilities, assists in promoting health status.

Adequately maintained roads and traffic systems such as traffic lights, signage and road lighting can improve safety and decrease the risk of morbidity and mortality from road trauma.

Public transport systems can help people access resources that can promote health status, such as food, employment, healthcare and social interaction. People living outside of Australia's major cities may be particularly vulnerable to transport issues. In this sense, a lack of transport can actually prevent people from taking steps to promote their health status, such as having a balanced food intake and seeking medical care when required.

FIGURE 4.24 Living in close proximity to services such as hospitals can increase access to health-promoting resources such as healthcare.



FIGURE 4.25 The availability of public transport increases access to goods and services for many Australians.



Information and communication technologies can assist in maintaining social connections, and this promotes mental health and wellbeing and can decrease the risk of mental illness. Internet connections can also promote education for those living outside major cities, helping to increase socioeconomic status by increasing opportunities for employment. Web-based resources are increasingly being used to educate consumers in relation to health-related matters, for example, through sites providing symptom checkers, healthy living advice and online counselling and support. Together, these resources can improve health literacy and health status outcomes.

FIGURE 4.26 Access to information and communication technologies can assist in maintaining social connections and promotes educational outcomes.



Electricity is required for heating and cooling, cooking and refrigeration, telecommunications and recreation. All of these resources can assist in promoting health and wellbeing.

Water is essential for life. It is required for drinking, bathing, cooking and sanitation. Having access to a clean and reliable water supply reduces the risk of infectious diseases, such as dysentery, and promotes health and wellbeing.

Adequate sanitation infrastructure, such as sewerage systems, eliminates waste from the environment. Removing substances such as faeces, solid wastes and domestic wastewater reduces the risk of contracting infectious diseases such as cholera.

Having access to adequate public spaces such as parks and gardens, and recreation facilities such as walking paths, cycling tracks and basketball and tennis courts, means people are more likely to be physically active. This can reduce the risk of mental health problems and obesity.

4.4.4 Climate and climate change

Geographically, Australia is a large country and experiences a range of climates as a result. Rainfall, temperature and wind patterns vary across the country, producing different impacts on health status. Weather patterns have been changing in Australia over the past century, and such changes also bring about impacts on health status.

Climate

Australia is the driest inhabited continent on Earth, and is more susceptible to bushfires than many other countries as a result. As well as the loss of human and animal life that occurs with bushfires, houses and infrastructure can also be destroyed, limiting the availability of goods and services that are required for optimal health and wellbeing. Access to resources such as water, food and healthcare can all be affected, further increasing morbidity and mortality rates in affected areas.

Ultraviolet (UV) radiation levels are also comparatively high in Australia, contributing to Australia having the highest rates of skin cancer in the world.

Climate change

There is increasing concern that changes to the environment are contributing to climate change, resulting in extreme temperatures, rising sea levels, and increases in the occurrence of natural disasters and the spread of vector-borne diseases such as dengue fever and Ross River fever, which are spread by infected mosquitoes. Human settlement, industrialisation, land clearing and farming practices all affect environmental systems, including climate systems (AIHW, 2010).

The impacts of climate change on the health status of individuals and population groups will vary depending on a range of factors.

However, according to the

Australian Institute of Health and Welfare (2012), ‘the most vulnerable groups will be those living in remote areas, on lower incomes or with poor housing; the young and elderly; and the sick. Aboriginal and Torres Strait Islanders living in remote communities are also likely to be disproportionately affected by climate change because of their relative isolation and limited access to support facilities.’

Changes in climate also result in more natural disasters such as bushfires and floods. Extreme weather across Australia during 2019 and 2020 was associated with intense bushfires in many parts of Australia.

Increasing temperatures are expected to lengthen bushfire seasons and increase the frequency and intensity with which bushfires occur. In 2009, Victoria experienced the Black Saturday fires, which were the most intense and most lethal in Australia’s recorded history. More than 170 people died, and many others suffered severe burns and were hospitalised. Towns were completely wiped out by fires that destroyed infrastructure such as electricity supply, dams, housing and schools. Thousands of sheep and cattle were also killed, and entire crops destroyed. As well as the immediate impact on mortality and morbidity, such events take a long time to recover from and can increase the risk of mental health disorders and reduce access to health-promoting resources for years to come.

Floods in Queensland, New South Wales and Victoria in 2010–11 caused widespread damage, including the loss of life. Thousands of farms were affected by extensive livestock and crop losses. Infrastructure was also destroyed, limiting the ability of people to access resources such as food, clean water and healthcare.

FIGURE 4.27 The results of bushfires continue to affect health and wellbeing long after the fires are extinguished.



4.4 Activities

1. Draw an annotated diagram highlighting the features a house should have in order for it to promote optimal health and wellbeing.
2. Access the **Climate change** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

 **Digital document** Climate change worksheet (doc-32199)

 **Weblink** Climate change

4.4 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

4.4 Quick quiz



4.4 Exercise

4.4 Exam questions

Select your pathway

■ LEVEL 1

1, 3, 6

■ LEVEL 2

2, 4, 5, 7, 8, 11

■ LEVEL 3

9, 10, 12

Test your knowledge

1. Explain what is meant by 'environmental factors'.
2. Outline one way that adequate housing could promote:
 - a. physical health and wellbeing
 - b. mental health and wellbeing.
3. Explain what is meant by urban design and infrastructure.
4. Explain how geographical location of resources may impact food security.
5. Explain how climate and/or climate change can impact health status.

Apply your knowledge

6. Draw a flowchart that illustrates how poor housing could lead to poor health status.
7. Outline two ways that urban design and infrastructure may affect health status.
8. Complete the following table by identifying three work environments and explaining how each may contribute to differences in health status for people working in them:

Work environment	How it may contribute to differences in health status

9. Brainstorm the infrastructure in your neighbourhood that promotes health status. Explain the link between each resource and improved health status.
10. Explain how education and employment opportunities may be impacted by overcrowded housing.
11. Using **FIGURE 4.19** as the basis of your response, create a mind map of the environmental factors and include a brief description of their impacts on health status.
12.
 - a. List the types of infrastructure that are affected by climate change.
 - b. Discuss how damage to each type of infrastructure could impact health status.

4.4 Quick quiz



4.4 Exercise

4.4 Exam questions

Question 1 (1 mark)

Identify three examples of environmental factors that impact on the health status of population groups.

Question 2 (3 marks)

Explain how housing may impact on two dimensions of health and wellbeing.

Question 3 (2 marks)

Identify an environmental factor and describe how it may impact on life expectancy.

Question 4 (2 marks)

According to the Australian Institute of Health and Welfare, 63 per cent of Australians are overweight or obese.

Explain how urban design and infrastructure could decrease overweight and obesity rates in Australians.

Question 5 (3 marks)

Explain why those with poor housing may be particularly susceptible to the impacts of climate change.

More exam questions are available in your learnON title.

4.5 Differences between Indigenous and non-Indigenous population groups

KEY CONCEPT The variations in health status as experienced by Indigenous Australians and the factors that explain the differences

The biological, sociocultural and environmental factors explored in the previous subtopics provide a basis to analyse and explain why some population groups experience poorer health status than the rest of the population. It is important to remember that no single factor acts in isolation, and the differences in health status usually occur as a result of the complex interplay between a range of factors.

With all the improvements that have occurred in education, technology and research in the past 100 years, the life expectancy of the Australian population has increased from approximately 57 years in 1901 to approximately 82 years in 2019. Unfortunately, these improvements in health status have not been shared by the entire population. There are still population groups that have life expectancies significantly lower than the average. These include **Indigenous Australians**, males, people of low socioeconomic status (SES), and those living outside major cities. We will explore the health status of these groups, along with an investigation of the factors that contribute to such differences.

Indigenous Australians make up 3.3 per cent of the Australian population and experience poorer health status than the rest of the population in relation to nearly all health indicators.

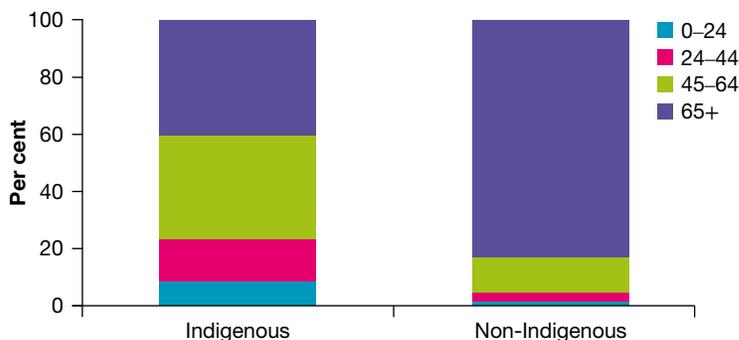
Indigenous Australians
Australians of Aboriginal or Torres Strait Islander origin

4.5.1 Key differences in health status

Estimates of Indigenous life expectancy for 2017 were 71.6 years for men and 74.6 years for women (ABS, 2018). This represents a difference of about 10.5 and 10.2 years for males and females respectively when compared with the rest of the population (see **FIGURE 4.28**).

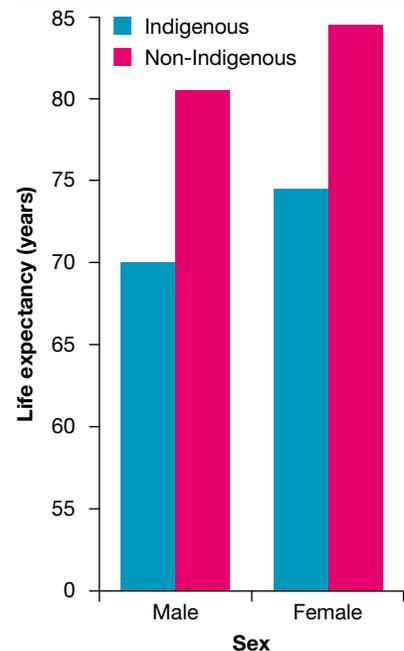
Even though there have been some significant improvements in recent years in Indigenous mortality rates, Aboriginal and Torres Strait Islander peoples are more likely to die at every stage of the lifespan and at younger ages than the non-Indigenous population. In fact, approximately 60 per cent of Indigenous people die before their sixty-fifth birthday compared to just under 20 per cent for the non-Indigenous population (see **FIGURE 4.29**).

FIGURE 4.29 Age distribution of deaths among Indigenous and non-Indigenous Australians, 2017



Source: Adapted from http://stat.data.abs.gov.au/Index.aspx?DataSetCode=DEATHS_INDIGENOUS#_c04f029

FIGURE 4.28 Life expectancy at birth, by Indigenous status and sex, 2017



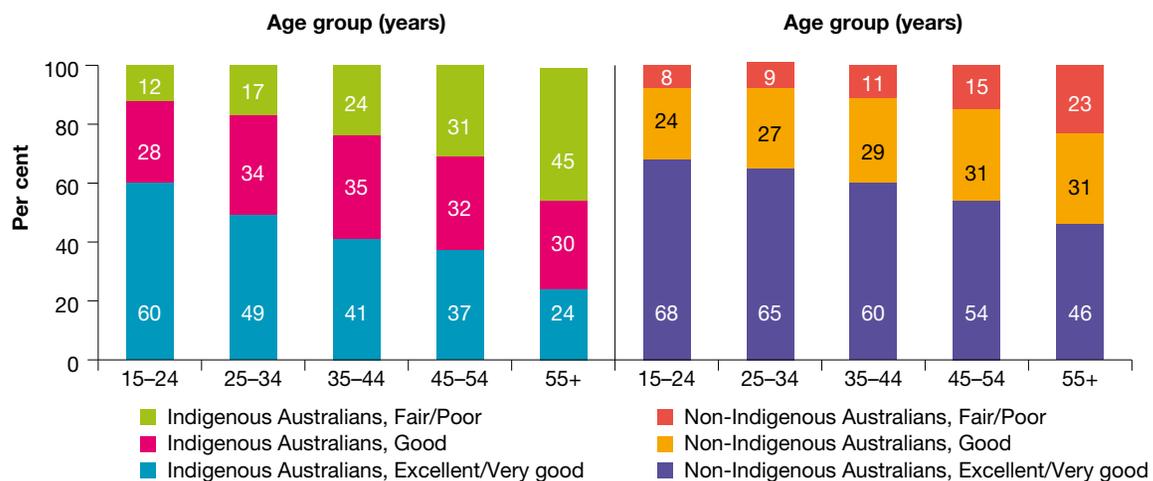
Source: ABS, Life Tables for Aboriginal and Torres Strait Islander Australians, 2015–2017 and ABS, Life tables, States, Territories and Australia, 2015–17.

Other variations in health status reported by the ABS and AIHW (2015–20) include:

- an overall mortality rate that is almost two times that of other Australians, and four times as high among Indigenous people aged 35–44
- infant mortality rates that are two times higher than the rest of the population
- being half as likely as other Australians to report their health status as excellent or very good, and twice as likely to report their health status as fair or poor (see **FIGURE 4.30**)
- burden of disease that was 2.3 times the rate of other Australians
- higher rates of hospitalisation and death from injury 2 times higher than the non-Indigenous population
- higher incidence and mortality rates from cardiovascular disease — 1.5 times greater than the non-Indigenous population
- higher mortality rates as a result of cancer (1.3 times higher), with significantly higher mortality rates from lung, cervical and liver cancers
- being nearly twice as likely to have a disability or a restrictive long-term health condition
- high or very high levels of psychological distress experienced at nearly three times the rate of the non-Indigenous population, with rates of suicide that were four times higher than other Australians and rates of hospitalisation for mental health issues twice as high
- rates of diabetes and high blood glucose levels more than three times higher than the rest of the population and mortality rates from diabetes that were 5 times higher than non-Indigenous Australians. Indigenous Australians are also more likely to develop diabetes at a younger age and die from it earlier than the non-Indigenous population.
- a rate of chronic kidney disease (also referred to as CKD, which is the long-term loss of kidney function) nearly four times the rate of the rest of the population
- 2.5 times the burden from respiratory diseases (including COPD) than other Australians
- being almost twice as likely as other Australians to report having asthma
- higher rates of sexually transmissible infections (STIs), with the total burden caused by unsafe sexual practices being nearly four times higher than for the non-Indigenous population
- higher rates of dental decay and gum disease.

int-8512

FIGURE 4.30 Age-specific self-assessed health status among people aged 15 and over, by Indigenous status, 2018–19



Source: <https://www.indigenoushpf.gov.au/measures/1-17-perceived-health-status>

4.5.2 Factors contributing to variations in the health status of Indigenous Australians

The reasons for the comparatively low health status of Indigenous Australians compared with the rest of the population are varied and complex. However, there are a range of identifiable factors that adversely affect the health status of Indigenous Australians.

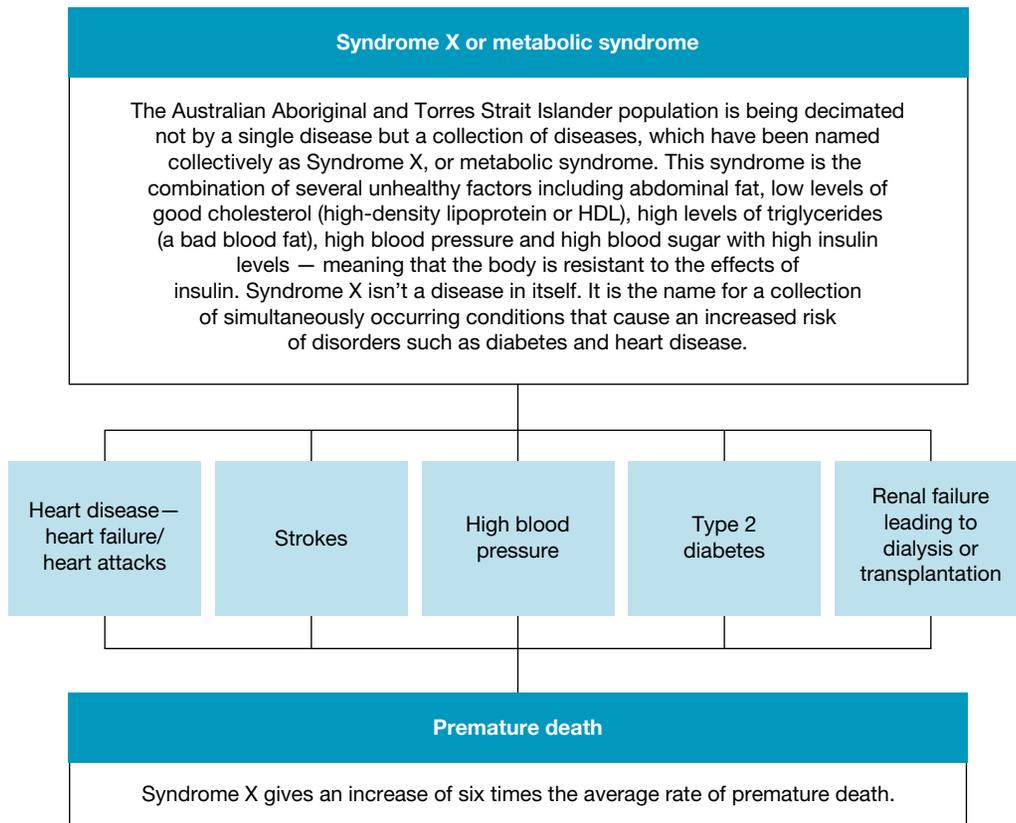
Biological factors

Many biological factors contribute to variations in the health status of Indigenous Australians compared to non-Indigenous Australians. We will examine four factors: body weight, blood pressure, glucose regulation and birth weight.

Body weight

Aboriginal and Torres Strait Islander peoples have higher rates of high body mass index across all ages, which increases the risk of suffering from chronic conditions such as cardiovascular disease, type 2 diabetes and osteoarthritis. The obesity rate among Indigenous adults is one and a half times higher than in the non-Indigenous population. Being obese is linked to **Syndrome X**, a major problem in the Indigenous population (see **FIGURE 4.31**).

FIGURE 4.31 Syndrome X, or metabolic syndrome, has a profound effect on the health status of Aboriginal and Torres Strait Islander peoples.



Source: Australian Medical Association Report Card Series 2005: Aboriginal and Torres Strait Islander Health.

Blood pressure

Indigenous Australians are 1.3 times more likely to report hypertension, a risk factor for stroke and heart disease.

Glucose regulation

Indigenous Australians experience higher rates of impaired glucose regulation than the rest of the population, contributing to the higher rates of diabetes and kidney disease experienced.

Syndrome X (also called metabolic syndrome) when a person exhibits a range of factors that increase their risk of cardiovascular disease and type 2 diabetes. Examples of the factors include abdominal obesity, high cholesterol and insulin resistance.

Birth weight

Aboriginal and Torres Strait Islander mothers are almost twice as likely to give birth to a baby with low birth weight when compared with other Australians, contributing to a higher U5MR. Of live births to Indigenous mothers in 2018, 11.7 per cent were classified as low birth weight, compared with 6.4 per cent for live-born babies of non-Indigenous mothers. Maternal tobacco use, nutrition and access to healthcare are significant contributors to this difference. Babies of Indigenous mothers were also more likely to be premature (14 per cent) compared with babies of non-Indigenous mothers (8.5 per cent).

Sociocultural factors

A range of sociocultural factors contribute to the variations in health status experienced between Indigenous Australians and non-Indigenous Australians. They include socioeconomic status, unemployment, social exclusion including discrimination and homelessness, food insecurity, early life experiences and cultural norms.

Socioeconomic status

Indigenous Australians are more likely to experience a lower socioeconomic status than non-Indigenous Australians. According to the Australian Institute of Health and Welfare (2018), Aboriginal and Torres Strait Islander peoples, on average, had lower incomes, poorer education achievements and lower rates of home ownership than other Australians. Lower educational outcomes contribute to lower levels of health literacy. This also places Indigenous Australians at greater risk of behaviours such as smoking, dietary risks and sedentary lifestyles, further contributing to obesity, type 2 diabetes, cardiovascular disease and lung cancer.

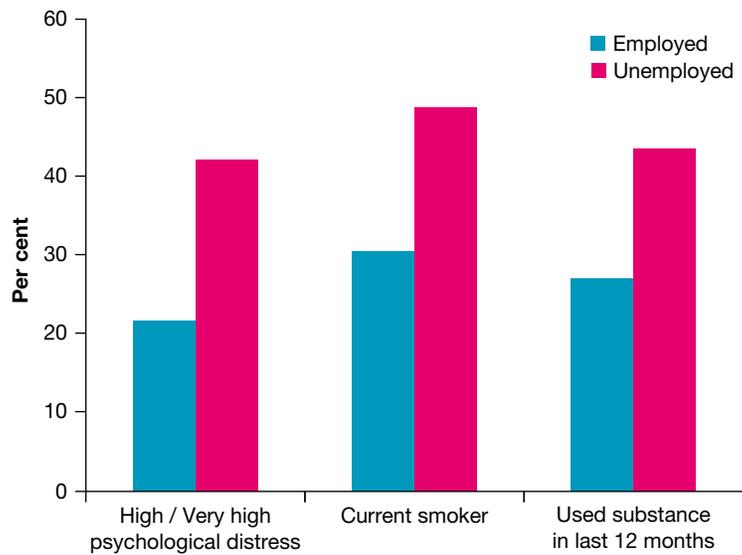
FIGURE 4.32 Having a good birth weight increases the chance of optimal health and wellbeing in later life.



Unemployment

In 2019, Indigenous Australians were four times as likely to be unemployed than other Australians (19 per cent compared with 5 per cent). Unemployment is more pronounced for those who live outside Australia's major cities and towns, where the unemployment rates for Aboriginal and Torres Strait Islander peoples range from 20–28 per cent. There is a relationship between unemployment and a range of risk factors (see **FIGURE 4.33**) and variations in health status, including increased rates of smoking and alcohol abuse, reduced overall feelings of wellbeing, and increased rates of cardiovascular disease, mental health problems and lung cancer.

FIGURE 4.33 Rates of psychological distress, smoking and substance use, by employment status, Indigenous Australian adults, 2018–19



Source: Adapted from AIHW, Aboriginal and Torres Strait Islander Health Performance Framework 2020 online data tables, 2020

Social exclusion

Discrimination and racism have been associated with ill health and lower health status for Aboriginal and Torres Strait Islander peoples — in particular, mental health disorders (such as anxiety) and risky health behaviours such as tobacco, drug and alcohol use. According to the *Australian Aboriginal and Torres Strait Islander health survey* (AATSIHS), 32 per cent of Aboriginal and Torres Strait Islander adults reported that they avoid seeking healthcare as a result of cultural factors, such as language barriers, lack of trust in the health provider and experiences of discrimination. This can increase the duration and severity of disease and contribute to higher levels of morbidity and mortality.

Data from an *Aboriginal experience of racism survey* (2010–11) conducted in Victoria indicated that almost all (97 per cent) the respondents had experienced at least one racist incident in the preceding 12 months. The survey found that 2 in 3 (67 per cent) experienced racism in shops, 59 per cent in public spaces and 29 per cent within health settings. Aboriginal and Torres Strait Islander adults who had experienced high levels of racism were more likely to have high or very high levels of psychological distress than those who had experienced no, low or medium levels of racism.

Many Aboriginal and Torres Strait Islander peoples have experienced forced removal from their natural family. According to the AIHW (2020):

- 17.5 per cent of Aboriginal and Torres Strait Islander adults reported having been removed from their natural family by welfare authorities or the government, or by being taken away to a mission.
- 36 per cent of Aboriginal and Torres Strait Islander adults reported that they had relatives who had been removed from their natural family.
- In total, more than half (53.5 per cent) of Aboriginal and Torres Strait Islander adults reported that either they or their relatives had been removed from their natural family.

Levels of high or very high psychological distress were significantly more common among Aboriginal and Torres Strait Islander adults:

- who had been removed from their family (41.2 per cent)
- who had relatives removed (36.2 per cent) compared with those who had not (26.3 per cent).

High levels of psychological distress relates to an increased rate of risky behaviours, such as tobacco and alcohol use and self-harm, and increases the risk of a range of causes of ill health that may otherwise be preventable, such as cardiovascular disease, respiratory diseases, some cancers and suicide.

Social exclusion has been an issue for Aboriginal and Torres Strait Islander peoples since European settlement, and this has generated a sense of alienation that is not easily rectified. According to a report by the WHO ('Solid facts'), social exclusion also results from racism, discrimination and unemployment. Racial discrimination complaints still form more than 10 per cent of all complaints received by anti-discrimination bodies in NSW, Queensland, SA, WA and NT, many of which involve Aboriginal and Torres Strait Islander peoples. Social exclusion contributes to a range of physical and mental health problems, and to the higher rates of morbidity and mortality experienced by Aboriginal and Torres Strait Islander peoples.

In 2016, an estimated 23 437 Aboriginal and Torres Strait Islander people were experiencing homelessness in Australia — a rate nearly 10 times that of other Australians. Of all the homeless people who provided information on their Indigenous status, 20 per cent were Indigenous. Homelessness increases the risk of psychological distress and risk-taking behaviour including tobacco and alcohol abuse, contributing to higher rates of mental health disorders, obesity, type 2 diabetes, cardiovascular disease and some cancers.

Food insecurity

Aboriginal and Torres Strait Islander peoples are significantly more likely to report food insecurity compared with those in the general population. A range of factors contribute to this difference, including lower incomes, poorer quality and overcrowded housing, the higher cost of fresh foods in many areas outside of Australia's major cities, lack of transport and lower levels of nutritional knowledge. Food insecurity contributes to higher rates of obesity and associated conditions such as type 2 diabetes, kidney disease and cardiovascular disease. Traditional diets were high in protein and low in fat. European influences have changed the diet for many Aboriginal and Torres Strait Islander peoples, contributing to higher rates of obesity and associated conditions among that population.

FIGURE 4.34 Foods that formed a traditional diet, such as kangaroo meat, are high in protein and low in fat. This is in stark contrast to many of the foods introduced by European settlers.



Early life experiences

Early life experiences including maternal tobacco, alcohol and drug use have significant impacts on health status. In Australia:

- 44 per cent of Aboriginal and Torres Strait Islander women smoked while pregnant, compared to 10 per cent of other women.
- National data relating to maternal alcohol consumption are not readily available, but some studies suggest that up to 50 per cent of babies born in some Aboriginal and Torres Strait Islander communities display effects of maternal alcohol use.
- According to the AIHW (2013), babies born to Aboriginal and Torres Strait Islander mothers were around 3.5 times more likely to display signs of exposure to drugs while in the uterus.

These differences in substance use during pregnancy in Aboriginal and Torres Strait Islander communities contribute to a range of variations in health status, including higher rates of:

- low birth weight babies
- some infections among infants

- **foetal alcohol spectrum disorder**
- under-five mortality
- cardiovascular disease
- type 2 diabetes.

Cultural norms

Cultural norms contribute to the lower rate at which many Aboriginal and Torres Strait Islander people access western medicine. Many Aboriginal and Torres Strait Islander peoples feel western medicine is culturally inappropriate, and associate hospitals with death. As a result, many conditions go unchecked for extended periods of time. This can increase morbidity and mortality rates, and reduce life expectancy.

Environmental factors

The physical environment factors that contribute to variations in health status for Indigenous Australians include housing, water and sanitation, access to health services, and infrastructure.

Housing

Housing plays a major role in the health and wellbeing of Aboriginal and Torres Strait Islander peoples. The absence of affordable, secure and appropriate housing can result in a number of negative consequences, including homelessness, poor health and wellbeing, and lower rates of employment and education participation. All of these can lead to social exclusion and the associated impacts on health status.

Housing quality is an issue for many Aboriginal and Torres Strait Islander peoples, and much of the housing in Aboriginal and Torres Strait Islander communities is substandard in regard to shelter, drinking water and sanitation. According to the Australian Institute of Health and Welfare (2020), among Aboriginal and Torres Strait Islander households in 2018–19:

- one in three (33 per cent) reported living in a dwelling with one or more major structural problems, such as electrical or plumbing problems, major cracks in floors or walls, or roof defects
- around one in ten (10 per cent) reported living in a dwelling that was lacking at least one working facility such as a fridge, cooking facilities, toilet, or bath or shower (AIHW 2018–19 AATSIHS).

Foetal alcohol spectrum disorder a group of conditions that can occur in a person whose mother drank alcohol during pregnancy. Problems that may occur in babies exposed to alcohol before birth include low birth weight, distinctive facial features, heart defects, behavioural problems and intellectual disability.

FIGURE 4.35 Many Aboriginal and Torres Strait Islander peoples live in communities outside major cities. This presents many challenges, including overcrowded housing, lack of access to healthcare, and an unreliable water supply.



These dwellings pose many risks to the health status of Indigenous Australians, including increased risk of injury, disease and mental health problems.

17.9 per cent of Aboriginal and Torres Strait Islander people were reported to be living in overcrowded housing in 2019 compared to 4.9 per cent of other Australians (AIHW, 2020). Overcrowded housing places a strain on bathroom, kitchen and laundry facilities. This strain can lead to unhygienic living conditions and increased risk of injury, disease and mental health issues.

In 2018–19, Aboriginal and Torres Strait Islander children aged 0–14 were four times as likely as other children to live in households with a daily smoker who smoked at home indoors (9 per cent and 2.1 per cent, respectively). Exposure to environmental tobacco smoke increases the risk of respiratory diseases such as asthma, and can increase the risk of children becoming smokers when they get older. Tobacco use is associated with a range of variations in health status, including high rates of cardiovascular disease.

Water and sanitation

Most Australians have access to one of the cleanest and most reliable water supplies in the world, but the 2006 *Community housing and infrastructure needs survey* (the most recent data available) found that 48 of the 148 Aboriginal and Torres Strait Islander communities (about 12 000 people) that were tested had drinking water supplies that failed testing at least once in the 12 months before the survey. Of the 82 300 people surveyed, 59 per cent (about 48 500 people) also reported experiencing an interruption to their water supply in the previous 12 months.

Sewerage systems are also inadequate in many Aboriginal and Torres Strait Islander communities. In 2006, 40 per cent of Aboriginal and Torres Strait Islander communities (about 30 000 people) experienced a sewage leak or overflow. Lack of clean water and sanitation has been shown to increase the risk of infectious diseases, including gastroenteritis, diarrhoea, dysentery and cholera. Such sanitary conditions can be particularly dangerous for children, who are likely to experience repeated infections. Increased morbidity and mortality rates can also be attributed to a lack of clean water and sanitation in Aboriginal and Torres Strait Islander communities. Aboriginal and Torres Strait Islander people living outside Australia's major cities are less likely to have access to a fluoridated water supply, and this contributes to the higher rates of dental decay in these areas.

Access to health services

Indigenous Australians have lower levels of access to, and use of, health services and resources such as Medicare-funded services, the Pharmaceutical Benefits Scheme (or PBS, which subsidises medication) and private GPs. About 21 per cent of Aboriginal and Torres Strait Islander people live in remote areas, compared to 2 per cent of the rest of the population, which makes service delivery and access to services more difficult for many. As a result, conditions may go undiagnosed or untreated, and this may limit treatment options and so increase morbidity and mortality rates.

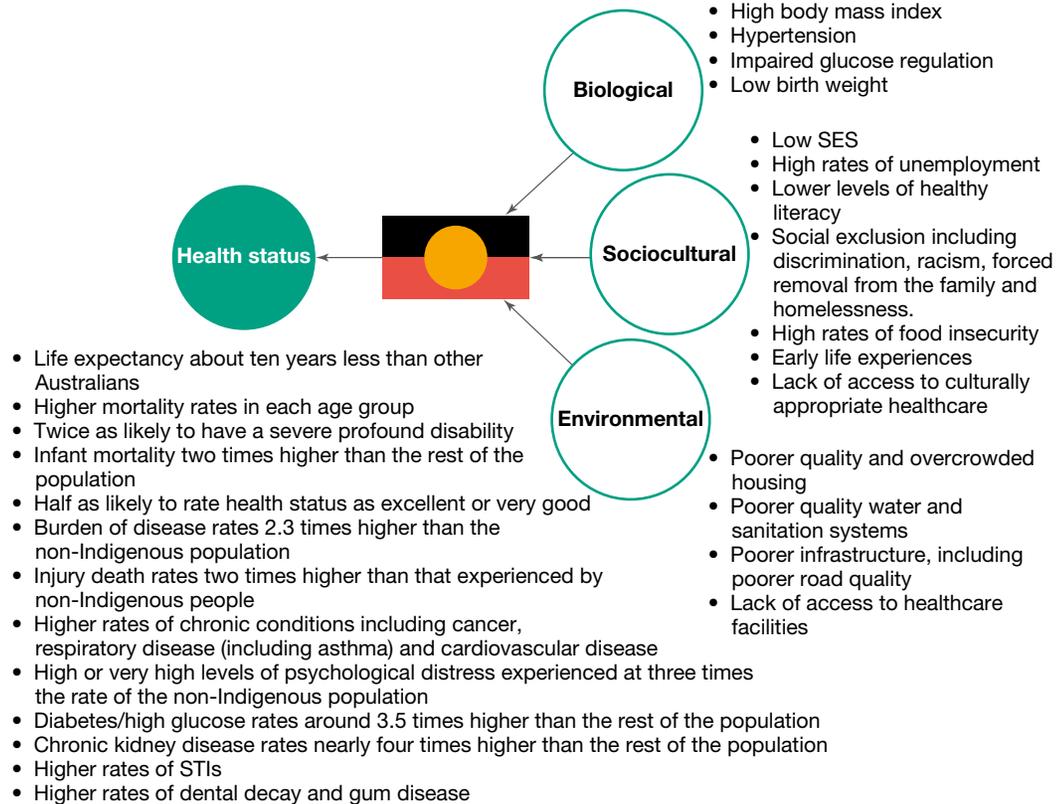
Infrastructure

Aboriginal and Torres Strait Islander people living outside of Australia's major cities are exposed to aspects of the physical environment that can increase the risk of injuries and deaths from road crashes, including unsealed roads and poorer lighting at night.

Summary of factors contributing to variations in the health status of Indigenous Australians

FIGURE 4.36 summarises the factors affecting the health status of Indigenous Australians.

FIGURE 4.36 Factors contributing to variations in the health status of Indigenous Australians



4.5 Activity

Access the **Discrimination** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

 **Digital document** Discrimination worksheet (doc-32197)

 **Weblink** Discrimination

4.5 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

4.5 Quick quiz



4.5 Exercise

4.5 Exam questions

Select your pathway

■ LEVEL 1

1, 4

■ LEVEL 2

2, 3, 5, 8, 9

■ LEVEL 3

6, 7

Test your knowledge

1. Outline one similarity and one difference between Indigenous Australians and non-Indigenous Australians according to **FIGURE 4.28**.
2. **a.** According to **FIGURE 4.29**, approximately what percentage of deaths occurred in the under-65 age groups for:
 - i. the Indigenous population
 - ii. the non-Indigenous population?**b.** Suggest two reasons that might account for this difference.
3. **a.** Compare the proportion of those assessing their health status as very good or excellent between Indigenous and non-Indigenous Australians according to **FIGURE 4.30**.
b. Outline three reasons that may account for the difference identified in part **a**.
4. List three diseases that Indigenous Australians suffer from at higher rates than other Australians.
5. **a.** Explain what is meant by Syndrome X.
b. Suggest two ways that someone could reduce their chances of developing Syndrome X.
c. Outline two variations in health status that may occur as a result of higher levels of Syndrome X.

Apply your knowledge

6. Many Indigenous Australians report lower education achievements than other Australians. How can not completing secondary school lead to poor health status? Draw a flow chart to illustrate this relationship.
7. Use biological, sociocultural and/or environmental factors to explain the following variations in health status in the Indigenous population:
 - a. higher rates of death from injuries
 - b. higher rates of infant mortality
 - c. higher rates of cardiovascular disease
 - d. higher rates of type 2 diabetes.
8. **a.** What was the rate of unemployment for Indigenous Australians in 2019 compared with that for other Australians?
b. Make a list of the factors that could contribute to this difference.
9. Create a flow chart that illustrates how poor housing can impact on the health and wellbeing and health status of Indigenous Australians.

4.5 Quick quiz



4.5 Exercise

4.5 Exam questions

Question 1 (2 marks)

Source: *VCE 2019, Health and Human Development Exam, Q.2*; © VCAA

Provide two examples of how the health status of Indigenous people **compares** to the health status of non-Indigenous people.

Question 2 (2 marks)

Source: VCE 2016, Health and Human Development Exam, Q.2.a; © VCAA

The following data relates to the health status of Indigenous and non-Indigenous Australians.

	Prevalence of diabetes mellitus (age-standardised per cent)*	Incidence of type 1 diabetes (per 100 000)†	Mortality with diabetes as underlying cause (per 100 000)*
Indigenous	15	7	89.4
Non-Indigenous	4.7	10	15.6

Data: *Australian Institute of Health and Welfare, *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples 2015*, cat. no. IHW 147, AIHW, Canberra, 2015;

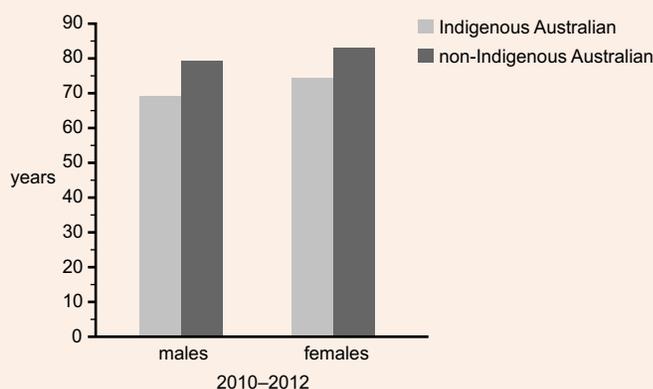
†Australian Institute of Health and Welfare, *Incidence of Type 1 Diabetes in Australia 2000–2013*, 'Diabetes' series no. 23, cat. no. CVD 69, AIHW, Canberra, 2015

Use data from the table to **compare** the health status of Indigenous and non-Indigenous Australians.

Question 3 (2 marks)

Source: VCE 2015, Health and Human Development Exam, Q.1.b; © VCAA

Life expectancy at birth, by sex and Indigenous status, 2010–2012



Data: Australian Bureau of Statistics, Fact sheet: Life expectancy estimates for Aboriginal and Torres Strait Islander Australians, 2010–2012, cat. no. 3302.0.55.003

Use the data in the graph shown to **compare** the health status of non-Indigenous Australian males and females to Indigenous Australian males and females.

Question 4 (2 marks)

Source: VCE 2015, Health and Human Development Exam, Q.1.c (adapted); © VCAA

Explain why mental health and wellbeing differs between non-Indigenous Australians and Indigenous Australians.

Question 5 (3 marks)

Source: VCE 2015, Health and Human Development Exam, Q.1.d (adapted); © VCAA

Select one sociocultural factor and **explain** how it might contribute to the differences in life expectancy at birth between non-Indigenous Australians and Indigenous Australians

More exam questions are available in your learnON title.

4.6 Differences between male and female population groups

KEY CONCEPT The variations in health status as experienced by males and females and the factors that explain the differences

The health status of males in Australia has always been below the health status of females. There have been some improvements in recent decades, but males are still not expected to live as long as females and they experience a range of conditions at higher rates than their female counterparts.

4.6.1 Key differences in health status

Although the life expectancy for males has been steadily increasing, they are still more likely to die at every stage of the lifespan than females. A male baby born in 2019 is expected to have a lifespan about four years shorter than a female baby born at the same time.

According to the Australian Bureau of Statistics and the Australian Institute of Health and Welfare:

- Males have greater rates of burden of disease than females.
- Males experience higher rates of premature death than females — 62 per cent of premature deaths were experienced by males.
- Males have higher rates of injury than females. The male death rate from injury is about twice the female death rate from injury.
- Males have higher rates of deaths due to suicide, road trauma and violence.
- Males suffer higher rates of cancer. By age 75, one in three males and one in four females will have been diagnosed with some form of cancer, but 56 per cent of all cancer deaths occur in males. Males are also more likely to develop melanoma — by age 75, one in 23 males and one in 31 females have been diagnosed with melanoma (AIHW, *Cancer data in Australia, 2020*).
- Males have higher rates of diabetes (5.5 per cent of males compared with 4.3 per cent of females) and higher mortality rates due to diabetes (around 1.6 times higher in males).
- Males experience higher rates of kidney disease than females.
- Males are more likely to be diagnosed with cardiovascular disease and experience heart attacks, and mortality rates due to these conditions are also higher when compared with females (151.9 and 108.9 deaths per 100 000 people respectively).
- Males have higher mortality rates from chronic obstructive pulmonary disease (COPD) than females.

The types of long-term conditions suffered are similar for both males and females, although there are some areas where males fare better than females:

- Males experience lower rates of osteoporosis (see **FIGURE 3.38** in subtopic 3.5); 85 per cent of all osteoporosis cases occur in females.
- Males experience lower rates of arthritis than females (12.1 per cent of males compared to 17.9 per cent of females).

FIGURE 4.37 Males are more likely to be injured at every stage of the lifespan and experience higher rates of morbidity and mortality due to injury.



- Males report slightly fewer cases of long-term mental and behavioural problems: 17.9 per cent of males compared with 22.3 per cent of females in 2017–18.
- Males are less likely to experience high or very high levels of psychological distress than females (11.3 per cent and 14.5 per cent respectively).
- Males are less likely to experience a severe or profound core activity limitation than females. That is, males are less likely to ‘sometimes’ or ‘always’ need help with core activities of daily living (mobility, self-care or communication) than females.

4.6.2 Factors contributing to variations in the health status between males and females

A range of factors contribute to the variations in health status experienced by males and females.

Biological factors

The biological factors that contribute to the variations in health status experienced by males when compared to females include body weight, blood pressure, glucose regulation and genetics.

Body weight

High body mass is more prevalent in males than females with 42.0 per cent of males being overweight compared with 29.6 per cent of females and 32.5 of males being obese compared to 30.2 per cent of females. This means that overall, 74.5 per cent of males experience a high body mass index compared to 59.8 per cent of females, contributing to higher rates of hypertension, cardiovascular disease and type 2 diabetes among males.

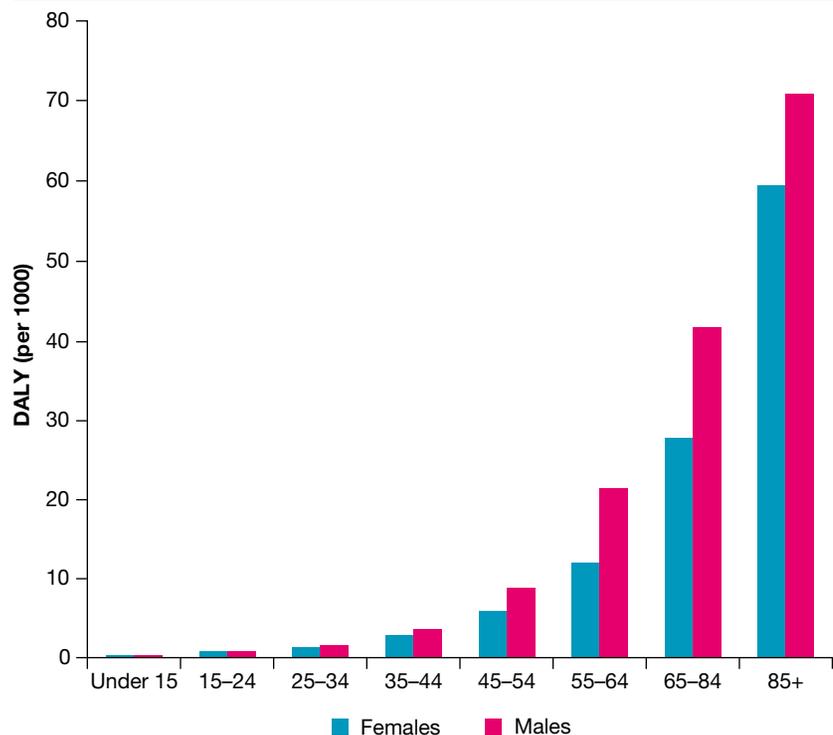
Blood pressure

Males are more likely to experience hypertension until they are in the 65–74 age group. From this age group onwards, females are more likely to experience hypertension. Across all other age groups, 25.4 per cent of males experience hypertension compared to 20.3 per cent of females, contributing to higher rates of cardiovascular and kidney disease among males.

Glucose regulation

In the most recent health survey where levels of impaired glucose regulation were tested (2011–12), males experienced significantly higher rates than females. This is reflected in the higher rate of DALYs experienced by males in 2015 as a result of impaired glucose regulation compared to females (see **FIGURE 4.38**). This difference contributes to the higher rates of type 2 diabetes and kidney disease experienced by males.

FIGURE 4.38 Prevalence of impaired fasting glucose in persons aged 18 and over, by sex, 2011–12



Source: Adapted from Australian Burden of Disease Study: *Impact and causes of illness and death in Australia, 2015*

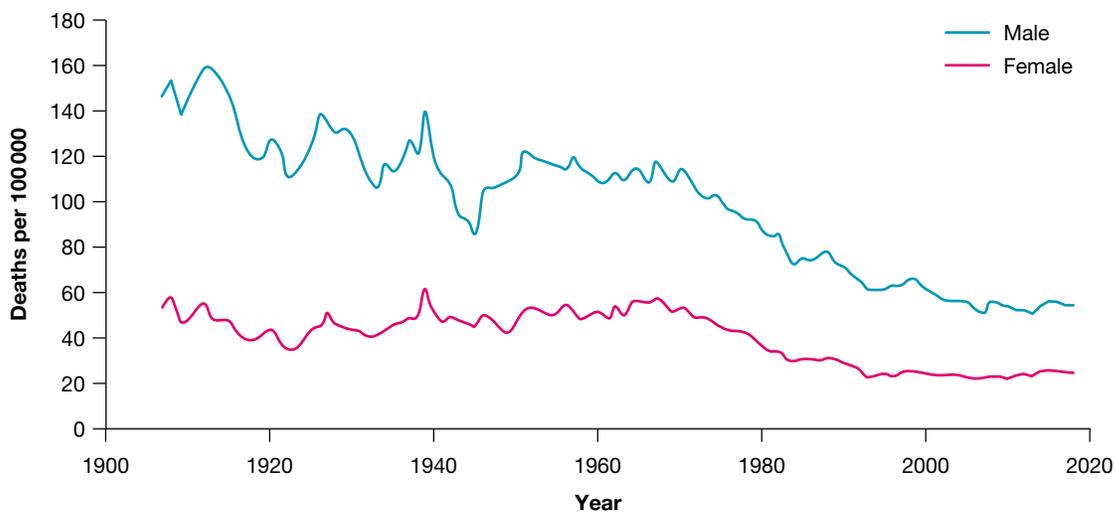
Genetics

Males tend to store more fat around their abdomen. This is associated with greater health risks — especially cardiovascular disease, which is more common in males in almost all countries and cultures around the world. Research is still being conducted to ascertain the exact genetic difference that leads to this variation.

Declining amounts of oestrogen at menopause have been shown to accelerate the loss of bone density in women. In males, testosterone is responsible for maintaining bone density. This difference contributes to the higher rates of osteoporosis among females over the age of 60. Whether oestrogen protects against heart disease is still a matter of debate.

Higher levels of testosterone among males have been linked to increased risk-taking behaviours, contributing to the higher levels of injuries experienced compared to females (see **FIGURE 4.39**).

FIGURE 4.39 Trends in death rates for injury and poisoning, 1907–2018



Source: ABS, *Causes of death*, various years.

Sociocultural factors

A range of sociocultural factors contribute to the variations in health status experienced by males compared to females. They include unemployment, socioeconomic status and cultural norms.

Unemployment

The effects of unemployment can be particularly influential on the health status of males. Males have traditionally been the breadwinners of the family and many males feel it is their duty to provide material resources for the family. An inability to do this can make males feel inadequate and stressed, which affects mental health and wellbeing. Males who are unemployed experience greater rates of morbidity and mortality compared to unemployed females. Specifically, rates of obesity, cardiovascular disease and suicide are higher for unemployed males.

Socioeconomic status

According to the ABS (2020), males employed on a full-time basis earn higher incomes on average than females employed full-time (\$1812.00 per week compared to \$1558.40 per week). As a result, males often have a higher socioeconomic status than females, especially females who are single parents. This difference contributes to lower levels of mental and behavioural problems and lower levels of psychological distress among males.

Cultural norms

A range of gender stereotypes in Australia contribute to variations in health status between males and females, including:

- Males are less likely to be carers of children. This means that some men have more opportunities for adult contact than some women. Women who provide full-time care may experience a form of social isolation, which can impact their mental health and wellbeing and contribute to higher rates of psychological distress. Females who don't get the opportunity to communicate with people their own age may 'bottle up' problems and issues, which can impact their mental health and wellbeing.
- Physically laborious jobs are generally considered to be masculine. This can increase the risk of injury in the workplace for males undertaking such jobs.
- Although more females are playing than ever before, contact sports such as Australian Rules Football and Rugby League are still generally considered to be masculine sports. These sports can increase the risk of injuries among males.
- According to the Australian Institute of Health and Welfare (2011), males may be less likely to access healthcare than females as a result of 'social norms and values associated with a traditional view of masculinity — self-reliance, suppression of emotion and perseverance in the face of pain or discomfort'. This contributes to higher rates of morbidity and mortality among males.
- Researchers have indicated that the way the media represent beauty, especially of females, has contributed to increasing rates of eating disorders and the greater prevalence of eating disorders among females compared to males. Female beauty is often portrayed by thin models, whereas male beauty is often portrayed by muscular individuals. These representations may have an effect on eating and exercise patterns, particularly among male and female youth.
- Peer pressure can have differing impacts on males compared to females. Males may encourage traditional stereotypes among their peers when in groups with other males. This can include the use of violence to resolve conflicts, risk-taking behaviour and risky alcohol consumption. These behaviours increase the incidence of injury among males.

Environmental factors

The work environment is the main environmental factor that contributes to differences in health status between males and females.

Males are more likely to work in industries such as trades, farming and mining. The environments associated with these occupations can increase the risk of serious injury and death. These workplaces often involve the use of heavy machinery and tools, and exposure to hazardous substances such as chemicals and asbestos. As a result, males are more likely to be injured or

FIGURE 4.40 Gender stereotypes, such as different sports being considered masculine or feminine, can affect the type and risk of injuries experienced by males and females.



FIGURE 4.41 Sociocultural factors contribute to males being less likely to access healthcare than females.



killed at work and to develop respiratory conditions as a result of air pollution in the workplace.

Of the 183 work-related deaths recorded in 2019, 177 (97 per cent) involved male workers. The fatality rate for male workers was 30 times the rate for female workers.

Males are more likely to work outside and therefore have increased exposure to UV rays. This could explain the higher rates of melanoma and other skin cancers in males.

Males are also more likely to work in transport, which can lead to extended periods of time on public roads. This increases the risk of injury and death associated with road trauma.

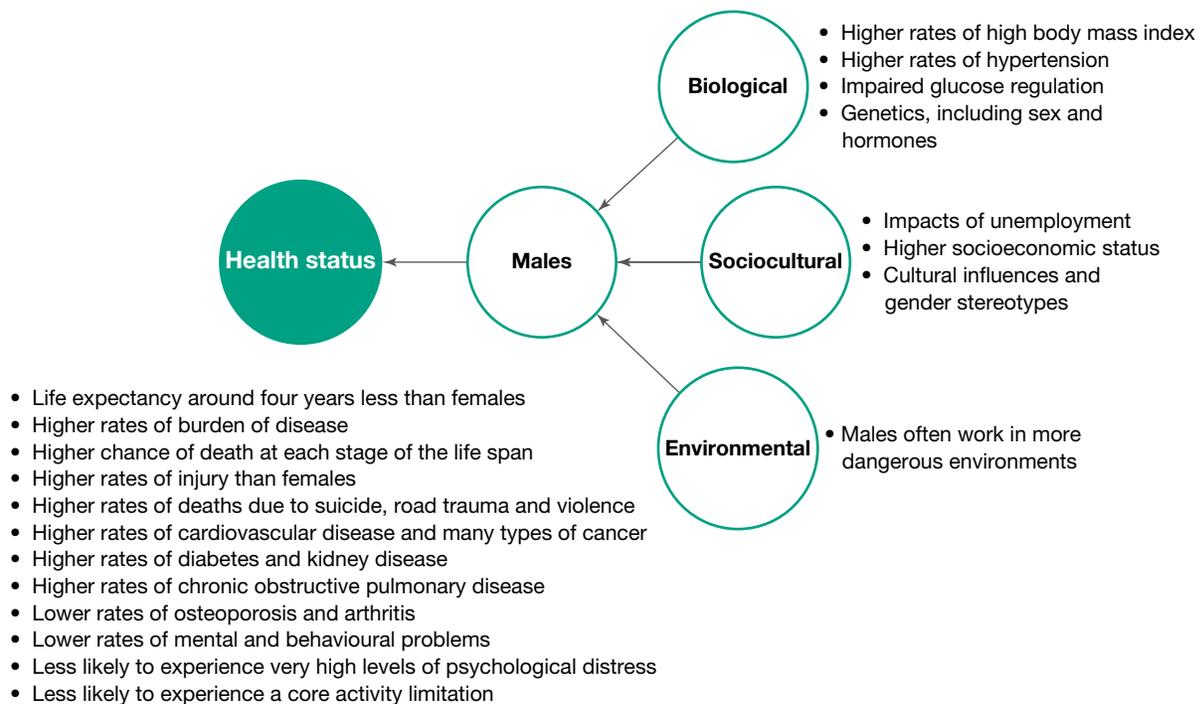
FIGURE 4.42 Jobs such as mining involve a certain amount of risk.



Summary of factors contributing to variations in the health status between males and females

FIGURE 4.43 summarises the factors affecting the health status of males.

FIGURE 4.43 The biological, sociocultural and environmental factors contributing to the health status of males



4.6 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

4.6 Quick quiz **on**

4.6 Exercise

4.6 Exam questions

Select your pathway

■ LEVEL 1

1, 2

■ LEVEL 2

3, 4, 5, 7

■ LEVEL 3

6, 8

Test your knowledge

1. What is the difference in life expectancy between males and females?
2. List two conditions that females are more likely to report suffering from.
3. a. Identify two trends shown in **FIGURE 4.39**.
b. Explain possible reasons for these trends.
4. Explain why females experience higher rates of osteoporosis than males.
5. Explain why males may experience more detrimental effects on their health status than females when unemployed.

Apply your knowledge

6. Identify and discuss three factors that might account for the higher death rates due to injuries in males.
7. Males are more likely to have a greater body mass than females. Outline two variations in health status that may occur as a result of this difference.
8. Use biological, sociocultural and/or environmental factors to explain the following:
 - a. Males have higher rates of type 2 diabetes.
 - b. Males experience higher rates of some cancers.
 - c. Males are less likely to access healthcare than females.

4.6 Quick quiz **on**

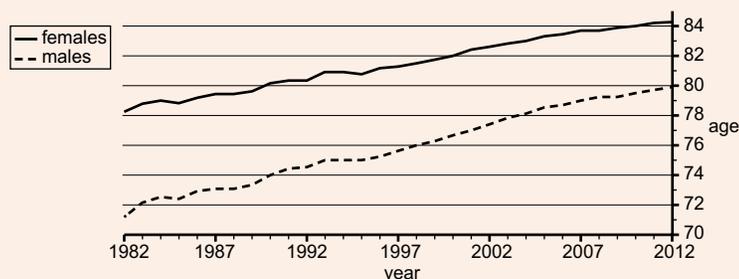
4.6 Exercise

4.6 Exam questions

Question 1 (5 marks)

Source: VCE 2014, *Health and Human Development Exam*, Q.4 (adapted); © VCAA

Australian life expectancy at birth – 1982 to 2010–2012



Source: Australian Bureau of Statistics. 'Life expectancy at birth', in 3302.0—Deaths, Australia, 2012

- a. **Compare** the life expectancy of males to females evident in the graph. **1 mark**
- b. **Explain** how one biological factor and one sociocultural factor could contribute to the variations in life expectancy between males and females. **4 marks**

Question 2 (4 marks)

Source: VCE 2009, Health and Human Development Exam, Q.2; © VCAA

In June 2008, the federal government made a commitment to the development of a national men's health policy.

The policy will aim to address health issues that men face in relation to:

- accessing health services
- engaging men about their health
- raising awareness of the range of preventable health problems.

Use these issues to **justify** two reasons why the government should develop a national men's health policy.

Use Table 2 to answer questions 3 and 4.

Question 3 (4 marks)

Source: VCE 2007, Health and Human Development Exam, Q.2.b.iii (adapted); © VCAA

TABLE 2 below shows the Disability-Adjusted Life Years (DALYs) by age, sex and cause in Victoria 2001.

Broad Disease Group	Males by age group years (years)					Females by age group (years)				
	0–14	15–34	35–54	55–74	75+	0–14	15–34	35–54	55–74	75+
Cancer	592	1581	11 849	38 954	18 165	373	2098	15 660	28 248	17 632
Diabetes	175	496	5450	7017	2177	169	381	4180	5818	3320
Mental disorders	4408	25 421	12 665	3429	467	2477	23 376	17 074	4570	530
Cardiovascular disease	121	1488	9869	26 332	22 579	220	1188	4567	16 821	31 868
Musculoskeletal diseases	63	592	2613	3648	1239	66	724	3555	5335	2814
Injuries	2138	14 479	8830	3209	1050	1207	4172	3340	1793	1690
Other	21 575	9056	16 641	33 024	27 017	16 869	13 450	15 115	25 638	38 393
Total	29 072	53 113	67 917	115 613	72 694	21 381	45 389	63 491	88 223	96 247

Source: Adapted from Public Health Group, Rural and Regional Health and Aged Care Services Division, 2005, Victorian Burden of Disease Study, Mortality and morbidity in 2001, Victorian Government Department of Human Services, Melbourne, p. 177
Variations in health status result from biological, sociocultural and environmental factors.

Choose two of these factors and **describe** how they may cause variations in health status between males and females.

Question 4 (3 marks)

Source: VCE 2007, Health and Human Development Exam, Q.2.b.ii; © VCAA

Using the data in Table 2, **what conclusions** can you make about the health status of Victorian males **compared** to Victorian females?

Use examples from Table 2 to support your conclusions.

Question 5 (2 marks)

List two variations in health status that exist between males and females.

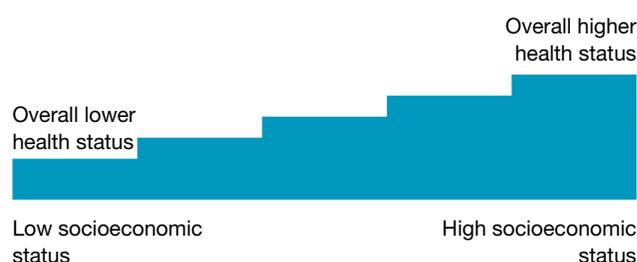
More exam questions are available in your learnON title.

4.7 Differences between high and low socioeconomic status population groups

KEY CONCEPT The variations in health status as experienced by low socioeconomic groups and the factors that explain the differences

People in the highest socioeconomic status (SES) groups tend to have more choices and resources available to them and therefore enjoy better health status. People in the lowest socioeconomic status groups are at the other end of the spectrum. Health status tends to improve for each step taken towards the highest socioeconomic status level (see **FIGURE 4.44**).

FIGURE 4.44 The social gradient

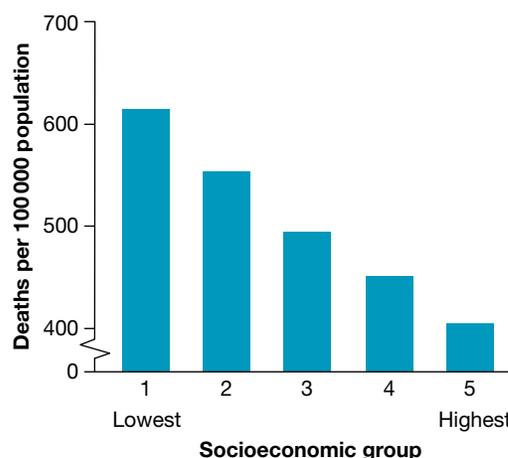


4.7.1 Key differences in health status

People living in lower socioeconomic status groups have:

- lower life expectancy (life expectancy is around three years lower for the most disadvantaged groups)
- greater burden of disease for both fatal and non-fatal outcomes (see **TABLE 4.1**)
- mortality rates 1.5 times higher than the higher socioeconomic status groups (see **FIGURE 4.45**).
- higher infant mortality rates
- higher rates of disability
- higher mortality rates from cardiovascular disease, lung cancer, type 2 diabetes, respiratory diseases and injuries
- a greater rate of potentially avoidable deaths. Potentially avoidable deaths are those deaths that might have been avoided through prevention, or through treatment, within the current health system. Examples include deaths due to road traffic accidents, lung cancer, diabetes and skin cancer.

FIGURE 4.45 Mortality rates, by socioeconomic status, 2018



Source: AIHW 2020. MORT (Mortality Over Regions and Time) books: Socioeconomic area, 2014–2018. Canberra: AIHW.

TABLE 4.1 DALY, YLL and YLD counts, age-standardised rates and rate ratios, by socioeconomic status, 2015

Socio-economic group	Total burden			Non-fatal burden			Fatal burden		
	DALY ('000)	Age-standardised rate (per 1000 people)	Rate ratio*	DALY ('000)	Age-standardised rate (per 1000 people)	Rate ratio*	DALY ('000)	Age-standardised rate (per 1000 people)	Rate ratio*
Quintile 1 (lowest)	1129	219.7	1.5	534	107.7	1.4	595	111.9	1.7
Quintile 2	1068	201.9	1.4	522	102.8	1.3	546	99.2	1.5
Quintile 3	960	185.3	1.3	486	96.6	1.2	474	88.7	1.4
Quintile 4	827	165.1	1.1	437	87.9	1.1	391	77.1	1.2
Quintile 5 (highest)	732	144.7	1.0	395	79.0	1.0	338	65.7	1.0
Australia	4752	184.3		2394	95.3		2358	89	

* The rate ratio indicates how many DALY, YLL or YLD were contributed in each area for every 1 DALY, YLL or YLD that was contributed by those in the highest socioeconomic group. For example, a rate ratio of 1.5 for total DALY for those in Q1 (the lowest socioeconomic group) indicates that for every 1 DALY contributed by those in the highest socioeconomic group, there were 1.5 DALY contributed by those in the lowest socioeconomic group.

Source: AIHW 2020, <https://www.aihw.gov.au/reports/burden-of-disease/abds-2015-interactive-data-disease-burden/data>

Quintiles are used when the population has been broken into fifths. Each fifth refers to 20 per cent of the population. In **TABLE 4.1**, the first quintile refers to the most disadvantaged fifth of the population with regards to socioeconomic position.

Low socioeconomic status groups also experience higher rates of morbidity relating to a range of conditions (see **TABLE 4.2**), specifically:

- higher rates of cardiovascular disease
- twice the rate of type 2 diabetes
- higher rates of mental and behavioural problems
- higher rates of arthritis
- higher rates of asthma and chronic obstructive pulmonary disease (COPD).

TABLE 4.2 Inequalities in certain chronic conditions

	Year	Lowest socioeconomic group (%)	Highest socioeconomic group (%)	Rate ratio: lowest/highest socioeconomic group
Arthritis	2017–18	19.0	11.4	1.7
Asthma	2017–18	13.3	10.0	1.3
Back problems	2017–18	18.7	13.6	1.4
Chronic kidney disease	2017–18	1.3	0.9	1.4
Cardiovascular disease	2017–18	6.0	3.9	1.5
Diabetes	2017–18	7.4	3.4	2.2
Lung cancer incidence	2012–16	54 per 100 000	31 per 100 000	1.7
Mental and behavioural problems	2017–18	24.3	16.0	1.5

* Lung cancer incidence were not included in the National Health Survey of 2017–18.

Source: ABS, *National Health Survey 2017–18* and AIHW, *Cancer in Australia 2019*.

4.7.2 Factors contributing to variations in health status between those with high and low socioeconomic status

People from low socioeconomic status groups tend to have poorer health status because they experience higher levels of risk factors for most health indicators.

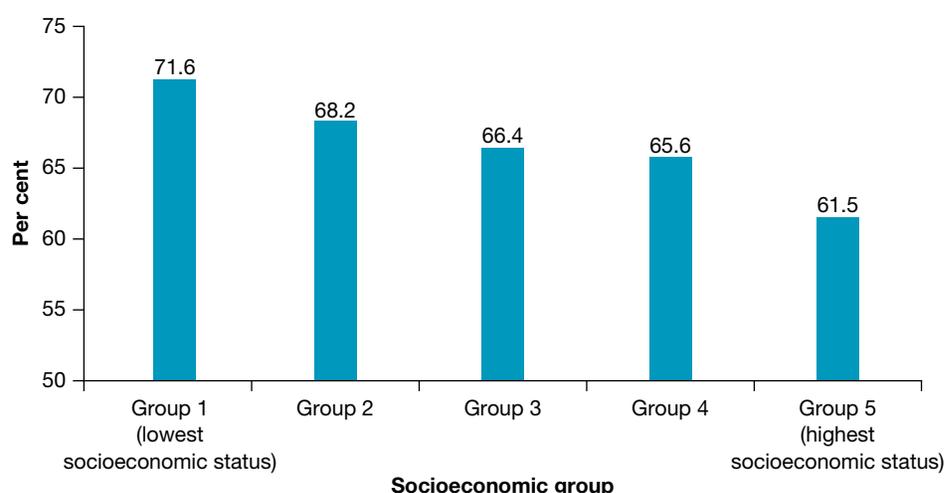
Biological factors

The biological factors that contribute to the variations in health status among low socioeconomic groups compared to the rest of the population include body weight, blood pressure, glucose regulation and birth weight.

Body weight

Rates of high body mass are higher for those in low socioeconomic status groups. As socioeconomic disadvantage increases, so does the rate of overweight/obesity (see **FIGURE 4.46**). This contributes to lower life expectancy largely due to the increased rates of death from conditions such as cardiovascular disease and type 2 diabetes.

FIGURE 4.46 Prevalence of overweight/obesity by socioeconomic status



Source: AIHW, <https://www.aihw.gov.au/reports-data/behaviours-risk-factors/overweight-obesity/data>

Blood pressure

Rates of hypertension are higher among low socioeconomic status groups (25 per cent compared to 20 per cent in the highest socioeconomic group). This contributes to a higher rate of DALY (see **FIGURE 4.47**) due to conditions such as cardiovascular disease and higher rates of premature death.

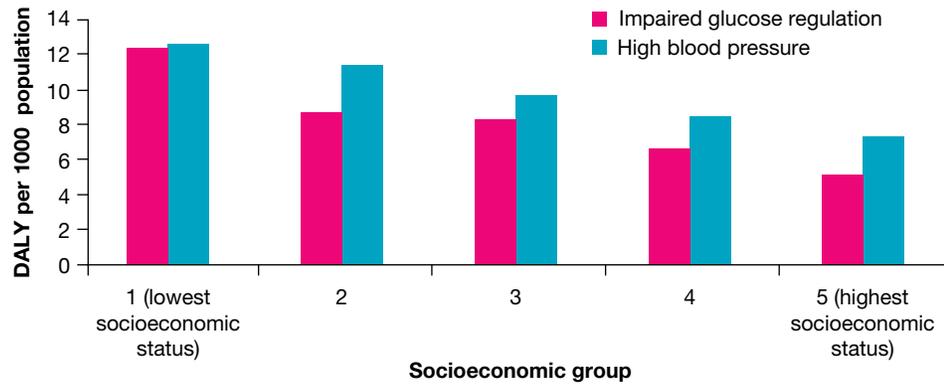
Glucose regulation

Rates of impaired glucose regulation are higher among low socioeconomic status groups. This contributes to the higher burden experienced in relation to conditions such as type 2 diabetes and kidney disease (see **FIGURE 4.47**).

Birth weight

Women experiencing socioeconomic disadvantage are more likely to give birth to babies with low birth weight. Babies born into low socioeconomic status families in 2018 were 35 per cent more likely to have a low birth weight compared with those of high socioeconomic status (8 per cent compared with 5.6 per cent respectively). This contributes to higher rates of under-five mortality, infection and disability among low socioeconomic groups.

FIGURE 4.47 DALY (rate per 1000 people) caused by high blood pressure and impaired glucose regulation, according to socioeconomic status group, 2015.



Source: AIHW, *Australian Burden of Disease Study 2015*, <https://www.aihw.gov.au/reports/burden-of-disease/interactive-data-risk-factor-burden/contents/high-blood-pressure>

Sociocultural factors

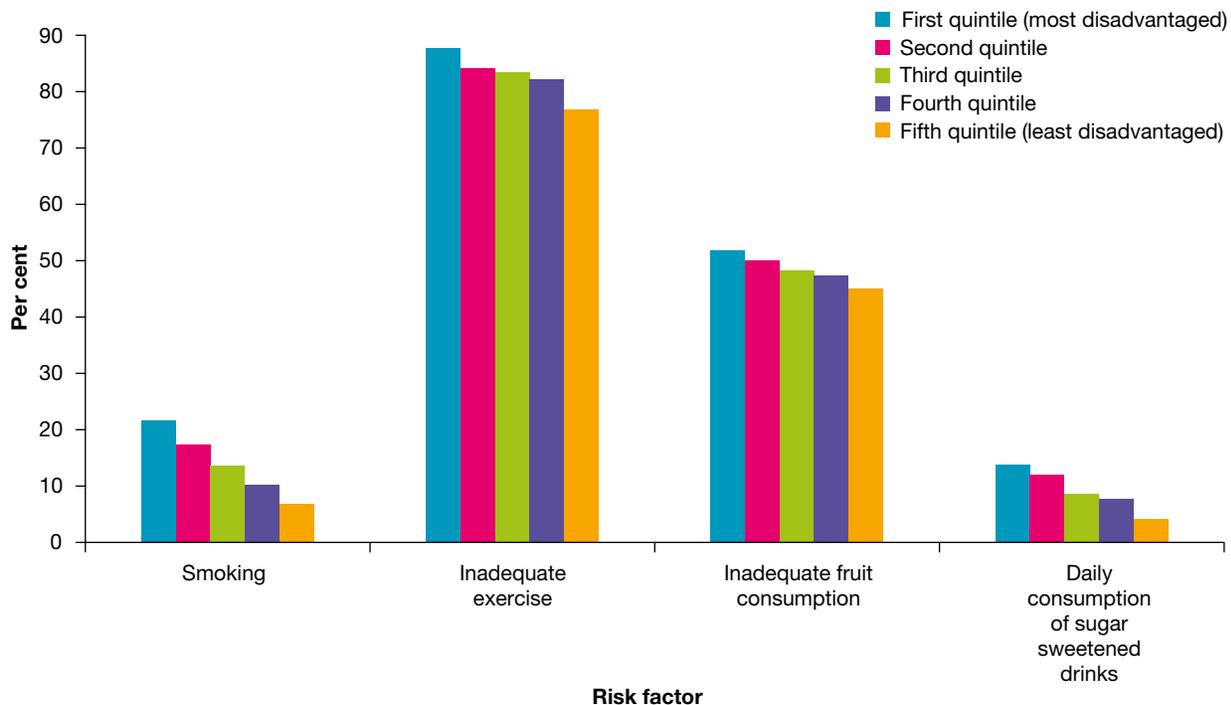
A range of sociocultural factors contribute to the variations in health status experienced by low socioeconomic groups, including education and income, unemployment, social exclusion, **food security**, early life experiences, access to healthcare, and neighbourhood safety.

Education and income

People in low socioeconomic status groups have lower educational attainment, lower incomes and jobs with lower social status. These factors are interrelated and all influence higher rates of risky behaviours such as unhealthy food intake, smoking, lack of physical activity, and lower likelihood of accessing healthcare (see **FIGURE 4.48**). Such factors in turn influence the lower health status experienced by these groups including lower life expectancy, higher morbidity rates and higher mortality rates.

Food security 'the state in which all persons obtain nutritionally adequate, culturally appropriate, safe food regularly through local non-emergency sources' (VicHealth, 2008)

FIGURE 4.48 Prevalence of smoking, lack of physical activity, inadequate fruit consumption and daily consumption of sugar sweetened drinks by socioeconomic status groups, 2017–18



Source: Adapted from ABS, *National health survey 2017–18*.

According to the AIHW (2019), those with lower average incomes experienced lower levels of health literacy than those with higher average incomes.

This difference contributes to the higher rates of risk factors displayed, such as lower rates of healthcare usage (including during pregnancy) for those in low SES groups. This contributes to more conditions going undiagnosed and untreated, which partly explains the higher rates of morbidity and mortality experienced among low SES groups, including among pregnant women and children.

Those in lower socioeconomic groups may also feel that they have less control over their lives (including in relation to finances, work and health status), and this can contribute to a sense of helplessness and a reluctance to modify risk factors such as smoking. This contributes to higher rates of premature mortality and lower life expectancy.

FIGURE 4.49 Education comes in many forms and is related to health outcomes.

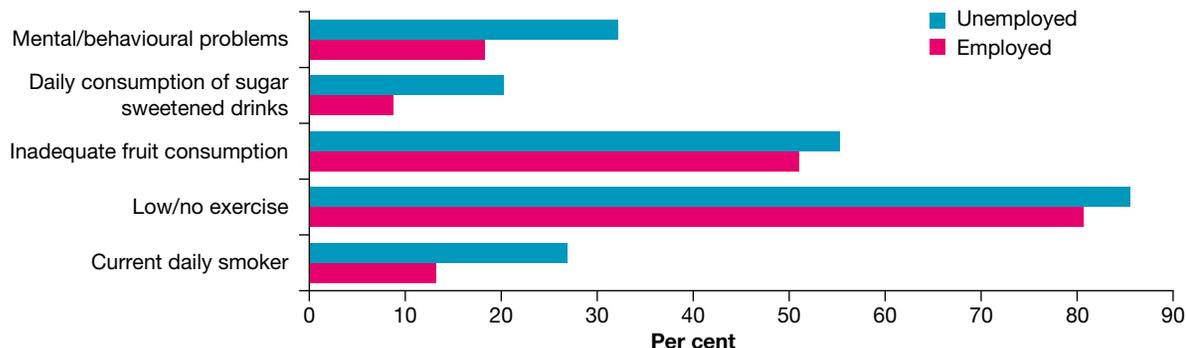


Unemployment

People experiencing socioeconomic disadvantage are more likely to be unemployed. As already explored, those who are unemployed are also more likely to experience poor health status. This can lead to unemployment, creating a cycle between unemployment and poor health status. There is a relationship between unemployment, risk-taking behaviours and impacts on health status (see **FIGURE 4.50**).

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FIGURE 4.50 Prevalence of health-related factors by employment status, people aged 15 and over, 2017–18



Source: Adapted from ABS, *National health survey 2017–18*.

Social exclusion

Socioeconomic disadvantage can also lead to social exclusion as individuals are less likely to gain education, meaningful employment and access community resources, such as healthcare and social security, which can contribute to a cycle of disadvantage. Those who are socially excluded experience poorer physical and mental health and wellbeing than those who are socially connected.

Food security

People living with socioeconomic disadvantage are more likely to experience food insecurity. Lack of financial resources can lead to an inability to afford nutritious foods. Research suggests that healthy food options are often more expensive and harder to access in areas of socioeconomic disadvantage (DHS, 2010), which adds to the insecurity of the food supply to these groups.

Higher rates of obesity and lower rates of fruit and vegetable consumption are often the product of food insecurity. This can contribute to higher rates of cardiovascular disease, diabetes and some types of cancer. Those with low socioeconomic status may also lack sufficient knowledge of what constitutes healthy eating.

Early life experiences

Early life experiences impact those in low socioeconomic groups in a number of ways. According to the AIHW (2020), mothers in the lowest socioeconomic status groups were more than six times as likely to have smoked in pregnancy than those in the highest socioeconomic status groups (17.2 per cent and 2.7 per cent respectively). This contributes to higher rates of respiratory conditions such as asthma, low birth weight among babies, and higher infant and under-five mortality rates for those born to mothers living in low socioeconomic environments.

Women from the lowest socioeconomic areas were more likely to begin antenatal care later in pregnancy, and to have a higher body mass index in pregnancy, than women from the highest socioeconomic areas. They were also more likely to give birth early (or pre-term) to babies of low birth weight than women from the highest socioeconomic areas, contributing to the higher U5MR experienced by these groups.

Access to healthcare

People from low socioeconomic status groups are also less likely to access preventative and early detection health services such as BreastScreen and cervical cancer screens. This can lead to health conditions going undiagnosed. As a result, fewer treatment options are available once a diagnosis is made, contributing to higher rates of mortality from conditions such as breast and cervical cancer.

Those with low socioeconomic status are less likely to have private health insurance, with 66.8 per cent of the most disadvantaged not having private health insurance compared with 23.5 per cent of the most advantaged. This can contribute to psychological distress and extend waiting times for surgery, which can increase rates of morbidity and mortality.

Neighbourhood safety

According to the ABS (2020), people living in areas with the highest SES were more likely to feel safe or very safe at home alone at night (94.4 per cent) than those living in the lowest SES areas (80.7 per cent). Those living in areas with the highest SES were more likely to report feeling safe or very safe (68.7 per cent) walking in their local area at night than those living in areas with the lowest SES (49.1 per cent). Lower feelings of safety in the home and neighbourhood can increase anxiety and stress, and contribute to higher rates of mental health issues among low socioeconomic status groups.

Environmental factors

A range of environmental factors influence the variations in health status between high and low socioeconomic groups, including geographic location, housing and the work environment.

Geographic location

Suburbs where socioeconomic disadvantage is greater are often the suburbs with the highest number of fast food outlets. Fast food is generally higher in fat, salt and sugar than other options. Living in close proximity to such outlets may increase the likelihood of people consuming these foods, contributing to higher rates of obesity and associated conditions. People in low socioeconomic status groups are often less educated about healthy eating and may be more likely to be influenced by marketing.

According to VicHealth (2015):

It is clear that disparities in sports and recreational facilities exist according to neighbourhood-level SES. For example, a study of public open space in neighbourhoods of low and high SES in Victoria found little variation in the number of playgrounds or leisure facilities according to SES. However, public open spaces in high SES neighbourhoods were of higher quality than in low SES neighbourhoods in terms of amenities and aesthetics, such as picnic areas, foliage (provision of shade), water features, walking and cycling paths.

This contributes to lower rates of physical activity in lower socioeconomic groups, which in turn contributes to many variations in health status when compared to those living in higher socioeconomic areas.

CASE STUDY

'Living here will make you fat' — do we need a public health warning?

By Karen Charlton, Associate Professor, School of Medicine, University of Wollongong and Abhijeet Ghosh, Researcher, University of Wollongong

Governments have invested billions in efforts to prevent obesity, yet Australians keep getting fatter, especially in areas of socioeconomic disadvantage.

Over the past two decades, the prevalence of obesity rose in adults from 19 per cent to 28 per cent. The proportion who are overweight remained similar at around 38 per cent. This means two-thirds of Australian adults are now overweight, with a body mass index (BMI) of 25–29.9, or obese (BMI \geq 30).

A new study published in *BMJ Open* confirms that obesity is highest in Australians who live in areas of socioeconomic disadvantage. The age-adjusted odds ratio of being overweight or obese was determined for high and low levels of socioeconomic disadvantage. We analysed data collected from almost 37 000 patients based on their interactions with their general practitioners over two years (September 2011 to 2013).

This study is part of the larger Sentinel Practices Data Sourcing project. This aims to develop a surveillance system for monitoring chronic diseases within the South-eastern NSW Primary Health Network.

Patients' area of residence was categorised using the Socio-Economic Index for Areas of relative socioeconomic disadvantage. Both men and women living in areas of highest socioeconomic disadvantage had a 29 per cent higher risk of being obese. The opposite association was found for being overweight, at least in men (those in areas of lesser relative socioeconomic disadvantage were more likely to be overweight).

'What makes low-SES areas 'obesogenic'?

It is well recognised that an inverse relationship exists between socioeconomic status (SES) and obesity. But the reasons for this are not straightforward.

'Obesogenicity' (the sum of influences that physical surroundings have on promoting excessive weight gain) of neighbourhoods may relate to the food environment (inadequate access to local sources of healthy foods, such as supermarkets and greengrocers, or easy access to unhealthy foods, such as fast-food restaurants) or the physical activity environment (less green space, unsafe neighbourhoods).

In the US, it has been demonstrated that neighbourhoods in lower socioeconomic areas are more 'obesogenic' than those in richer areas. This translates to higher levels of obesity in children and adults. But these findings are not directly transferable to Australia.

A study of socioeconomically disadvantaged areas in Victoria ranked neighbourhoods using an index that included three domains:

- food resources (supermarkets, green grocers, fast-food restaurants)
- recreational activity resources (gyms, pools, park space)
- walkability (four or more intersections within a 2 km buffer, walking environment, neighbourhood safety).

Surprisingly, neighbourhood 'obesogenicity' was not associated with BMI of residents. It seems other factors may be at play.

Supermarkets and shelf space

Supermarket proximity may not necessarily reflect access to healthier foods. About 30 per cent of supermarket shelf space comprises junk (or non-core) foods. However, the shelf space dedicated to non-core foods does not differ according to the location of the supermarket.

There is also no association between proportion of shelf space allocated to non-core foods and their purchase. But low-SES Australian shoppers do buy significantly more non-core foods than high-SES shoppers, especially chips and sugar-sweetened carbonated beverages and cordials.

This behaviour is likely to be driven by the economics of food choice theory: people on low incomes maximise energy availability per dollar. They buy foods that provide the most energy (usually with few other nutrients) for the least cost. This has been shown to influence food purchases in Indigenous communities.

There may also be less segregation in Australia between neighbourhoods classified as high versus low SES. Or there may be less clustering of fast-food restaurants in low-SES neighbourhoods than occurs in the US. Also, ►

people may not necessarily shop or eat out where they live, particularly if they commute to work and access fast-food outlets on their way home.

Green space effects vary

A study in NSW found that proximity of residence to green space was associated with undertaking more moderate-to-vigorous physical activity and having less sitting time in both men and women.

However, this activity translated into lower body weight only in women; those who lived close to green space had a 10–20 per cent lower risk of being overweight or obese, respectively, compared to those who lived further from such areas.

It could be that men compensate for being active by eating more, regardless of where they live, but this hypothesis remains to be proven.

There is little doubt that state government investment to enhance green spaces may promote physical activity in middle-to-older-aged adults. This has to be a good thing, but the impact on obesity may not benefit everyone to the same extent.

How can we reduce obesity in low-SES areas?

Our study provides new insights for population health planning. The findings highlight a need for preventive health initiatives to be specific to gender and the socioeconomic attributes of the target population.

We propose that, in areas of highest socioeconomic disadvantage, primary care providers could have more streamlined approaches to direct obese patients to existing weight loss programs. These include the free government-funded, population-based Get Healthy Information and Coaching Service.

In areas of low socioeconomic disadvantage, efforts could be focused on preventing further weight gain in adults, particularly men, who are already in the overweight range.

Encouraging patients to keep a close eye on their weight could be achieved through routine weighing every time they attend their general practitioners. This is an effective strategy and is relatively simple. However, recording of height and weight measures in general practices especially in regional settings is much lower than optimal.

Source: 'Living here will make you fat' – do we need a public health warning?, Karen Charlton and Abhijeet Ghosh, *The Conversation*, 4 May 2016, <http://theconversation.com/living-here-will-make-you-fat-do-we-need-a-public-health-warning-57119>

CASE STUDY REVIEW

1. Compared to those in high socioeconomic areas, how much more likely were those in low socioeconomic areas to be obese?
2. What is meant by the term 'obesogenic'?
3. Identify the factors that may contribute to a neighbourhood being obesogenic.
4. Outline variations in health status that occur for low socioeconomic groups as a result of the differences between low and high socioeconomic groups discussed in the article.

Housing

People of low socioeconomic status are less likely to be able to afford high quality housing. As a result, they are more likely to experience:

- overcrowding, which can put a strain on sanitation facilities, resulting in an increased rate of infection. Overcrowding can also result in increased rates of psychological distress and mental health disorders.
- inadequate cooking facilities, which can lead to a reliance on processed foods, contributing to higher rates of obesity and associated conditions
- an unsafe physical environment due to hazards such as inadequate ventilation and fire hazards, such as unserviced heating appliances and lack of smoke detectors, which increase the risk of injuries and respiratory conditions such as asthma
- closer proximity to industrial sites. This can increase the level of air and noise pollution, which can contribute to respiratory diseases, anxiety and stress.

As smoking rates are higher among low socioeconomic groups, children and non-smoking adults in these groups have an increased risk of exposure to environmental tobacco smoke. This increases the risk of sudden infant death syndrome (SIDS), respiratory diseases such as asthma, and other conditions, including cancer and

cardiovascular disease. According to AIHW data (2016), children living in households in the lowest SES areas were nearly four times as likely as those in the highest SES areas to be exposed to tobacco smoke in the home (7.2 per cent compared with 2 per cent).

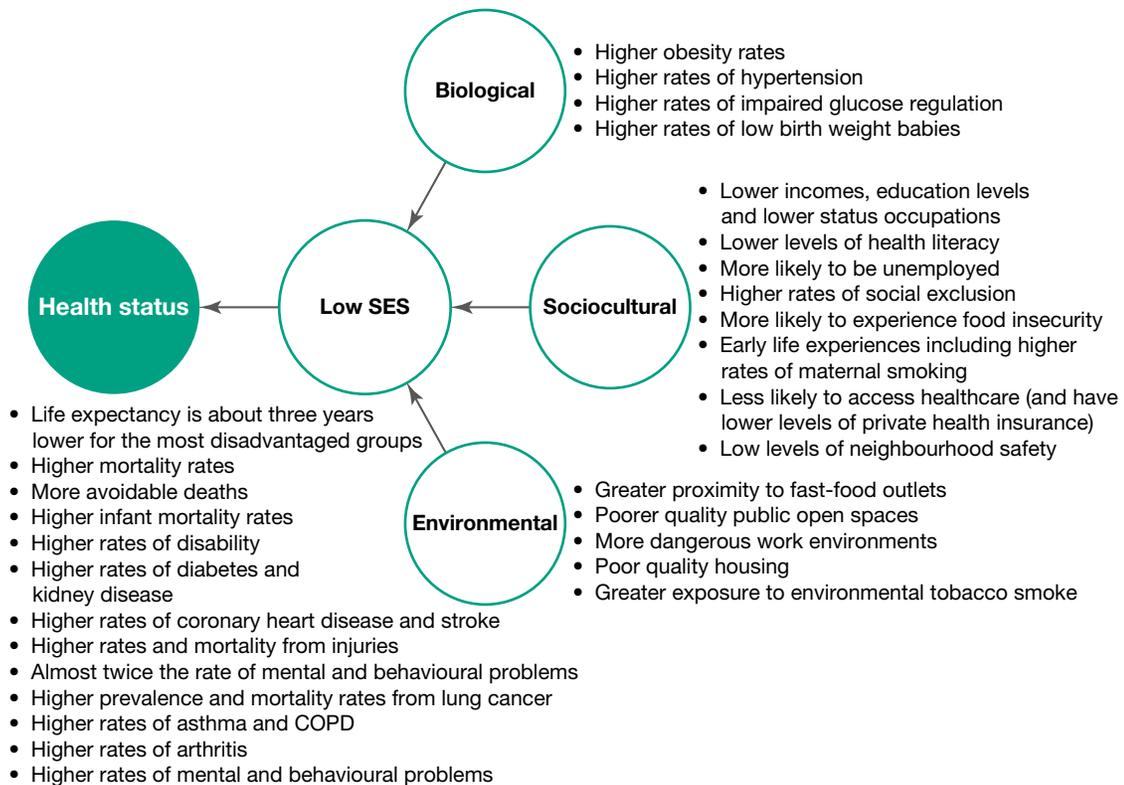
Work environment

People living in socioeconomic disadvantage are more likely to work in jobs that have dangerous working environments, such as factories and manufacturing plants, and involve exposure to toxic substances and heavy machinery. This may contribute to higher rates of illness, injury, respiratory conditions and some cancers.

Summary of factors contributing to variations in the health status between those with high and low socioeconomic status

FIGURE 4.51 summarises the factors affecting the health status of high and low socioeconomic groups.

FIGURE 4.51 Factors contributing to variations in health status between high and low socioeconomic groups



4.7 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

4.7 Quick quiz on	4.7 Exercise	4.7 Exam questions
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Select your pathway

<p>■ LEVEL 1 1, 2, 5</p>	<p>■ LEVEL 2 3, 4, 6, 7, 9, 13</p>	<p>■ LEVEL 3 8, 10, 11, 12, 14, 15</p>
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Test your knowledge

- Identify three differences in health status between low and high socioeconomic status groups.
- What relationship exists between socioeconomic status and health status?

3. Identify a trend from **FIGURE 4.45** and suggest possible reasons for the trend.
4. From **TABLE 4.2**, which condition shows the biggest difference between high and low socioeconomic status?
5. What is a quintile?
6. Explain the differences in rates of overweight/obesity for lowest and highest quintiles of socioeconomic advantage as shown in **FIGURE 4.46**.
7.
 - a. Outline the relationship between socioeconomic status and the rate of DALY as a result of high blood pressure and impaired glucose regulation.
 - b. Identify the conditions that can occur as a result of high blood pressure and impaired glucose that would contribute to the trend outlined in part a.
8. Refer to **FIGURE 4.48** to answer these questions.
 - a. What percentage of the most socioeconomically advantaged quintile are smokers, physically inactive, have inadequate fruit consumption and consume sugar sweetened drinks on a daily basis? How does this compare with the most disadvantaged quintile?
 - b. Outline socioeconomic and environmental factors that contribute to the differences identified in part a.

Apply your knowledge

9. Making reference to biological, sociocultural and environmental factors, discuss why people from lower socioeconomic status groups are more likely to suffer from mental and behavioural problems.
10.
 - a. Referring to **TABLE 4.1**, identify a relationship between socioeconomic status and rate ratio of burden of disease.
 - b. Explain how one biological, sociocultural and environmental factor may contribute to the relationship identified in part a.
11. Suggest possible reasons why people from lower socioeconomic status groups may experience higher rates of infant mortality.
12. Many health services (such as screening for breast and cervical cancers) are available free through Medicare, yet people from low socioeconomic status groups are less likely to use them. Suggest possible reasons for this.
13. People who are born into low socioeconomic status families are more likely to belong to low socioeconomic status groups later in life. Draw a cycle diagram illustrating how this may occur.
14. Select two factors from each category (biological, sociocultural and environmental) presented in **FIGURE 4.51** and discuss the likely impact on health status for each one.
15. Why might people with a low socioeconomic status be less likely to take notice of health promotion messages?

4.7 Quick quiz



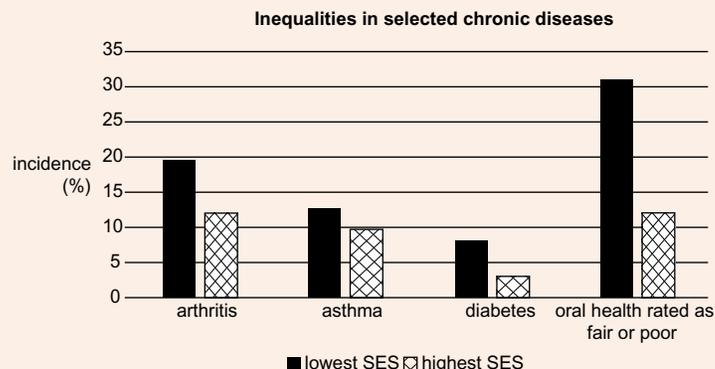
4.7 Exercise

4.7 Exam questions

Question 1 (1 mark)

Source: VCE 2017, Health and Human Development Exam, Q.7.a; © VCAA

The following graph shows the incidence of selected chronic diseases by socio-economic status (SES) in Australia in 2014–2015.



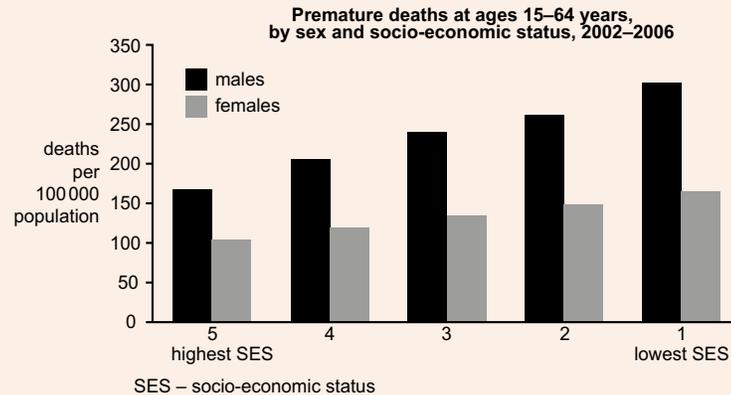
Data: Australian Institute of Health and Wealth (AIHW), *Australia's Health 2016*, 'Australia's Health' series no. 15, cat. no. AUS 199, AIHW, Canberra, 2016, p. 184

Outline the relationship between SES and health status shown in the graph above.

Question 2 (1 mark)

Source: VCE 2013, Health and Human Development, Section B, Q.5.a; © VCAA

Using information from the graph, **identify** how socio-economic status is related to deaths per 100 000.



Source: Australian Institute of Health and Welfare, *Australia's Health 2010*, 'Australia's health' series no. 12, cat. no. AUS 122, Canberra, 2010, p. 254

Question 3 (2 marks)

Source: VCE 2013, Health and Human Development, Section B, Q.5.b (adapted); © VCAA

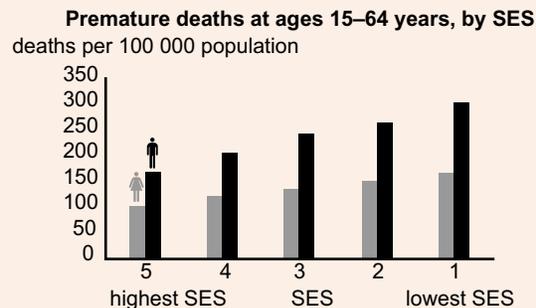
Using the graph in question 2, **identify** one biological factor and **explain** how it might contribute to the differences in deaths per 100 000 between the population groups with the highest and lowest socioeconomic status.

Question 4 (2 marks)

Source: VCE 2011, Health and Human Development Exam, Section A, Q.4.a; © VCAA

Health status varies within population groups in Australia. The graph below shows premature death rates for the 15–64 year age group according to socioeconomic status (SES).

Identify two factors that contribute to socioeconomic status.



Question 5 (2 marks)

Source: VCE 2011, Health and Human Development Exam, Section A, Q.4.b (adapted); © VCAA

Health status varies within population groups in Australia. The graph in question 4 shows premature death rates for the 15–64 year age group according to socioeconomic status (SES).

From the data in the graph in question 4, **describe** a conclusion that can be drawn about the relationship between socioeconomic status and rates of premature death.

More exam questions are available in your learnON title.

4.8 Differences between those living within and outside of Australia's major cities

KEY CONCEPT The variations in health status as experienced by those living within and outside of Australia's major cities and the factors that explain the differences

The vast landscape in Australia poses many challenges for its inhabitants. As well as factors influenced by the remoteness in which some people live, such as access to services and social isolation, many people living outside of major cities also experience challenges from the natural environment, such as droughts, bushfires and floods.

Overall, people living outside major cities experience worse health status than their urban counterparts. Many people who live outside major cities are of Aboriginal or Torres Strait Islander background (65 per cent of Aboriginal and Torres Strait Islander people live outside major cities compared to around 29 per cent of other Australians) and are also more likely to be of lower socioeconomic status. This means that many of the health concerns for people of Aboriginal and Torres Strait Islander and low socioeconomic status are carried over to those living outside major cities.

Classifying people based on geographical location is difficult in Australia as a result of the various landscapes and characteristics of this vast country. For the sake of this course, the population living inside major cities relates to those living in cities classified as 'major cities' according to the Australian Bureau of Statistics. In Victoria, this includes Melbourne and Geelong. In other states, major cities are Sydney, Newcastle, Wollongong, Tweed Heads and the Tweed Coast, Brisbane, most of the Gold Coast and much of the Sunshine Coast, Adelaide, Perth, and Canberra and Queanbeyan. Hobart and Darwin are not included in the major cities group.

'Those living outside major cities' relates to those in or near regional centres (such as Hobart, Darwin, Bendigo and Ballarat) and those in remote and very remote areas (such as Genoa and Murrayville; note that, unlike other states, Victoria contains no 'very remote' areas). As this definition encompasses many different groups, the variations in health status between those living outside major cities is considerable. Using this classification, about 28 per cent of Australia's population lives outside of major cities (AIHW, 2020): 18 per cent in *Inner regional* areas, 8.1 per cent in *Outer regional* areas, 1.1 per cent in *Remote* areas and 0.8 per cent in *Very remote* areas.

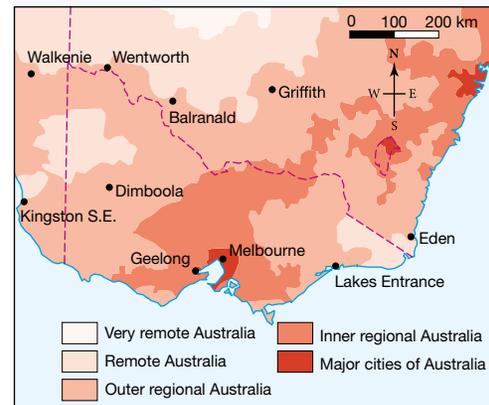
4.8.1 Key differences in health status

Health status decreases as remoteness increases, so those living in remote areas generally experience poorer health outcomes than those living in regional areas.

Those living outside major cities experience the following differences in health status when compared to their major city counterparts:

- lower life expectancy (life expectancy decreases as the level of remoteness increases: one to two years less for rural areas and up to seven years less for remote areas)
- higher burden of disease from both fatal and non-fatal causes. The rate of DALY attributed to each group increases with remoteness (see **TABLE 4.3**).
- mortality rates are 1.4 times higher than those in major cities

FIGURE 4.52 The two major cities in Victoria are Melbourne and Geelong.



Source: AIHW, *Rural, regional and remote health indicators of health status and determinants of health*, March 2008.

- higher rates of preventable cancers (lung, melanoma and detectable cancers, such as cervical cancer)
- higher death rates from cardiovascular disease, including coronary heart disease
- higher rates of avoidable deaths
- higher rates of injury, including a mortality rate 4 times higher than those in major cities for land transport accidents
- higher rates of diabetes
- higher rates of arthritis
- higher rates of suicide
- higher rates of asthma and chronic obstructive pulmonary disease
- higher rates of dental decay.

As can be seen in **TABLE 4.3**, the DALY age-standardised rate for many conditions increases with remoteness.

TABLE 4.3 DALY, YLL and YLD counts, age-standardised rates and rate ratios, by remoteness, 2015

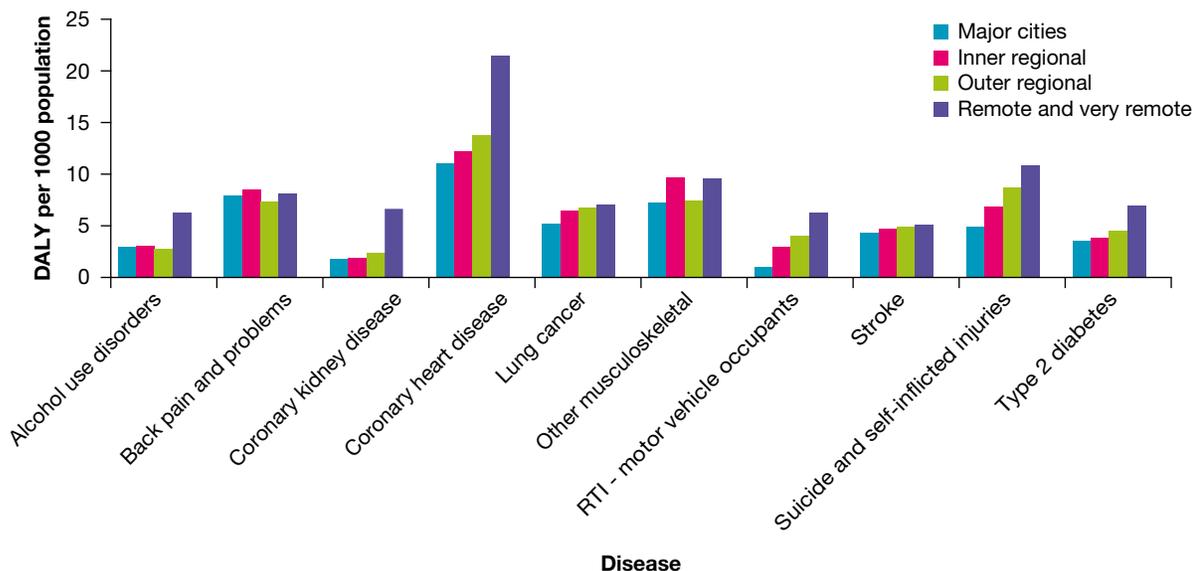
	Total burden			Non-fatal burden			Fatal burden		
	DALY ('000)	Age-standardised rate (per 1000 people)	Rate ratio*	DALY ('000)	Age-standardised rate (per 1000 people)	Rate ratio*	DALY ('000)	Age-standardised rate (per 1000 people)	Rate ratio*
Major cities	3114	175	1.0	1631	93.2	1.0	1484	81.7	1.0
Inner regional	999	198	1.1	471	98.7	1.1	529	99.3	1.2
Outer regional	478	203	1.2	216	95.1	1.0	263	107.9	1.3
Remote and Very remote	120	249	1.4	53	108.9	1.2	67	139.6	1.7

* The rate ratio indicates how many DALY, YLL or YLD were contributed in each area for every 1 DALY, YLL or YLD that was contributed by those in major cities. For example, a rate ratio of 1.7 for total DALY for those in very remote areas indicates that for every 1 DALY contributed by those in major cities, there were 1.7 DALY contributed by those in very remote areas. The rate ratios are scaled to the number of people living in each area and therefore provide a fair way of comparing the total contribution in each area.

Source: AIHW 2020, *Australian burden of disease study: impact and causes of illness and death in Australia 2015*, p. 86.

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FIGURE 4.53 Age-standardised DALY rate (per 1000 people) for selected conditions, by remoteness, 2015



Source: AIHW 2020, *Australian Burden of Disease Study 2015*, <https://www.aihw.gov.au/reports/burden-of-disease/abds-2015-interactive-data-disease-burden/data>

4.8.2 Factors contributing to variations in health status for those living within and outside of Australia's major cities

A number of factors contribute to poorer health status due to the location in which people live. People living outside Australia's major cities experience a range of environmental risk factors as well as higher rates of many biological and sociocultural risk factors.

Biological factors

The biological factors that contribute to the variations in health status experienced by those living outside of Australia's major cities include body weight, blood cholesterol, glucose regulation, birth weight and blood pressure.

Body weight

Levels of high body mass index are higher among those living outside of major cities (about 10 per cent higher than in major cities). This puts this group at higher risk of developing type 2 diabetes, cardiovascular disease and some cancers.

Blood cholesterol

Those living outside of major cities are 10 per cent more likely to experience high blood cholesterol than their city-dwelling counterparts. This contributes to the higher rates of cardiovascular disease, including hypertension, experienced by those living outside Australia's major cities.

Glucose regulation

People living outside of major cities are more likely to experience impaired glucose regulation than those in major cities, and the rate increases with remoteness. This raises the risk of conditions such as type 2 diabetes and kidney disease.

Birth weight

The percentage of low birth weight infants is higher in remote and very remote areas (about 11.2 per cent in very remote areas) compared with rates for those in major cities (6.6 per cent in 2018).

Blood pressure

People living outside of major cities experience higher rates of hypertension (1.2 times the rate of those in major cities). This increases the risk of cardiovascular disease and contributes to the higher burden of disease seen in these areas.

Sociocultural factors

The sociocultural factors that contribute to variations in health status among people living outside of Australia's major cities include socioeconomic status, unemployment, food security, early life experiences and social isolation.

Socioeconomic status

More than half of outer regional, remote and very remote residents live in areas of socioeconomic disadvantage, while the corresponding figure in major cities is about one-quarter. Limited opportunities for education and employment account for part of this difference. This contributes to higher rates of risky behaviours such as smoking and low levels of physical activity. These in turn influence health status outcomes such as rates of preventable diseases, including cancer and cardiovascular disease and lower life expectancy.

People living outside Australia's major cities are more likely to rely on social security payments than those in major cities, indicating that more people struggle financially in rural and remote areas. This can impact on access to an adequate food supply and healthcare.

Unemployment

People living outside Australia's major cities experience higher rates of unemployment compared with those in major cities. Unemployment is one aspect that results in people from rural and remote areas experiencing lower socioeconomic status, which in turn contributes to lower health status.

Food security

People in rural and remote areas are 1.2 times more likely to experience food insecurity than their city counterparts. This is largely due to high costs and lack of access. Transporting food to remote areas adds significant costs, particularly for fresh foods. This can lead to the consumption of more processed food items with a long shelf life such as canned and packaged foods, which often have high levels of fat, salt and/or sugar. This can contribute to higher rates of obesity, type 2 diabetes and cardiovascular disease.

Early life experiences

According to AIHW data (2020), about one-third (36.4 per cent) of mothers in very remote areas who gave birth in 2016 smoked during pregnancy — five times the rate in major cities (6.9 per cent). This contributes to higher rates of low birth weight babies, babies with asthma, and infant and under-five mortality.

Social isolation

People living outside Australia's major cities often have higher rates of community participation and feel like they are part of a community, but they may still be socially isolated due to geographic distances. Social isolation results from a lack of contact with other people such as family, neighbours and friends. Social isolation contributes to higher rates of mental health disorders and suicide as the individual may experience feelings of loneliness and have no-one to talk to in times of trouble.

Environmental factors

Factors within the physical environment that contribute to variations in health status for people living outside Australia's major cities include infrastructure, geographic location, climate and climate change, and work environments.

Infrastructure

In rural and remote areas, roads are generally in poorer condition, driving times and distances are longer, wildlife is more likely to cross the path of vehicles, and roads may be poorly lit at night. All of these factors contribute to higher mortality and morbidity rates due to injuries in these areas.

Many communities in remote areas do not have access to mains water supplies from towns or cities, which is often fluoridated. Non-fluoridated water supplies can increase dental health issues such as dental caries.

Geographic location

Proximity to resources is a significant challenge for many living outside of major cities.

The location of health services can influence whether a person living outside major cities can access healthcare in times of need. According to the AIHW (2018), in 2016 the proportion of people not accessing health services due to geographical barriers increased with remoteness, from 6.2 in major cities to 38 per cent in remote/very remote areas. This can mean that conditions can go undiagnosed and untreated, which can increase morbidity and mortality rates. In addition, if specialist health services are required or hospitalisation is needed, family members often have to take time off work to transport those who are ill to these services. This adds additional costs and increases the level of stress and anxiety experienced.

FIGURE 4.54 For many Australians in remote areas, the Royal Flying Doctor Service is the only access they have to emergency medical care.



The area in which a person lives may determine the type of foods that they can access. Living in remote areas may make it difficult to access fresh food items such as fish, fruit and vegetables. As a result, some people may rely on processed foods, which are often higher in fat, salt and sugar. This can increase the risk of overweight, obesity, cardiovascular disease and type 2 diabetes.

Those living outside Australia's major cities also experience geographical barriers to recreation facilities, transport and employment opportunities. This can contribute to a range of issues such as low socioeconomic status, unemployment, increased risk of morbidity and mortality, and lower life expectancy. Geographical isolation also contributes to social isolation, a sociocultural factor that was explored in the previous section.

Climate and climate change

People living in rural and remote areas may experience greater hardship in regard to climate. Droughts, floods and fires can disrupt farmers and lead to unstable income. This in turn lowers socioeconomic status and increases stress levels. Climate change is also predicted to have a greater impact on those living in rural and remote areas compared to those in major cities (Climate Commission, 2011). Increased frequency of natural disasters such as fires, floods and droughts can affect health status by increasing the risk of injuries and mental health disorders. The relative isolation of people in remote areas can particularly reduce access to support services to deal with climate change.

FIGURE 4.55 Rural and remote Australia poses many challenges for its inhabitants. The natural environment is one of these challenges.



Rainfall patterns in many parts of Australia are unpredictable. For example, for much of the 2010s, many parts of south-eastern Australia, including Victoria, experienced ongoing drought. This reduced the availability of water for agriculture and livestock, which affected the livelihoods of many people living outside major cities. Mental health disorders increased during this time, as did rates of self-harm.

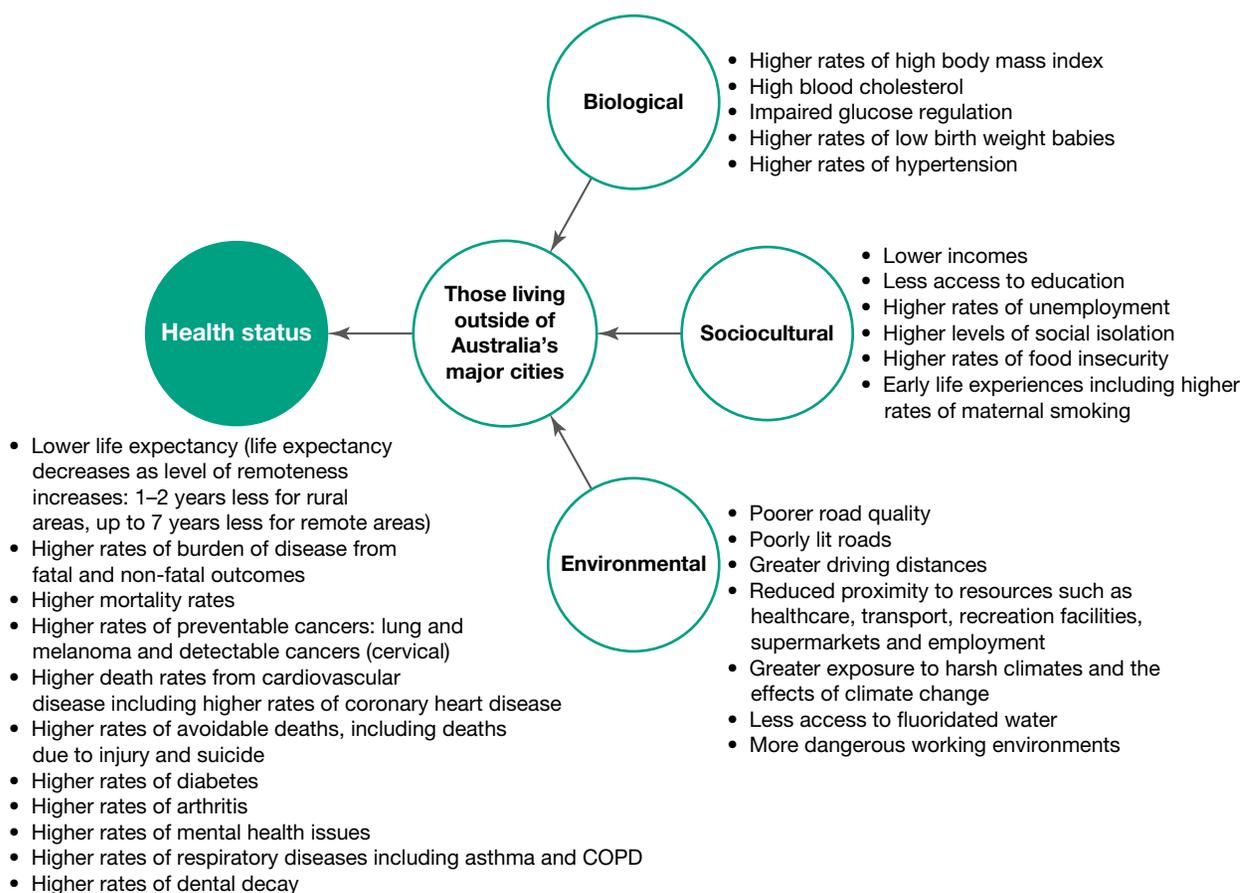
Work environments

Common occupations for those living outside major cities include farming, mining and fishing. All of these industries have certain risks (including a higher risk of injuries) associated with the physical environments in which they occur. According to the AIHW (2005), an undersupply of work may mean that workers accept working conditions that are more hazardous. Many jobs in rural and remote areas are based outdoors, which can increase UV exposure and the incidence of skin cancer.

Summary of factors contributing to variations in health status for those living within and outside of Australia's major cities

FIGURE 4.56 summarises the factors affecting the health status of those living within and outside of Australia's major cities.

FIGURE 4.56 Factors contributing to variations in health status for those living within and outside of Australia's major cities



4.8 Activities

1. Access the **Losing the farm** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **Geography and health status** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital documents** Losing the farm worksheet (doc-32196)
Geography and health status worksheet (doc-32198)
-  **Weblinks** Losing the farm
Geography and health status

4.8 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

4.8 Quick quiz

on

4.8 Exercise

4.8 Exam questions

Select your pathway

■ LEVEL 1
1, 2, 3

■ LEVEL 2
4, 6, 7, 9

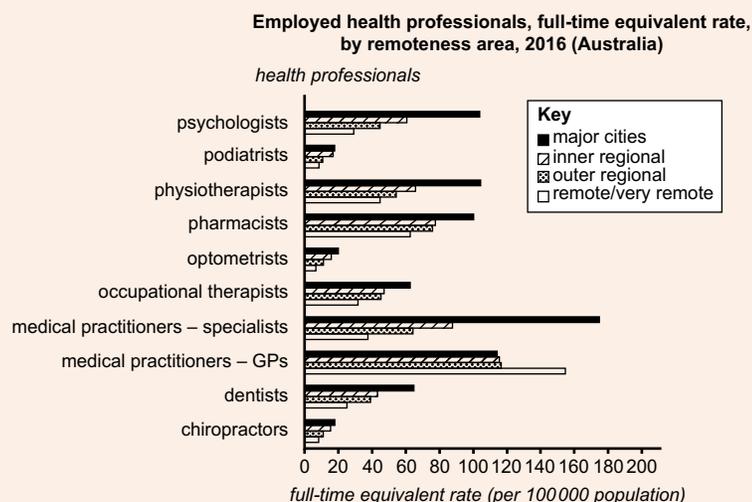
■ LEVEL 3
5, 8, 10

Test your knowledge

1. Outline the relationship between health status and remoteness.
2. Approximately what percentage of Australians live in areas that would be classified as major cities?
3. List three health status concerns of people living outside of major cities in Australia.
4. **a.** Why might some families living outside major cities in Australia rely on processed foods to feed themselves?
b. What is the disadvantage of relying on processed foods? How can they impact health status?
5. Using data, outline one trend in relation to the burden of disease and remoteness as shown in **TABLE 4.3**.

Apply your knowledge

6. **a.** What proportion of Aboriginal and Torres Strait Islander peoples live outside major cities compared to other people?
b. Explain how this difference impacts health status data for those living outside of Australia's major cities.
7. What role does the natural environment play in the health status of people living outside of major cities in Australia?
8. Would you expect the health status of those living outside of major cities in Victoria to be better than the health status of those living outside of major cities in Western Australia? Justify your response.
9. Discuss two biological, two socioeconomic and two environmental factors that may contribute to higher rates of cardiovascular disease for people living outside of major cities in Australia.
10. **a.** Referring to **TABLE 4.3**, identify a relationship between remoteness and the rate ratio of the fatal component of burden of disease.
b. Discuss three reasons that may account for the relationship identified in part **a**.

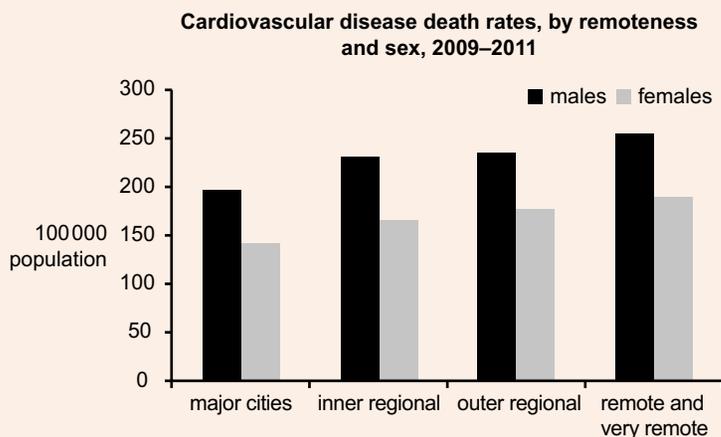
Question 1 (5 marks)Source: VCE 2019, *Health and Human Development Exam*, Q.9; © VCAA

Source: Australian Institute of Health and Welfare (AIHW), *Australia's Health 2018*, 'Australia's Health' series no. 16, AUS 221, AIHW, Canberra, 2018, p. 266; National Health Workforce Data Set, Table S5.2.7

- a. Using the information in the graph, **outline** how the availability of health professionals varies according to remoteness. **2 marks**
- b. Answer the following.
- i. **Provide one example** of a difference in health status between people living in major cities and those living in remote/very remote areas. **1 mark**
- ii. **Explain** how access to health professionals could contribute to the difference in health status provided in part b.i. **2 marks**

Question 2 (5 marks)Source: VCE 2016, *Health and Human Development Exam*, Q.8; © VCAA

- a. **Identify** one trend in the graph above. **1 mark**
- b. **Identify** one biological and one social determinant of health and **explain** how each could contribute to the trend identified in part a. **4 marks**



Source: Australian Institute of Health and Welfare, *Cardiovascular Disease, Diabetes and Chronic Kidney Disease – Australian Facts: Mortality*, 'Cardiovascular, Diabetes and Chronic Kidney Disease' series no. 1, cat. no. CDK 1, AIHW, Canberra, 2014

Question 3 (2 marks)

Source: VCE 2013, *Health and Human Development, Section A, Q.2.b*; © VCAA

Select one example of a sociocultural factor and **explain** how it might contribute to variations in health status between those living in rural and remote areas and those living in major cities.

Question 4 (1 mark)

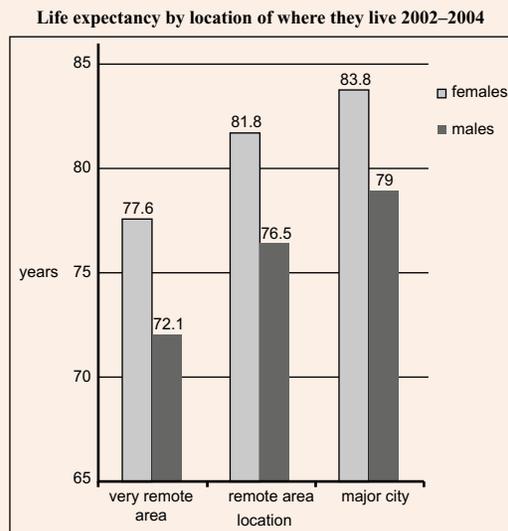
Source: VCE 2013, *Health and Human Development, Section A, Q.2.a (adapted)*; © VCAA

Give one example of a sociocultural factor that could contribute to poorer health status for those living in rural and remote areas.

Question 5 (2 marks)

Source: VCE 2008, *Health and Human Development Exam, Q.5.b*; © VCAA

The following graph compares the life expectancy of males and females according to the remoteness of where they live.



Source: Adapted from the Australian Institute of Health and Welfare, *Rural, regional and remote health 2008*, p. 52

Use the information in the graph above to **compare** the life expectancy of males and females according to where they live.

More exam questions are available in your learnON title.

4.9 KEY SKILLS

4.9.1 Analyse patterns in morbidity and mortality in Australia over time

tlvd-1911

KEY SKILLS Analyse patterns in morbidity and mortality in Australia over time

Tell me

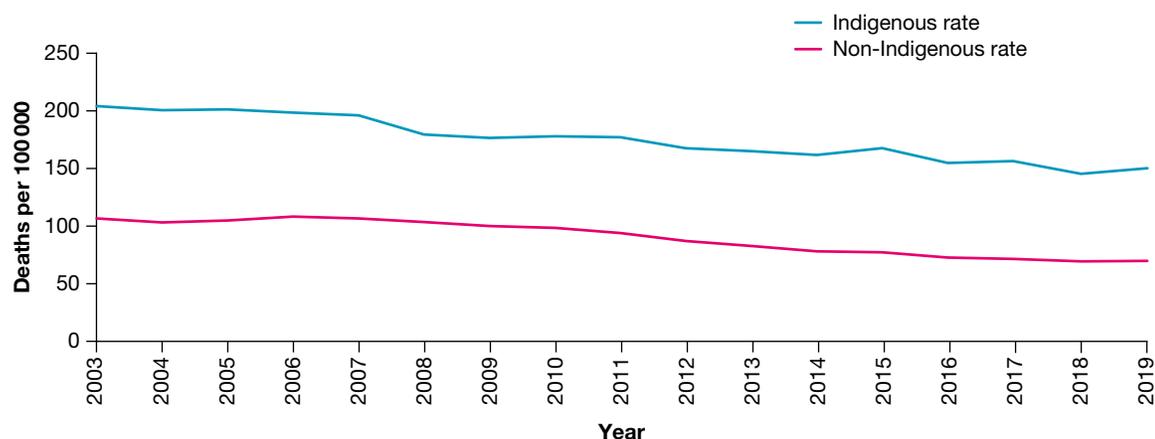
This skill requires the ability to analyse patterns in both morbidity and mortality over time. Analysis is a skill that requires careful examination of patterns presented in data. Often, data are provided to assist in demonstrating this skill. Possible reasons to explain patterns may also be required.

Relevant WHO prerequisites (explored in topic 1) and factors explored in topics 2 and 3 can be used to explain patterns in morbidity and mortality over time.

Show me

The following example identifies patterns in the under-five mortality rate for Indigenous and other children over time (see **FIGURE 4.57**).

FIGURE 4.57 Child mortality rates for children aged under five, by Indigenous status, 2003–19



Source: http://stat.data.abs.gov.au/Index.aspx?DatasetCode=DEATHS_INDIGENOUS#

The rate for Indigenous children fluctuated over time, but decreased overall from around 205 per 100 000 people in 2003 to around 150 per 100 000 in 2019. For other children, the rate remained more stable and decreased gradually from around 105 per 100 000 in 2003 to around 70 per 100 000 in 2019.¹

¹ The data are analysed and the pattern in the under-five mortality rate over time is described with the use of data.

Tell me

Once the patterns in mortality are discussed, an explanation of possible reasons for the trends may be required. Read the question carefully to ensure the reasons are appropriate to the focus of the question. In this example, the decrease in under-five mortality rates in Australia is the focus of the discussion, and reasons for the difference in under-five mortality rates between Indigenous and other Australians will not receive marks as this information is not relevant here.

Show me

If the question asks you to provide possible reasons for the patterns identified in **FIGURE 4.57**, the following would be suitable:

Education² — education relating to maternal nutrition and the importance of maternal healthcare may have improved over time. This can mean that babies are more likely to develop optimally, which decreases the under-five mortality rate.³

Access to healthcare⁴ — improvements in access to and quality of healthcare can mean that conditions may be prevented more easily, and this may have contributed to decreased under-five mortality rates in Australia over time.⁵

2 The first factor is identified.

3 The factor is used to explain the decrease in the under-five mortality rate in Australia over time.

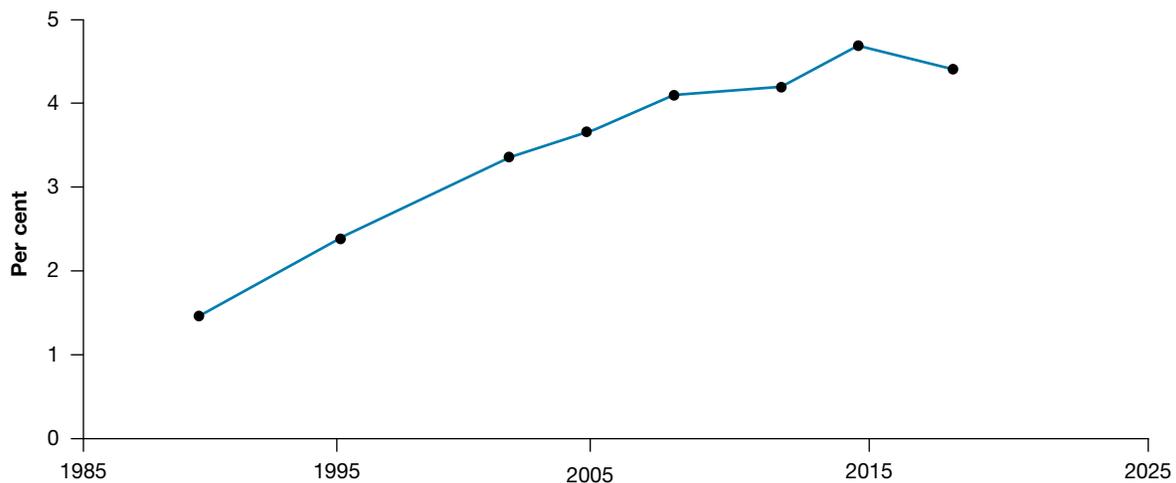
4 A second factor is identified.

5 The second factor is used to explain the decrease in the under-five mortality rate in Australia over time.

Practise the key skill

1. Describe the change in the prevalence of diabetes as shown in **FIGURE 4.58**.
2. Identify two factors and explain how each may have contributed to the overall change in the prevalence of diabetes between 1990 and 2018 as shown in **FIGURE 4.58**.

FIGURE 4.58 Prevalence of diabetes over time



Source: AIHW, *Diabetes indicators, Australia*.

4.9.2 Analyse health information to explain factors that contribute to variations in health status between population groups



tvd-1912

KEY SKILL Analyse health information to explain factors that contribute to variations in health status between population groups

Tell me

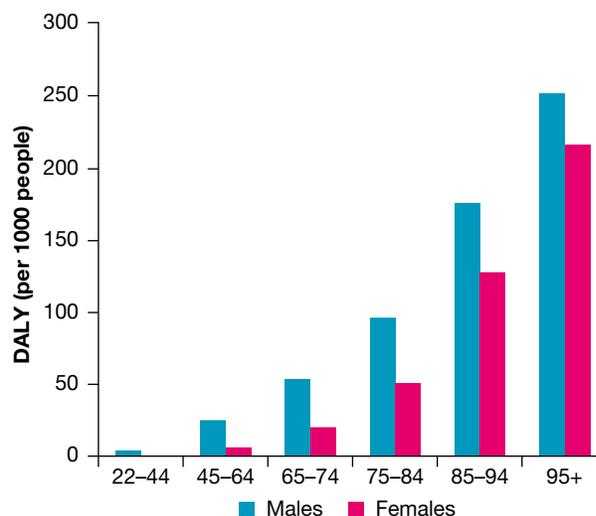
Analysing health information and having knowledge about the factors that contribute to the variations in health status is important so that interventions can be put in place to promote health status for all.

Analysing health information is the first step in this skill — such analysis is required to identify differences in health status and/or risk factors that exist between population groups. In addition to differences in health status and/or risk factors, health information may relate to differences between two groups over time. Information can be presented in many different forms including written text, graphs, tables and charts. Practising identifying trends, similarities and differences in health status and/or risk factors is important to develop this skill.

The possible impacts of a range of factors on health status must be understood so reasons for differences in health status can be explained. Once these are known, it is possible to identify and explain the factors that may contribute to specific differences in health status between groups.

For example, if information relating to rates of heart attacks for males and females were provided (see **FIGURE 4.59**), the factors that may have led to the differences between males and females could be discussed.

FIGURE 4.59 Rate of DALY (per 1000 people) due to heart attacks among people aged 22 and over, 2015



Source: <https://www.aihw.gov.au/reports/australias-health/coronary-heart-disease>

Show me

Males had higher rates of DALY as a result of heart attacks than females for each age group.⁶ For example, the rate of DALY for males in the 45–64 age group was around 25 per 1000 population compared to around 5–10 per 1000 for females. In the 75–84 age group, the rate for males was around 95 per 1000 compared to around 50 per 1000 for females in the same age group.⁷

⁶ An overall statement relating to the difference in rates of heart attack between males and females is made.

⁷ Data is used to support the initial statement.

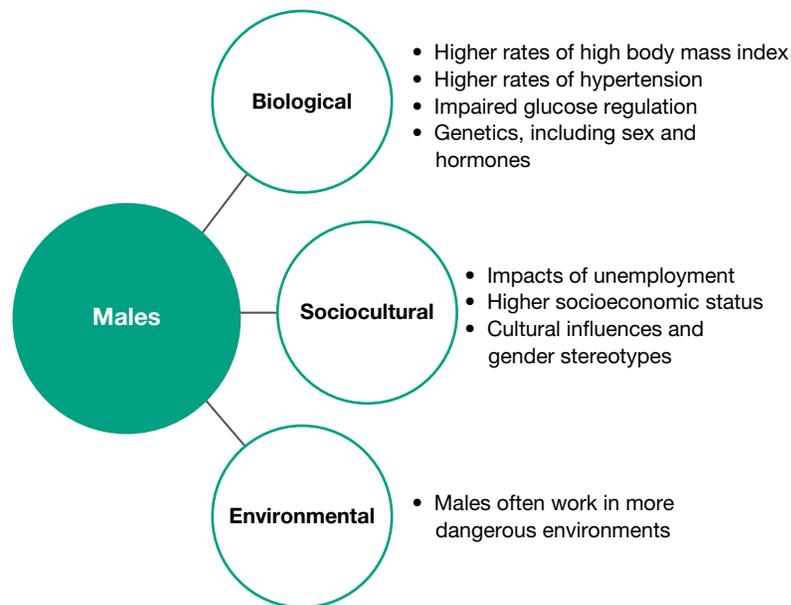
Tell me

The next step is to brainstorm factors that contribute to differences in health status between males and females (see **FIGURE 4.60**).

Once a list of options has been created, the ones that contribute to differences in the rates of heart attack can be used as the basis for discussion. Choose factors that are easy to discuss in terms of their relationship to heart attack.

The next step in this process is to re-read the question. Can any factors be used for the discussion, or does the question specify that particular factors (i.e. biological, sociocultural or environmental) have to be used? In this case, biological and sociocultural factors must be used in the discussion. If no types of factors are specified, it is recommended to include a mix of biological, sociocultural and/or environmental factors to demonstrate a greater level of understanding.

FIGURE 4.60 Factors contributing to differences in health status between males and females



Show me

The conclusion can be drawn that there are numerous factors that could contribute to the differences in heart attack rates as experienced by males compared to females:

- **Biological**⁸ — males are more likely to store fat around the abdomen compared to females. Fat stored around the abdomen increases the risk of heart attack and may contribute to the difference in the rate of heart attacks experienced between males and females.⁹
- **Sociocultural**⁸ — gender stereotypes and peer pressure play a role in health outcomes for males compared to females. Males are often portrayed as having to be strong, and this contributes to males being less likely to access healthcare. As a result, risk factors for heart attack such as hypertension may go untreated, and this can increase the rate of heart attacks for males compared to females.¹⁰

⁸ The appropriate category of factor is identified.

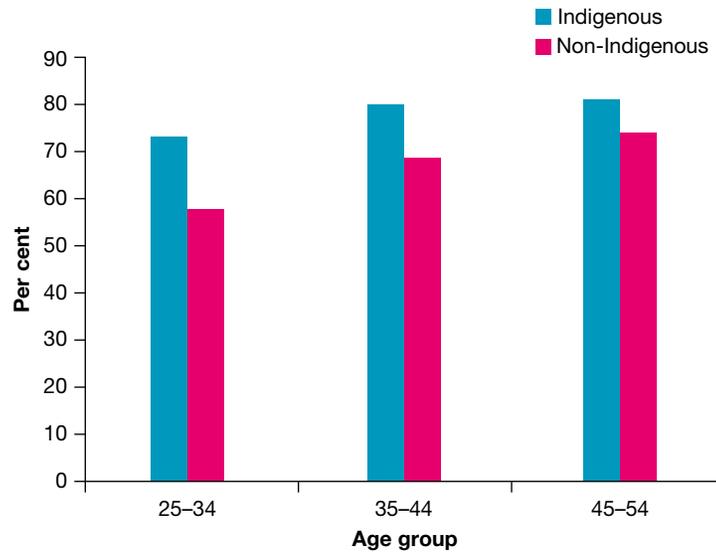
⁹ A specific biological factor is identified and linked to the difference in heart attack rates between males and females.

¹⁰ A sociocultural factor is identified and linked to the difference in rates of heart attack between males and females.

Practise the key skill

3. Identify two trends within the overweight/obesity rates shown in **FIGURE 4.61**.
4. Using two biological, sociocultural and/or environmental factors as a basis of your discussion, discuss possible reasons for the difference in rates of overweight/obesity between Indigenous and non-Indigenous Australians.

FIGURE 4.61 Proportion of overweight/obese Australians aged 25–54, by Indigenous status and age group, 2018



Source: Adapted from ABS, *National Health Survey 2017–18* and *National Aboriginal and Torres Strait Islander Health Survey 2018–19*.

4.10 Review

4.10.1 Topic summary

4.2 Biological factors contributing to variations in health status

- There are three categories of factors that influence health status: biological, sociocultural and environmental. These factors influence overall health and wellbeing and lead to variations in health status between individuals and population groups.
- Factors affecting health are interrelated and can affect each other. For example, lack of education (sociocultural) can contribute to obesity (biological) by not having the knowledge and skills to consume healthy foods.
- Biological factors include factors that usually have both genetic and lifestyle causes. Examples include body weight, blood pressure, blood cholesterol, glucose regulation, birth weight, sex and hormones.
- High body mass index is a risk factor for a range of conditions including high blood pressure, high blood cholesterol, impaired glucose regulation, cardiovascular disease, some cancers, respiratory problems, type 2 diabetes, arthritis and mental health problems.
- High blood pressure is one of the leading contributors to the overall burden of disease in Australia.
- Excessive cholesterol production can be caused by genetics and poor diet, and elevated cholesterol levels are associated with a range of cardiovascular conditions.
- Impaired glucose regulation is becoming more common in Australia and can be thought of as a precursor to type 2 diabetes.
- Babies born with a low birth weight (less than 2.5 kilograms) are more likely to have an underdeveloped immune system, making them more susceptible to infections. Low birth weight also increases the risk of some conditions later in life including hypertension, type 2 diabetes and cardiovascular disease.
- Genetic factors such as sex and hormones play a role in putting people at greater risk of, or protecting them from, ill health.

4.3 Sociocultural factors contributing to variations in health status

- Sociocultural factors include socioeconomic status (SES), unemployment, social exclusion, social isolation, cultural norms, food security, early life experiences, and access to culturally appropriate, affordable healthcare.
- Socioeconomic status (SES) refers to a person's income, occupation and education in relation to others in their society. People with low socioeconomic status (SES) generally have poorer health status.
- Unemployment can lead to stress and financial hardship. People without secure employment are at higher risk of a range of health issues.
- Social exclusion occurs when a person cannot or does not participate adequately in the society in which they live. Social exclusion often forms part of a vicious cycle with other health issues such as mental illness.
- Social isolation occurs when individuals are not in regular contact with others. Social isolation increases the risk of mental health issues and psychological distress.
- Cultural norms include customs, ideas, values and traditions of particular social groups. Examples include factors relating to gender stereotypes, dietary choices, attitudes towards employment, education and healthcare, all of which impact health status.
- Food availability and affordability (called food security) has a relationship with health status. Those who cannot afford or access healthy foods are at higher risk of chronic conditions.
- Early life experiences impact health status in both the short and long term. Maternal tobacco, alcohol and drug use, and maternal nutrition and exposure to certain chemicals, bacteria and viruses during pregnancy can contribute to a range of health issues in the individual after birth and into adulthood.
- Being able to access affordable and culturally appropriate healthcare is an important part of promoting health status. Many conditions can be avoided or treated effectively with regular check-ups and early diagnosis.

4.4 Environmental factors contributing to variations in health status

- Environmental factors relate to the physical environment and include housing, work environment, urban design and infrastructure, climate and climate change.
- The housing environment can promote or detract from health and wellbeing. Poor quality housing is associated with higher rates of injury, mental health problems and infectious diseases.
- Many Australians are employed and spend significant periods of time in their work environment. All working environments have associated risks. Factors such as UV exposure, accidents and injuries, and exposure to hazardous substances can all impact on health status.
- Urban design and infrastructure relate to the features and structures in the areas in which people live. They include aspects such as geographical location of resources (including healthcare), and the quality of infrastructure relating to roads and transport systems, electricity and communications systems, water and sanitation.
- Australia's varying climates affect health status. Aspects such as extreme temperatures, rainfall patterns, and natural disasters such as bushfires, floods, droughts and high winds all affect Australian communities.
- Like all countries, Australia is experiencing a change in climate. The resulting greater extremes in climate and increased frequency of natural disasters can affect health status in numerous ways.

4.5 Differences between Indigenous and non-Indigenous population groups

- Even though health status is generally good in Australia, there are certain population groups who do not share the same level of health as the rest of the population.
- Indigenous Australians, males, people from lower socioeconomic status groups and those living outside of Australia's major cities suffer worse health status in relation to almost all health indicators.
- Indigenous Australians have higher death rates at every age compared with other people.
- The life expectancy of Indigenous Australians is about ten years less than that of the non-Indigenous population.
- Indigenous Australians suffer from cardiovascular disease, cancer, type 2 diabetes, kidney disease and asthma at significantly higher rates than the rest of the population.
- The factors that contribute to the lower health status of Indigenous Australians are complex, but include higher rates of low birth weight babies, overweight/obesity, poor housing conditions, low socioeconomic status and social exclusion.

4.6 Differences between male and female population groups

- Males are more likely to die at every stage of the lifespan when compared with females.
- Males experience higher mortality rates due to cardiovascular disease, cancer, injuries and diabetes.
- Males experience lower rates of osteoporosis, arthritis and mental health disorders.
- The factors that contribute to the poor health status of males include overweight, hypertension, impaired glucose regulation, genetics, cultural stereotypes, peer pressure and work environments.

4.7 Differences between high and low socioeconomic status population groups

- Generally, the higher the socioeconomic status, the better the health status.
- People with low socioeconomic status have lower life expectancy and higher mortality rates than those with a higher socioeconomic status.
- People with low socioeconomic status also experience higher rates of many conditions such as cardiovascular disease, cancer and diabetes.
- Some of the factors contributing to the lower health status of those with low socioeconomic status include obesity, a higher rate of low birth weight babies, lower levels of education, poorer housing including greater exposure to environmental tobacco smoke, and less access to and use of healthcare services.

4.8 Differences between those living within and outside of Australia's major cities

- People living outside of major cities experience higher mortality rates and higher rates of conditions such as cancers, cardiovascular disease and diabetes.
- People living outside of major cities face a number of challenges to their health and wellbeing such as the natural environment, the nature of work in these areas and geographical barriers.

- Other factors contributing to the lower health status experienced by people living outside of major cities include higher levels of obesity, dangerous occupations, social isolation, food insecurity and lack of access to healthcare services.
- People living outside of major cities consist of relatively high numbers of Indigenous Australians, and people from low socioeconomic status groups, which contributes to the poorer health status of people in rural and remote areas.

Resources

 **Digital document** Summary (doc-36139)

4.10.2 Key terms

Biological factors factors relating to the body that impact on health and wellbeing, such as genetics, body weight, blood pressure, cholesterol levels, birth weight

Environmental factors the physical surroundings in which we live, work and play. Environmental factors include workplaces, housing, roads and geographical access to resources such as healthcare.

Fertilisation the fusing of a sperm and egg cell. Marks the beginning of pregnancy. Also known as conception.

Foetal alcohol spectrum disorder a group of conditions that can occur in a person whose mother drank alcohol during pregnancy. Problems that may occur in babies exposed to alcohol before birth include low birth weight, distinctive facial features, heart defects, behavioural problems and intellectual disability.

Food insecurity when healthy, affordable food is not obtainable

Food security ‘the state in which all persons obtain nutritionally adequate, culturally appropriate, safe food regularly through local non-emergency sources’ (VicHealth, 2008)

Genetic predisposition an increased likelihood of developing a particular disease based on a person’s genetic makeup (often indicated by a person’s family history of disease)

Health literacy the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions

Indigenous Australians Australians of Aboriginal or Torres Strait Islander origin

Infrastructure the physical and organisational structures, facilities and systems (e.g. buildings, roads, power supplies) needed for the operation of a society

Low birth weight weighing less than 2500 grams (2.5 kilograms) at birth

Menopause when the menstrual cycle stops permanently, ending the ability of a female to reproduce

Sanitation the process of eliminating contact between humans and hazardous wastes, including human and animal faeces and urine, solid wastes, domestic wastewater (sewage and grey water), industrial wastes and agricultural wastes

Social exclusion the segregation that people experience if they are not adequately participating in the society in which they live

Social isolation refers to individuals who are not in regular contact with others

Sociocultural factors the social and cultural conditions into which people are born, grow, live, work and age. These conditions include socioeconomic status, social connections, family and cultural norms, food security, early life experiences, and access to affordable, culturally appropriate healthcare.

Socioeconomic status the social standing of an individual in comparison to others in that society. It is based on education, income and occupation.

Syndrome X (also called metabolic syndrome) when a person exhibits a range of factors that increase their risk of cardiovascular disease and type 2 diabetes. Examples of the factors include abdominal obesity, high cholesterol and insulin resistance.

4.10.3 Extended response: build your exam skills

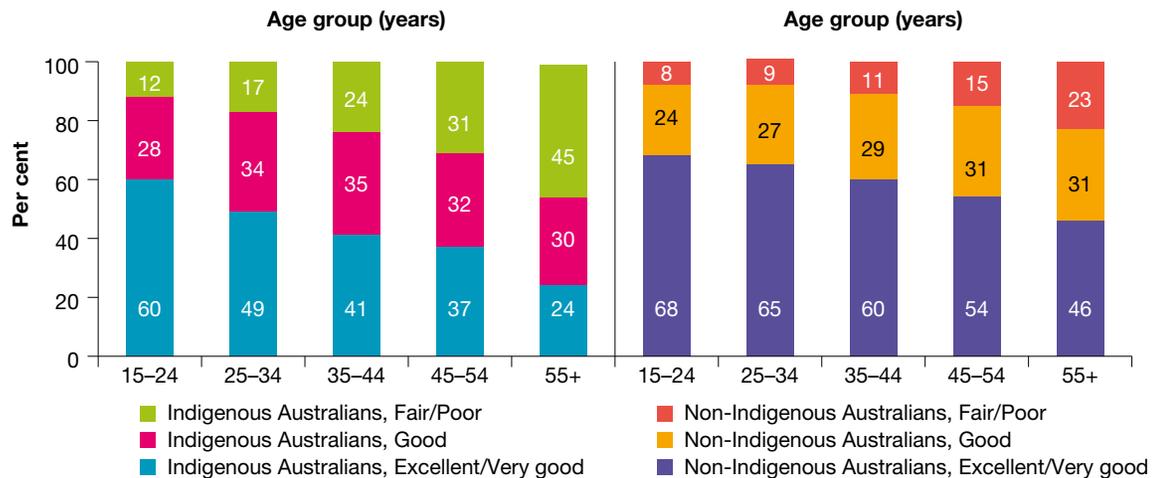
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1444

Interpreting stimulus material

An important skill in answering extended response questions is being able to interpret the information. That is, you will need to make judgements as to what the stimulus material is actually telling or showing you. In this section, a number of stimuli will be interpreted and basic links established between them.

The first step in interpreting the material provided is to explore each piece independently to determine the information it presents. This is done below with a series of dot points for each source.

Source 1



Step 1: Explore Source 1

- People are asked to assess their own level of health, which can move beyond the physical dimension by taking other dimensions into account.
- This graph shows data relating to self-assessed health status. This is a subjective concept that can mean different things to different people.
- Indigenous Australians are less likely to assess their health as excellent or very good compared to non-Indigenous Australians for each age group shown. For those aged 15–24, the rate of Indigenous Australians assessing their health as excellent or very good is 60 per cent compared to 68 per cent in for non-Indigenous Australians.
- The rate of those assessing their health as excellent or very good decreases for both Indigenous and non-Indigenous Australians for each age group. Twenty-four per cent of Indigenous people aged 55+ assess their health as excellent or very good compared to 46 per cent in the non-Indigenous group.
- The proportion of those assessing their health as excellent or very good decreases at a greater rate for Indigenous Australians compared to non-Indigenous Australians.
- The rate of people assessing their health as fair or poor is higher among the Indigenous group compared to the non-Indigenous group for each age group shown. For example, in the 35–44 age group, 24 per cent of Indigenous people assessed their health as fair or poor compared to 11 per cent for non-Indigenous people.
- The rate of people assessing their health as fair or poor increases as age groups increase. For Indigenous Australians it increases from 12 per cent in the 15–24 age group to 45 per cent in the 55+ age group. For non-Indigenous Australians, the rate increases from 8 per cent in the 15–24 age group to 23 per cent.

Source 2

Jarli is a 68-year-old Indigenous woman who lives in a remote community in Western Australia. During a recent check-up from a visiting health worker, she was told that her body mass index places her in the obese range and that she has high blood pressure and impaired glucose regulation. Since the visit from the health

worker, Jarli has had to travel nearly three hours each way from her home to access the culturally appropriate services she needs to address her health issues. As a result, she has not been able to spend as much time with her family members as she normally would. This has contributed to Jarli feeling stressed and anxious.

Step 2: Explore Source 2

From this information, it can be determined that Jarli:

- is female
- is Indigenous
- is living in a remote part of Australia
- is obese (i.e. a BMI of 30 or more).
- has high blood pressure
- has impaired glucose regulation
- is travelling three hours each way to access culturally appropriate health services.

This information can be unpacked further to explore possible impacts of Jarli's situation:

- Being obese increases the risk of high blood pressure and impaired glucose regulation and Jarli is experiencing all of these issues.
- High blood pressure increases the risk of cardiovascular and kidney disease.
- Impaired glucose regulation is seen as a pre-cursor to type 2 diabetes.
- Living in a remote area makes accessing health services more difficult.
- Jarli is accessing services that are culturally appropriate.
- Jarli's social health and wellbeing has been impacted by spending more time away from her family and friends.
- Her mental health and wellbeing has been impacted by experiencing increased rates of stress and anxiety.

Source 3

TABLE 4.4 Estimated resident population, but Indigenous status and remoteness, 2016

	Indigenous	Non-Indigenous
Major cities	37.4	72.7
Inner regional	23.7	17.8
Outer regional	20.3	8
Remote	6.7	1
Very remote	11.9	0.5

Source: ABS 2018, Estimates of Aboriginal and Torres Strait Islander Australians

Step 3: Explore Source 3

- This table shows the proportion of each population group living in major cities, inner regional, outer regional, remote and very remote areas. The table does not show how many people are living in each area, so the term 'proportion' or 'per cent' should be used.
- A significantly higher proportion of Indigenous Australians live in remote and very remote areas compared to non-Indigenous Australians (around 17.6 per cent compared to 1.5 per cent).
- A significantly higher proportion of non-Indigenous Australians (72.7 per cent) live in major cities compared to Indigenous Australians (37.4 per cent).

Step 4: Linking information between sources

Once each source has been explored, basic links between the information can be established. For example:

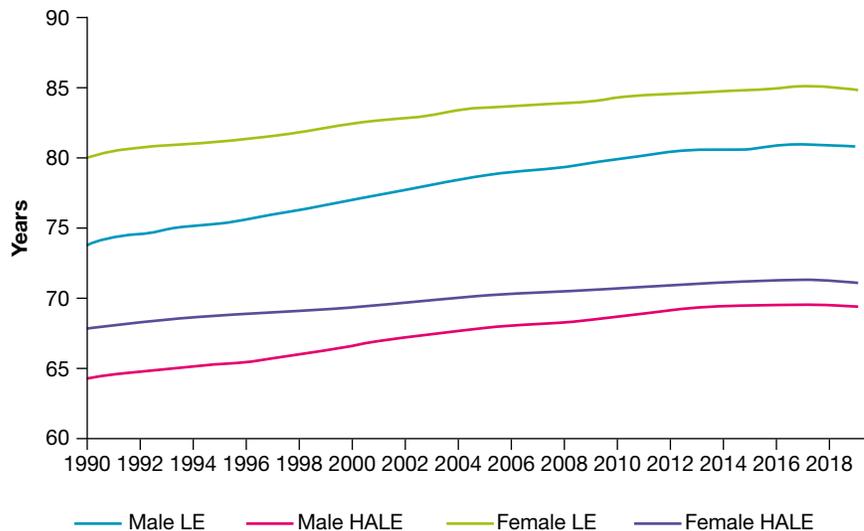
- *Indigenous Australians are more likely to live in remote and very remote areas compared to non-Indigenous Australians. Living in remote areas can make accessing health services more difficult, which can mean that people with health conditions (like Jarli) may find it a challenge to seek the assistance they require. This could contribute to a higher proportion of Indigenous people assessing their health as fair or poor compared to non-Indigenous Australians.*
- *People like Jarli spend extended periods of time accessing health services. This can impact other aspects of life such as social interactions, which can decrease the proportion of people assessing their health as excellent or very good.*
- *Indigenous Australians may find it more difficult to access culturally appropriate health services compared to non-Indigenous Australians. This can mean that travel time is longer, or conditions go untreated, which can contribute to differences in self-assessed health status between Indigenous and non-Indigenous Australians.*

Practise this skill

Follows step 1–4 above to first explore each piece independently to determine the information it presents and then make links between the three sources.

The following graph shows life expectancy (LE) and health-adjusted life expectancy (HALE) for males and females in Australia from 1990 to 2019.

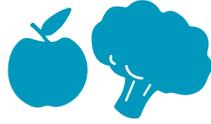
Source 1



Source: Adapted from IHME, 2021

Source 2

Fruit and vegetable intake



In 2017–18, fewer than **1 in 30 men** and **1 in 15 women** ate enough fruit and vegetables (3.0 per cent of men and 7.7 per cent of women)

Sugar sweetened drinks



In 2017–18, men were almost **twice as likely** as women to drink sugar sweetened drinks daily (12 per cent of males and 6.4 per cent of females were daily consumers)

Tobacco smoking and alcohol Daily smoking



In 2017–18, men were **1.5 times** as likely to smoke daily as women (16.5 per cent of men and 11.1 per cent of women)

Alcohol



In 2017–18, **1 in 4 men** and **1 in 11 women** were consuming alcohol at levels placing them at lifetime risk of an alcohol-related disease or injury (24 per cent of men and 8.8 per cent of women)

Overweight and obesity



In 2017–18, **7 in 10 men** and **6 in 10 women** were overweight or obese (75 per cent of men and 60 per cent of women)

Source: AIHW 2019, *The health of Australia's males*

Source 3

Brett is 19-years-old and works as an apprentice electrician in a coal mine in Queensland. He grew up in Melbourne and moved away from home to start his apprenticeship. Brett has made some new friends among his work mates and spends time with them at the local pub where he drinks moderate to high amounts of alcohol. Brett does not have adequate cooking skills so he relies on foods that are readily available such as take-away and processed foods. This has contributed to an increase in Brett's body mass over time.

4.10 Exercises

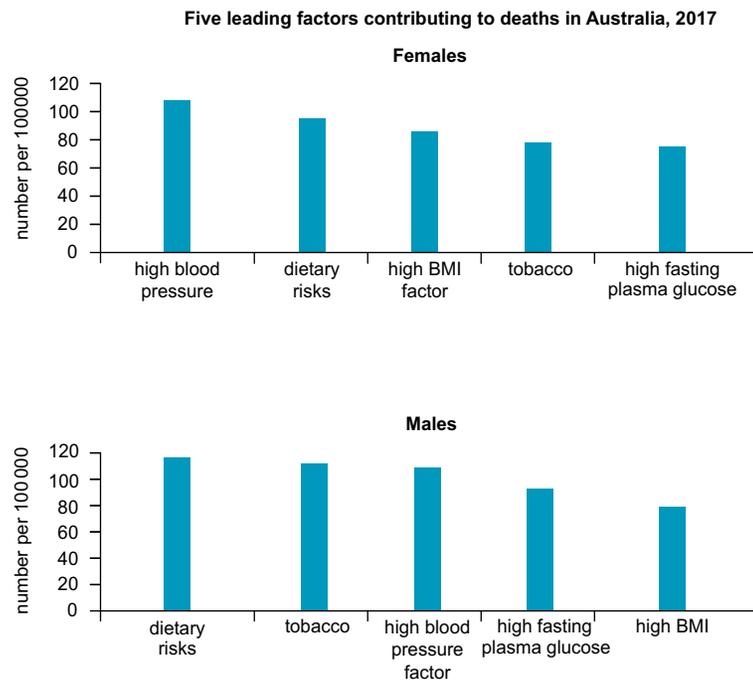
To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

4.10 Exam questions

4.10 Exam questions

Question 1 (9 marks)

Source: VCE 2020, Health and Human Development Exam, Q.3; © VCAA



- a. From the graphs above, **select** one example that represents a biological factor. **1 mark**
- b. **List** two variations in health status that exist between males and females in Australia. **Explain** how the differences in factors that are evident in the graphs could contribute to these variations. **4 marks**

High body mass index (BMI) and dietary risks are both major contributing factors in the deaths of males and females in Australia.

- c. **Describe** two ways in which the *Australian Dietary Guidelines* could be used to bring about dietary change and decrease death rates. **4 marks**

Question 2 (6 marks)

Source: VCE 2011, Health and Human Development Exam, Section B, Q.1 (adapted); © VCAA

Indigenous males and females in Australia have significantly poorer health than their non-Indigenous counterparts.

For example:

- the estimated life expectancy for Indigenous males is approximately 12 years less than that of non-Indigenous males
- the estimated life expectancy for Indigenous females is approximately 10 years less than that of non-Indigenous females
- the Indigenous rates for diabetes mellitus are six times higher than non-Indigenous Australians

- the Indigenous rates of hospitalisations and mortality are around twice the rate of non-Indigenous Australians
- per person expenditure on health for Indigenous Australians was almost \$6000 per person in 2006–2007, while for non-Indigenous Australians the spending was approximately \$4500 per person

Source: *Australia's health 2010*

- Explain** how one sociocultural factor may impact on the variations in health status between Indigenous and non-Indigenous Australians. **2 marks**
- Use two other examples of determinants of health to **explain** why Indigenous Australians have significantly poorer health status than non-Indigenous Australians. **4 marks**

Question 3 (3 marks)

Source: *VCE 2008, Health and Human Development Exam, Q.5.c.i;* © VCAA

Table 2 shows the difference in the prevalence of self-reported conditions in metropolitan areas compared to inner regional and outer regional and remote areas.

TABLE 2 The prevalence of self-reported conditions 2004–05 for inner regional and outer regional and remote compared with metropolitan areas

	Inner regional – Increase in % compared with the metropolitan area	Outer regional and remote – Increase in % compared with the metropolitan area
Diabetes	3%	4%
Asthma	22%	8%
Arthritis	24%	23%
Injuries	20%	21%
Depression	15%	4%
Overweight/obesity	5%	12%

Source: Adapted from Australian Institute of Health and Welfare, *Rural, regional and remote health 2008*

Compare the self-reported health status of those living in metropolitan areas with those living in inner regional and outer regional and remote areas for asthma, injuries and overweight/obesity.

Question 4 (4 marks)

Those from low socioeconomic groups experience a significantly higher U5MR than those in high socioeconomic groups.

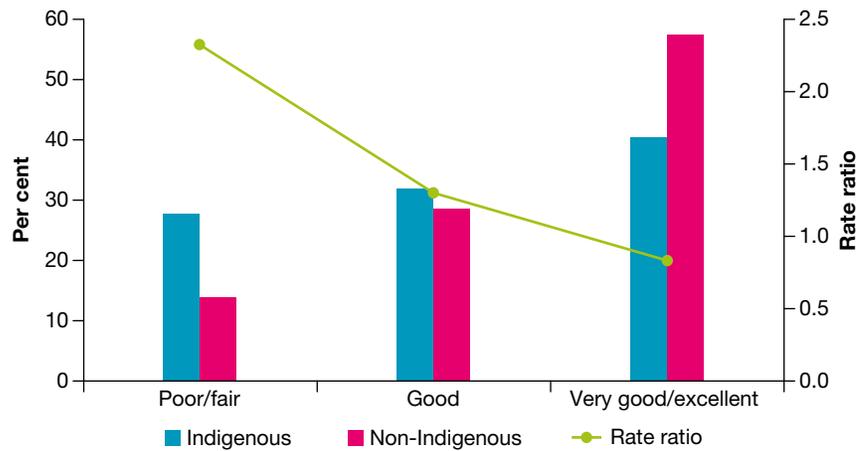
Identify two factors and explain how each contributes to a higher U5MR among low socioeconomic groups when compared to high socioeconomic groups.

Question 5 (5 marks)

Refer to **FIGURE 4.62**.

- Outline** the difference in the proportion of Indigenous and non-Indigenous Australians who assess their health status as fair or poor. **1 mark**
- Identify** two factors and **explain** how each contributes to the difference outlined in part a. **4 marks**

FIGURE 4.62 Self-assessed health status among people aged 15 and over, by Indigenous status, 2018–19



Source: <https://www.indigenoushpf.gov.au/measures/1-17-perceived-health-status/data#DataVisualisation>

on Resources

-  **Digital document** Key terms glossary (doc-36126)
-  **Exam question booklet** Topic 4 Exam question booklet (eqb-0047)
-  **Interactivities**
 - Crossword (int-6885)
 - Definitions (int-6886)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 4 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 4.1 Key terms glossary (doc-35917)
- 4.2 Blood pressure animation worksheet (doc-32192)
 - Hypertension worksheet (doc-32193)
 - Glucose regulation worksheet (doc-32194)
- 4.3 Social justice worksheet (doc-32195)
- 4.4 Climate change worksheet (doc-32199)
- 4.5 Discrimination worksheet (doc-32197)
- 4.8 Losing the farm worksheet (doc-32196)
 - Geography and health status worksheet (doc-32198)
- 4.10 Summary (doc-36139)
 - Key terms glossary (doc-36126)

Exam question booklets

- 4.1 Topic 4 Exam question booklet (eqb-0047)
- 4.10 Topic 4 Exam question booklet (eqb-0047)

Weblinks

- 4.2 Blood pressure animation
 - Hypertension
 - Glucose regulation
- 4.3 Social justice
- 4.4 Climate change
- 4.5 Discrimination
- 4.8 Losing the farm
 - Geography and health status

Teacher-led videos

- 4.9 Key skill: Analyse patterns in morbidity and mortality in Australia over time (tlvd-1911)
 - Key skill: Analyse health information to explain factors that contribute to variations in health status between population groups (tlvd-1912)
- 4.10 Extended response: build your exam skills (tlvd-1444)

Interactivities

- 4.3 Some health problems associated with unemployment, compared with employment (int-8510)
- 4.5 Life expectancy at birth, by Indigenous status and sex, 2017 (int-8511)
 - Age-specific self-assessed health status among people aged 15 and over, by Indigenous status, 2018–19 (int-8512)
- 4.7 DALY (rate per 1000 people) caused by high blood pressure and impaired glucose regulation, according to socioeconomic status group, 2015 (int-8513)
 - Prevalence of smoking, lack of physical activity, inadequate fruit consumption and daily consumption of sugar sweetened drinks by socioeconomic status groups, 2017–18 (int-8514)
 - Prevalence of health-related factors by employment status, people aged 15 and over, 2017–18 (int-8515)
- 4.8 Age-standardised DALY rate (per 1000 people) for selected conditions, by remoteness, 2015 (int-8516)
- 4.10 Crossword (int-6885)
 - Definitions (int-6886)

To access these online resources, log on to www.jacplus.com.au.

School-Assessed Coursework Unit 3

AREA OF STUDY 1: UNDERSTANDING HEALTH AND WELLBEING

Outcome 1

Explain the complex, dynamic and global nature of health and wellbeing, interpret and apply Australia's health status data and analyse variations in health status.

School-Assessed Coursework 1 **online only**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au, or download the assessment as a Word document from your Resources tab.

on Resources

 **Digital document** School-Assessed Coursework (doc-34823)

Key knowledge

- Concepts of health and wellbeing (including physical, social, emotional, mental and spiritual dimensions) and illness, and the dynamic and subjective nature of these concepts
- Benefits of optimal health and wellbeing and its importance as a resource individually, nationally and globally
- Prerequisites for health as determined by the WHO including peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity
- Indicators used to measure and understand health status: incidence, prevalence, morbidity, burden of disease, disability-adjusted life year (DALY), life expectancy, health-adjusted life expectancy (HALE), mortality (including maternal, infant and under 5) and self-assessed health status
- Health status of Australians and the biological, sociocultural and environmental factors that contribute to variations between population groups including:
 - males and females
 - Indigenous and non-Indigenous
 - high and low socioeconomic status
 - those living within and outside of Australia's major cities
- The contribution to Australia's health status and burden of disease of smoking, alcohol, high body mass index and dietary risks (under-consumption of vegetables, fruit and dairy foods; high intake of fat, salt and sugar; low intake of fibre and iron).

Key skills

- Explain the dynamic and subjective nature of the concepts of health and wellbeing and illness
- Describe interrelationships between dimensions of health and wellbeing
- Explain the individual and collective importance of health and wellbeing as a resource
- Describe global benefits of the pursuit of optimal health and wellbeing
- Identify the WHO's prerequisites for health and explain their links to improved health outcomes
- Describe and apply indicators used to measure health status
- Use data to describe and evaluate the health status of Australians
- Analyse patterns in morbidity and mortality in Australia over time
- Analyse health information to explain factors that contribute to variations in health status between population groups

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School-Assessed Coursework Unit 3

AREA OF STUDY 1: UNDERSTANDING HEALTH AND WELLBEING

Outcome 1

Explain the complex, dynamic and global nature of health and wellbeing, interpret and apply Australia's health status data and analyse variations in health status.

Structured questions

Total marks: 50 marks

Time duration: 60 minutes

Key knowledge

- Concepts of health and wellbeing (including physical, social, emotional, mental and spiritual dimensions) and illness, and the dynamic and subjective nature of these concepts
- Benefits of optimal health and wellbeing and its importance as a resource individually, nationally and globally
- Prerequisites for health as determined by the WHO including peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity
- Indicators used to measure and understand health status: incidence, prevalence, morbidity, burden of disease, disability-adjusted life year (DALY), life expectancy, health-adjusted life expectancy (HALE), mortality (including maternal, infant and under 5) and self-assessed health status
- Health status of Australians and the biological, sociocultural and environmental factors that contribute to variations between population groups including:
 - males and females
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 - high and low socioeconomic status
 - those living within and outside of Australia's major cities
- The contribution to Australia's health status and burden of disease of smoking, alcohol, high body mass index and dietary risks (under-consumption of vegetables, fruit and dairy foods; high intake of fat, salt and sugar; low intake of fibre and iron).

Key skills

- Explain the dynamic and subjective nature of the concepts of health and wellbeing and illness
- Describe interrelationships between dimensions of health and wellbeing
- Explain the individual and collective importance of health and wellbeing as a resource
- Describe global benefits of the pursuit of optimal health and wellbeing
- Identify the WHO's prerequisites for health and explain their links to improved health outcomes
- Describe and apply indicators used to measure health status
- Use data to describe and evaluate the health status of Australians
- Analyse patterns in morbidity and mortality in Australia over time
- Analyse health information to explain factors that contribute to variations in health status between population groups

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Question 1 (5 marks)

- a. Briefly describe the meaning of health and wellbeing as a dynamic concept, using an example. **3 marks**
- b. Explain the social dimension of health and wellbeing. **2 marks**

Question 2 (8 marks)

The 1986 World Health Conference in Ottawa, Canada, identified nine prerequisites that must be met for the benefits of health and wellbeing to occur.

- a. List two of the prerequisites for health and wellbeing. **2 marks**
- b. Select a different prerequisite from those answered in part a and explain why it is considered a prerequisite for health and how it could contribute to improved health and wellbeing for individuals. **4 marks**
- c. Explain how this improvement in health and wellbeing may act as a resource individually. **2 marks**

Question 3 (13 marks)

The following table shows the life expectancy and health-adjusted life expectancy of males and females in different Australian states in 2011.

SOURCE 1 Life expectancy and HALE at birth, males and females by jurisdiction, 2011

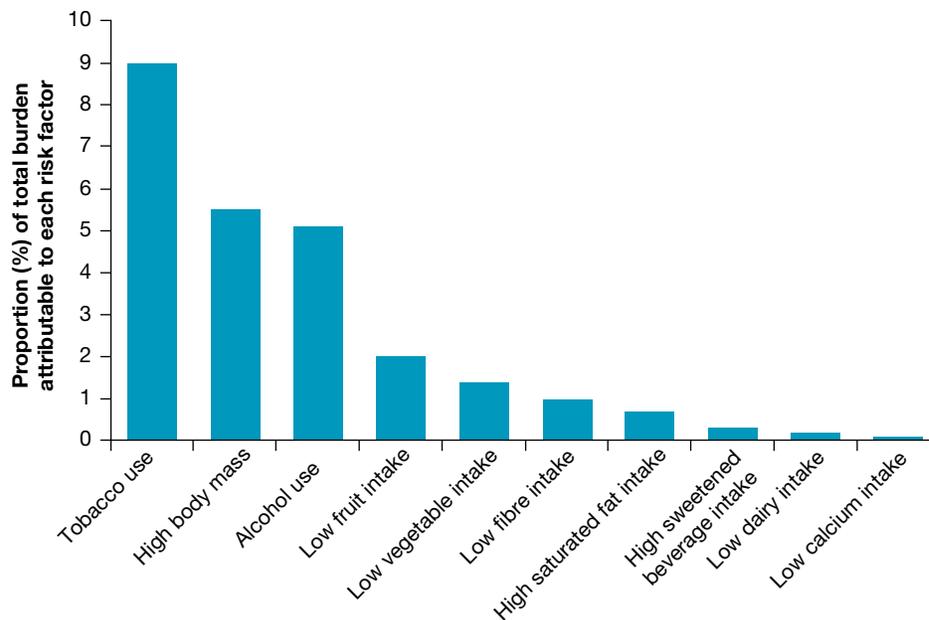
	Males		Females	
	LE (years)	HALE (years)	LE (years)	HALE (years)
New South Wales	79.9	71.1	84.2	74.5
Victoria	80.5	71.4	84.5	74.5
Queensland	79.5	70.4	84.0	74.2
Western Australia	80.1	71.3	84.8	75.0
South Australia	79.8	70.5	84.2	74.1
Tasmania	78.7	70.4	82.6	72.6
Australian Capital Territory	81.2	72.3	85.1	74.6
Northern Territory	74.7	64.9	80.0	68.4

Source: <https://www.aihw.gov.au/getmedia/1b740ed7-ed95-4ed6-a262-e624b4122940/aihw-bod-17.pdf.aspx?inline=true>, p. 6

- a. Explain the difference between life expectancy and health-adjusted life expectancy. **4 marks**
- b. Using data from the table, outline one trend between sex and HALE. **2 marks**
- c. Explain the concept of mortality. **1 mark**
- d. Identify two biological factors and explain why Indigenous Australians experience a higher mortality rate compared with non-Indigenous Australians. **4 marks**
- e. Besides mortality rates and HALE, identify two further variations in health status between Indigenous and non-Indigenous Australians. **2 marks**

Question 4 (12 marks)

SOURCE 2 Proportion (%) of total burden attributable to selected risk factors, 2011



Source: Adapted from: AIHW 2016, *Australian burden of disease study: impact and causes of illness and death in Australia 2011*, p. 57.

- Explain the concept of burden of disease. **2 marks**
- Tobacco use remains the most significant cause of illness and death in Australia.
Explain two ways in which smoking contributes to disease and to health status or burden of disease in Australia. **4 marks**
- Those in low socioeconomic status groups are more likely to smoke than those in high socioeconomic groups. Outline what is meant by socioeconomic status. **2 marks**
- Identify two sociocultural factors and, using these, explain why people in a low socioeconomic group are more likely to smoke than those in a higher socioeconomic group. **4 marks**

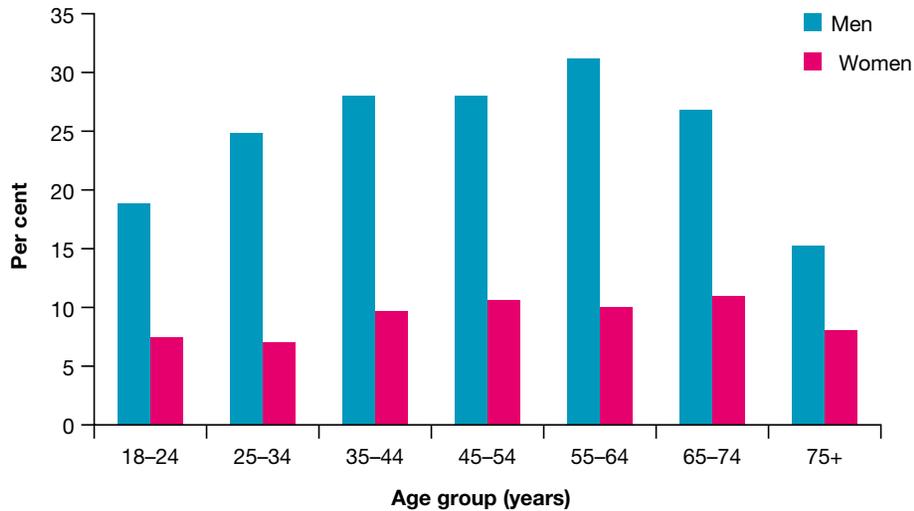
Question 5 (5 marks)

According to the AIHW, more than 2 in 5 (44 per cent) men and 7 in 10 (71 per cent) women have inadequate calcium intakes. (**Source:** <https://www.aihw.gov.au/getmedia/fc5ad42e-08f5-4f9a-9ca4-723caca510d/aihw-phe-227.pdf>. *asp?inline=true*, p.60).

- Describe the main function of calcium in the human body and name a food source rich in calcium. **3 marks**
- Apart from osteoporosis, explain how under-consumption of calcium contributes to disease in Australia and the subsequent impact on health status or burden of disease. **2 marks**

Question 6 (7 marks)

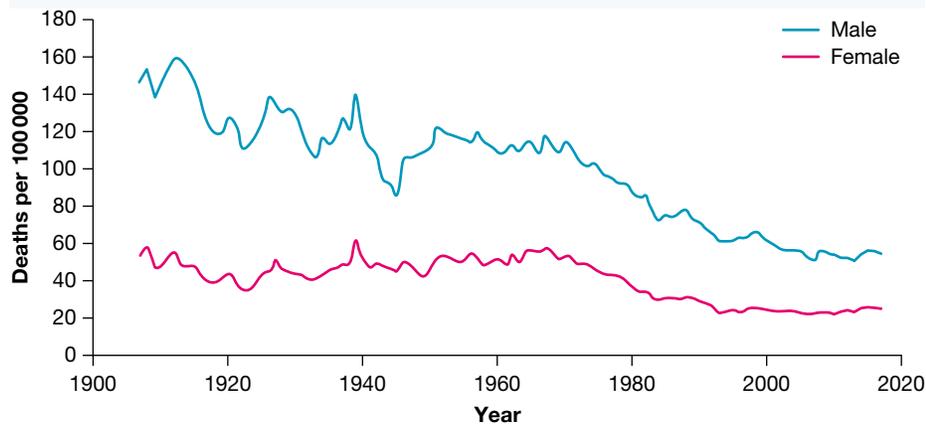
SOURCE 3 Exceedance of lifetime alcohol risk guidelines in persons aged 18 and over, by sex, 2014–15



Source: <https://www.aihw.gov.au/reports/biomedical-risk-factors/risk-factors-to-health/contents/excessive-alcohol-consumption>

- a. Referring to data in the graph above, explain the relationship between sex and exceedance of lifetime alcohol risk guidelines in people aged 18 and above. **2 marks**
- b. Explain one way alcohol contributes to the burden of disease in Australia. **2 marks**
- c. Males are more likely than females to die as a result of injury and poisoning. Name two environmental factors and for one explain why it how it may contribute to this data. **3 marks**

SOURCE 4 Trends in death rates for injury and poisoning, 1907–2015



Source: ABS, *Causes of death*, various years.

END OF TASK

5 Changes in Australia's health status

LEARNING SEQUENCE

5.1 Overview.....	239
5.2 Changes in Australia's health status over time.....	240
5.3 Policy and practice relating to the 'old public health' and Australia's health status.....	249
5.4 The biomedical approach to health.....	255
5.5 Development of new public health and the social model of health.....	259
5.6 The Ottawa Charter for Health Promotion.....	266
5.7 Improving health status using the social and biomedical approaches to health.....	275
5.8 KEY SKILLS.....	280
5.9 Review.....	285



5.1 Overview

Key knowledge	Key skills
Improvements in Australia's health status since 1900 and reasons for these improvements, focusing on policy and practice relating to: <ul style="list-style-type: none">• 'old' public health• the biomedical approach to health and improvements in medical technology• development of 'new' public health including the social model of health and Ottawa Charter for Health Promotion• the relationship between biomedical and social models of health.	Analyse data that show improvements in health over time and draw conclusions about reasons for improvements Analyse the strengths and limitations of biomedical and social models of health in bringing about improvements in health status

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Biomedical approach to health	Old public health
Health promotion	Ottawa Charter for Health Promotion
Intersectoral collaboration	Pandemic
Life expectancy	Public health
New public health	Social model of health

Exam terminology

Analyse Examine the components of; Look for links, patterns, relationships and anomalies

Draw conclusions Make reasoned decisions or judgement

Resources

-  **Digital document** Key terms glossary (doc-36123)
-  **Exam question booklet** Topic 5 Exam question booklet (eqb-0059)

5.2 Changes in Australia's health status over time

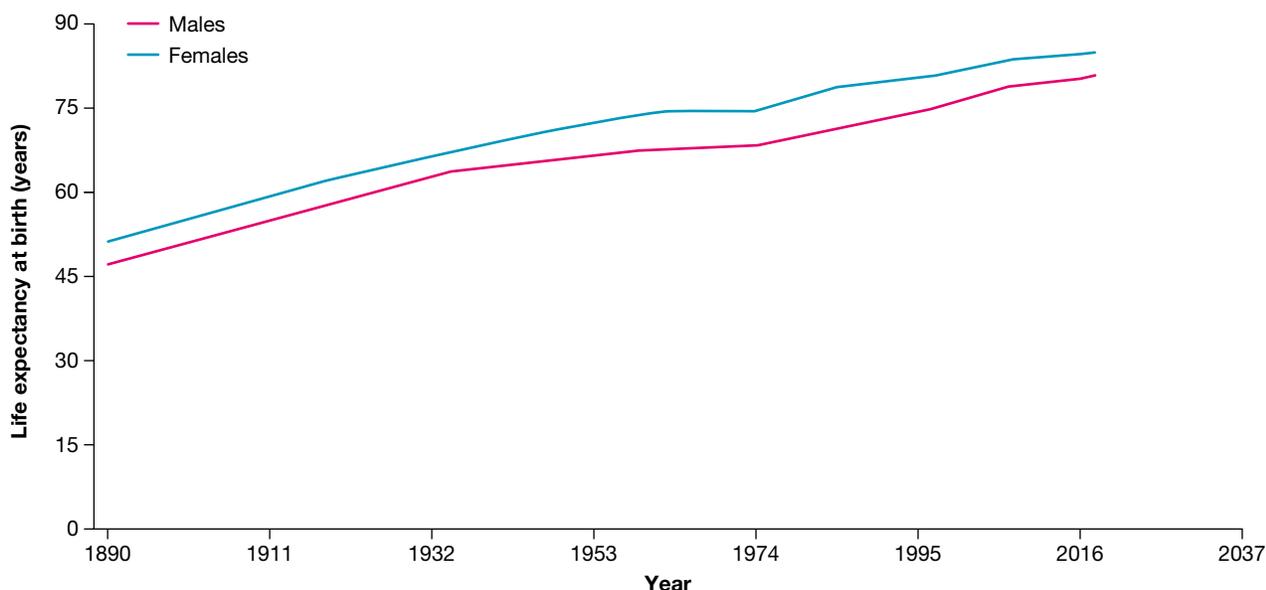
KEY CONCEPT Understanding the changes in Australia's patterns of disease

5.2.1 Life expectancy

Since the beginning of the 1900s, the patterns of disease and illness that affect the Australian population have changed considerably. **Life expectancy** is a common health indicator used to measure health status within countries and population groups. Life expectancy data over time shows that significant improvements in health status have been made, with males expected to live 80.9 years in 2019 compared to 53.8 years in 1900. Similarly, females in 2019 had a life expectancy of 85.0 years compared to 57.5 years in 1900 (see **FIGURE 5.1**). This represents an increase in life expectancy at birth over this time of around 40 per cent. A major reason for this trend has been the massive decline in mortality among children aged 0–4 years, particularly for infants aged under one year (see **TABLE 5.1**).

Life expectancy the number of years of life, on average, remaining to an individual at a particular age if death rates do not change. The most commonly used measure is life expectancy at birth (AIHW, 2018).

FIGURE 5.1 Life expectancy at birth, by sex, in Australia, 1890–2018



Source: Australian Institute of Health and Welfare (AIHW) 2020. GRIM (General Record of Incidence of Mortality) books 2018. Canberra: AIHW

Despite the increase in life expectancy since 1900, the gains have not been consistent. An examination of the data on which **FIGURE 5.1** is based reveals that there was a steady increase in the years leading up to 1961, with life expectancy at birth increasing by 14 years for males and 17 years for females. However, between 1961 and 1972, life expectancy at birth tended to even out or plateau.

TABLE 5.1 Infant mortality rates per 1000 live births, 1912 and 2019

	Males	Females
1912	80	63
2019	3.7	2.9

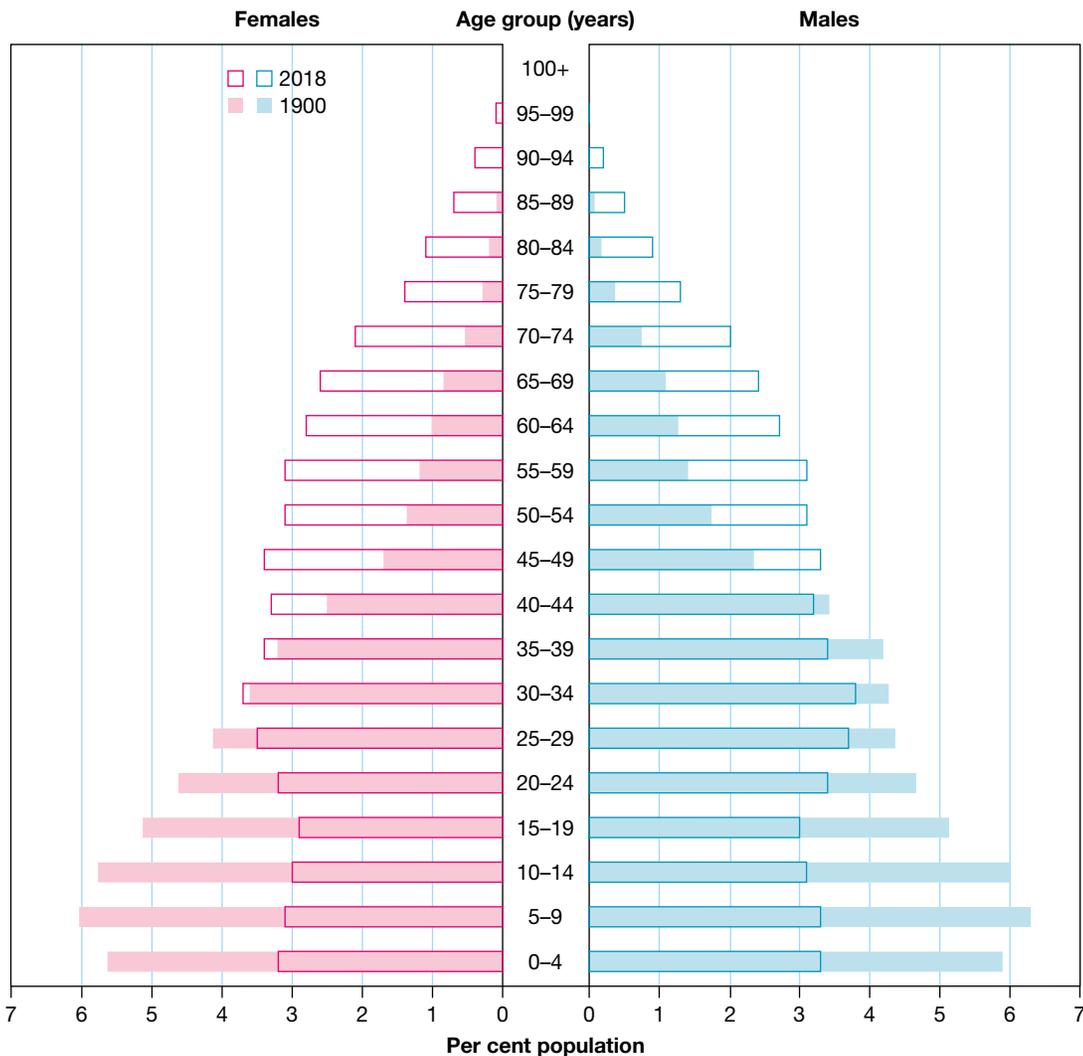
Source: AIHW and ABS data.

Male life expectancy fell slightly (67.9 to 67.8 years), while for females there was only a small improvement (74.2 to 74.5 years). It was during this time that deaths from cardiovascular diseases reached their highest level, and other lifestyle diseases such as cancer were much more prevalent.

Since 1972, life expectancy at birth has continued to increase. There have also been considerable gains in life expectancy for those aged 65 or more, increasing by 7.7 years for males and 6.7 years for females. For those aged 85, gains of 2.3 years and 2.5 years respectively have been achieved. Accompanied by lower **fertility rates** over this time, the age profile of the population has also changed since 1900 (see **FIGURE 5.2**).

int-8499

FIGURE 5.2 Age profile of Australia's population, 1900 and 2018

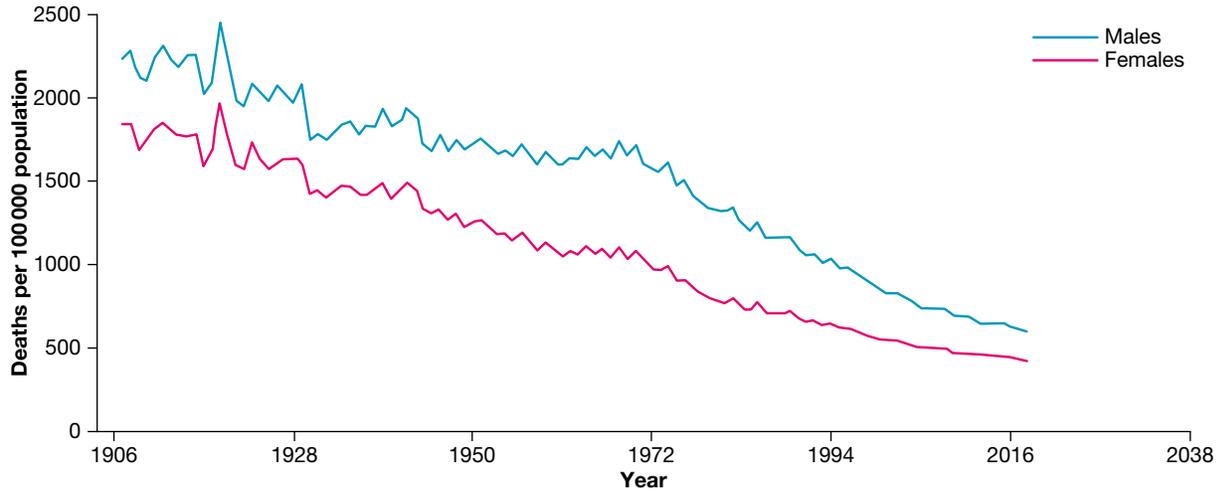


Source: AIHW 2005, *Mortality over the twentieth century in Australia: trends and patterns in major causes of death*, p. 14.

Corresponding to increases in life expectancy, death rates have also decreased. They fell by 73 per cent for males between 1907 and 2018, and by 77 per cent for females over the same time (see **FIGURE 5.3**).

Fertility rates the number of live births per 1000 women aged 15-49 in one year

FIGURE 5.3 Age-standardised death rates for all causes, by sex and year, 1907–2018

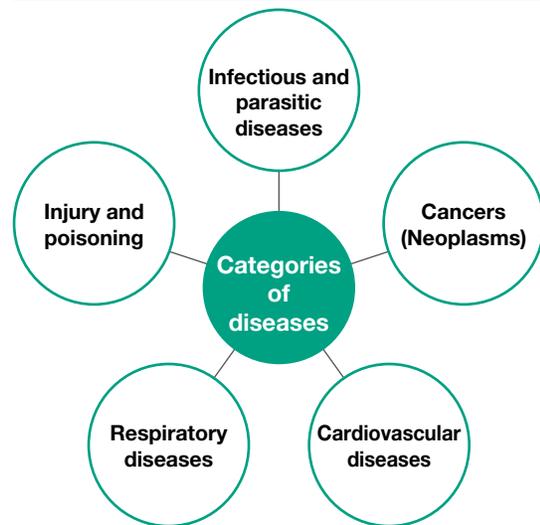


Source: AIHW, 2020, GRIM Books

5.2.2 Patterns of mortality

While there have been changes in death rates and life expectancy since 1900, there have also been changes in the patterns of mortality (the types of diseases that kill us). Diseases that were common in Australia during the first half of the twentieth century are in many ways different from those that Australians face now. They can, however, be grouped into five broad categories. Together these diseases accounted for around 60 per cent of all deaths at the start of the century and 83 per cent at the end. These broad categories are infectious and parasitic diseases, cancers (neoplasms), cardiovascular diseases, injury and poisoning, and respiratory diseases. However, their contribution to the overall death rates since 1900 have changed.

FIGURE 5.4 Categories of disease



Infectious and parasitic diseases

Infectious diseases can be transmitted from one person to another. They include diseases such as COVID-19, tuberculosis, polio, smallpox, hepatitis, and sexually transmitted infections such as **syphilis** and other **venereal diseases**. Parasitic diseases occur when parasites — such as worms, skin mites, body lice and protozoa — enter the body through contaminated food or water, or from contact with others who have parasites on their skin or hair. Once in the body, the parasites can cause sickness and in some cases death. Infectious and parasitic diseases were the most common causes of death in Australia in the first part of the twentieth century, contributing to 13 per cent of all deaths. Living conditions at that time were quite different; water and food supplies were often contaminated, rubbish littered the streets, and public facilities such as sewage disposal, safe water and controls over food supplies were not well established.

Infectious diseases are diseases caused by micro-organisms, such as bacteria, viruses, parasites or fungi, that can be spread, directly or indirectly, from one person to another

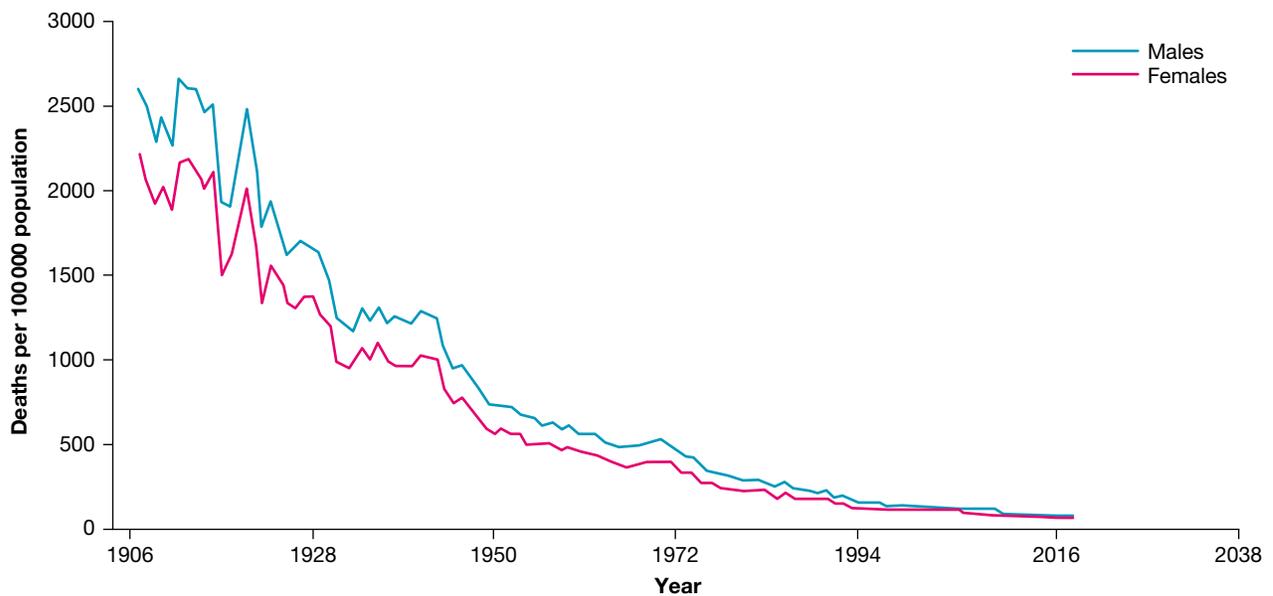
Syphilis is a bacterial infection usually spread by sexual contact. Without treatment, it can damage the heart, brain or other organs, and can be life threatening. It can be passed from mother to an unborn child.

Venereal disease is a disease contracted by sexual intercourse with a person already infected; a sexually transmitted infection

These conditions led to outbreaks of diarrhoea and diseases including cholera, smallpox, polio, tuberculosis, measles, whooping cough and diphtheria, all of which had the greatest impact on children. In 1911, gastroenteritis, diphtheria, scarlet fever, whooping cough and measles were responsible for the death of one in every 30 live-born children. This led to high rates of infant mortality (see **FIGURE 5.5**). Deaths of children aged 0–4 years accounted for more than 25 per cent of all deaths at that time.

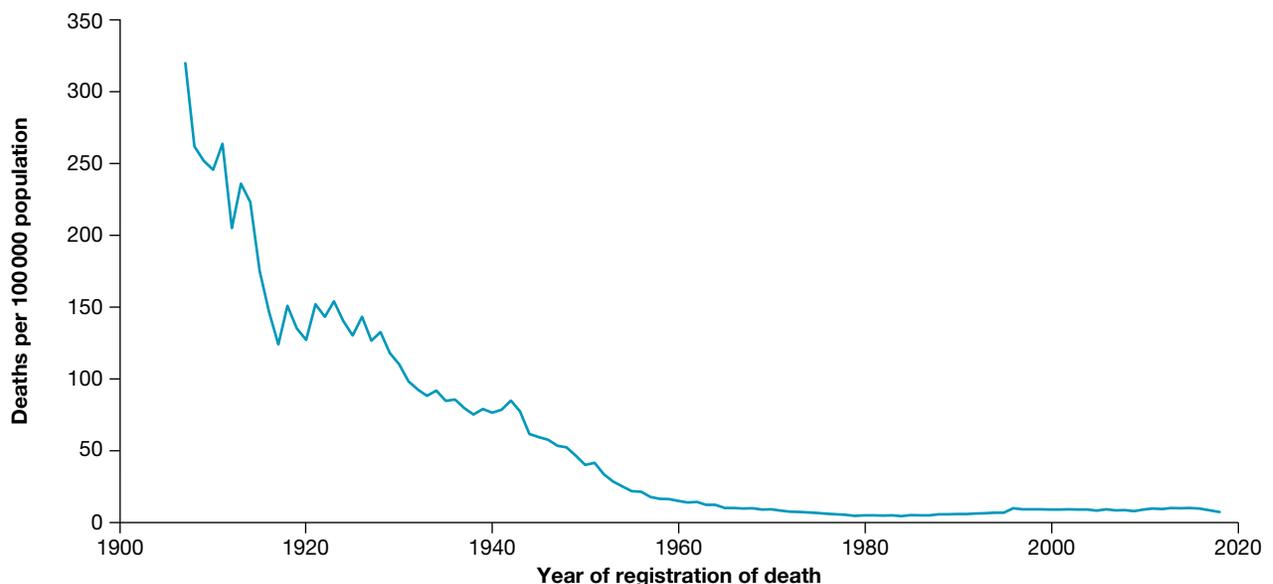
Death rates from both diarrhoea and tuberculosis fell dramatically over the twentieth century. Corresponding with this was a reduction in death rates from infectious diseases since 1900. However, in the last part of the twentieth century, diseases such as HIV/AIDS and hepatitis C were responsible for an increase in death rates from infectious and parasitic diseases (see **FIGURE 5.6**).

FIGURE 5.5 Deaths of children aged 0–4, 1907–2018



Source: AIHW, 2020, GRIM Books.

FIGURE 5.6 Age-standardised death rate from infectious and parasitic diseases, by year, 1907–2018



Source: AIHW, 2020, GRIM books.

Cancer (neoplasms)

Cancer death rates increased throughout the twentieth century, reaching a peak in the mid-1980s before falling gradually between 2000 and 2018. This rise was due to an increase in lung cancer for which the uptake in cigarette smoking in the 1920s was responsible. For males, cancer death rates peaked during the 1980s at nearly 290 deaths per 100 000 population, then fell to 247 deaths per 100 000 in 2000. This decline reflected the reduction in male smoking rates that started to occur in the mid-1970s.

Stomach cancer was the largest cause of cancer deaths in the 1920s and this decreased for both males and females in subsequent years.

Cardiovascular disease

Cardiovascular diseases (also known as circulatory disease) involve the heart and blood vessels, and interfere with how the blood is circulated throughout the body. Two of the most significant forms of cardiovascular diseases are ischaemic heart disease (coronary heart disease, notably heart attack) and cerebrovascular disease (mainly stroke). Since 1900, these diseases have been one of the major causes of death. Death rates from cardiovascular diseases increased and reached their peak in the mid-1960s. Although there has been a decline in death rates from cardiovascular diseases since then, they continue to be one of the major causes of death in Australia (see **FIGURE 5.7**).

Pandemic the spread of infectious disease through human populations across a large region such as multiple continents or worldwide. COVID-19 is the most recent example of a pandemic, affecting almost every country.

FIGURE 5.7 Age-standardised death rates for cardiovascular diseases, by year, 1907–2018



Source: AIHW, 2020, GRIM books.

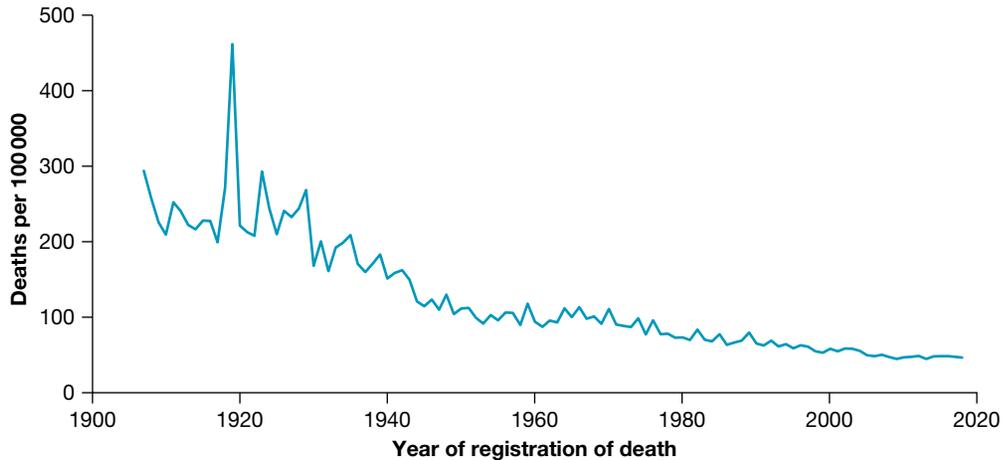
Respiratory diseases

Respiratory diseases affect the lungs and other parts of the body that are involved in breathing. They include COVID-19, pneumonia, influenza, asthma and chronic obstructive pulmonary disease (COPD). Pneumonia and influenza were the major causes of death from respiratory diseases in 1907 but were replaced by deaths from chronic obstructive pulmonary disease by 2000. Apart from the 1919 Spanish influenza **pandemic** (represented by the spike in **FIGURE 5.9**), death rates from respiratory diseases fell dramatically across the century, and by 2000 were less than 10 per cent of 1907 levels. Pneumonia deaths also fell considerably since 1900. Death rates from COVID-19 may also be represented as a spike in years to come.

FIGURE 5.8 A COVID-19 field hospital set up in a former industrial plant in Italy in 2020, in anticipation of growing patient numbers in response to the pandemic



FIGURE 5.9 Age-standardised death rates for diseases of the respiratory system, by year, 1907–2018



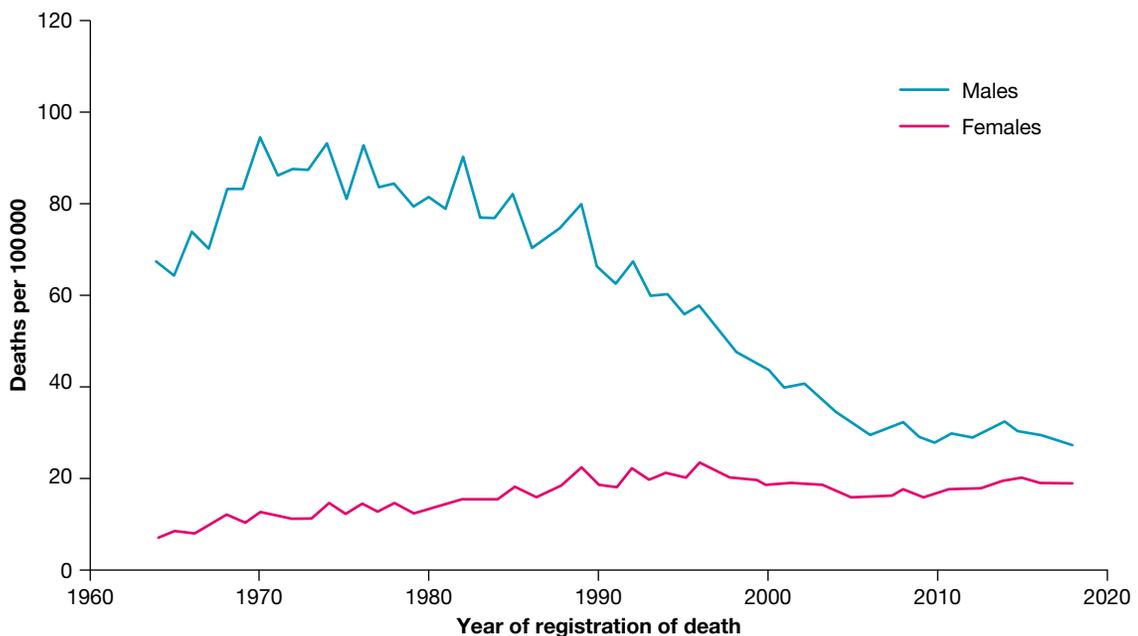
Source: AIHW, 2020, GRIM books.

In the early part of the twentieth century, deaths from respiratory infections were common among those who worked in the mining industry, where few occupational health and safety regulations were in place to protect workers from the effects of inhaling the mining dust.

Deaths due to asthma decreased in the first half of the twentieth century, before three peaks in asthma mortality occurred in the 1950s, 1960s and late 1980s. Since the 1980s, deaths due to asthma have reduced by 70 per cent.

Deaths due to chronic obstructive pulmonary disease increased among males in the late 1960s and then decreased significantly between 1970 and 2018. However, among females, death rates due to chronic obstructive pulmonary disease increased slightly between 1964 and 1996. Since 1996, death rates for females have reduced, although rates in 2018 were still higher than in 1964 (see **FIGURE 5.10**).

FIGURE 5.10 Age-standardised death rates for chronic obstructive pulmonary disease, 1964–2018

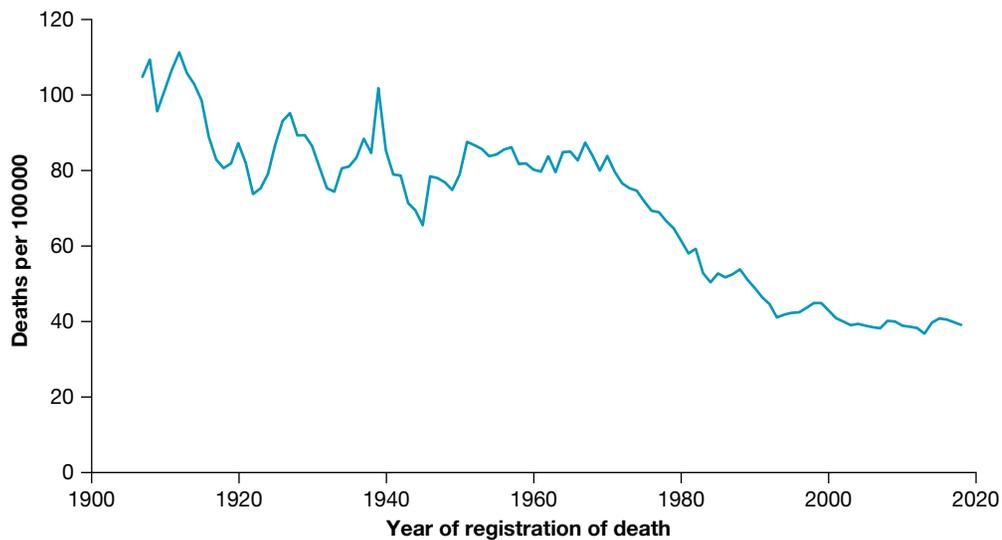


Source: AIHW, 2020, GRIM Books.

Injury and poisoning

Deaths from injury and poisoning include those from motor vehicle and other accidents, suicide, assault, poisoning, drowning, burns and falls, and complications from medical and surgical care. Since 1900, death rates for injury and poisoning more than halved for both males and females, with the most rapid decline occurring from the 1970s. Deaths from motor vehicle crashes were at their highest in 1970 at 49 deaths for males per 100 000 population and 18 per 100 000 for females. Death rates fell to 14 and 6 per 100 000 for males and females respectively by 2000. This decline reflected the range of public health actions that were introduced by the government, commencing with the introduction of the compulsory wearing of seatbelts in 1970.

FIGURE 5.11 Age-standardised death rates for injury and poisoning, by year, 1907–2018



Source: AIHW, 2020, GRIM Books.

Male death rates from injury and poisoning were affected by war deaths. During World War I and World War II many Australian men served overseas, but deaths that occurred overseas were not counted as part of Australian official mortality statistics (AIHW, 2006).

Work-related accidents have contributed to a significant proportion of accidental deaths since 1900. Working conditions in the early part of the twentieth century were dangerous, involving exposure to toxic substances or physical injury due to limited occupational health and safety regulations. Workers were often paid an additional allowance, called 'danger money', for agreeing to work in risky or hazardous environments.

FIGURE 5.12 Since 1900, death rates for injury and poisoning more than halved for both males and females. The reduction in deaths from road traffic crashes has contributed to this.



5.2 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

5.2 Quick quiz



5.2 Exercise

5.2 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4, 5, 6, 8, 9

■ LEVEL 2

7, 11, 12

■ LEVEL 3

10, 13

Test your knowledge

1. Explain two health indicators used to measure health status within a country that are evident in the graphs provided in this chapter.
2. List the five broad categories of diseases that contribute to mortality patterns overtime and briefly explain each one
3. Which infectious diseases were responsible for the increase in death rates in the early part of the twentieth century?
4. When did cancer death rates reach their peak and what was the reason for this peak?
5. List the two most significant types of cardiovascular diseases.
6. What are respiratory diseases?
7. Explain changes in death rates for injury and poisonings since 1970 and provide one reason for the change.
8. Why are many deaths due to war not represented in the data for injury and poisoning?
9. What is meant by 'danger money'?

Apply your knowledge

10. Use the information in **FIGURE 5.2** to explain how the age profile of the population has changed and explain the reasons for the change.
11. Use the data in **FIGURE 5.9** to describe the trends in death rates for respiratory diseases and explain the reasons for the trends.
12. Explain the changes in deaths from infectious and parasitic diseases between 1907 and 2018 and provide reasons for these changes. Use the data in **FIGURE 5.6** to help you.
13. Consider the following two birth notices:

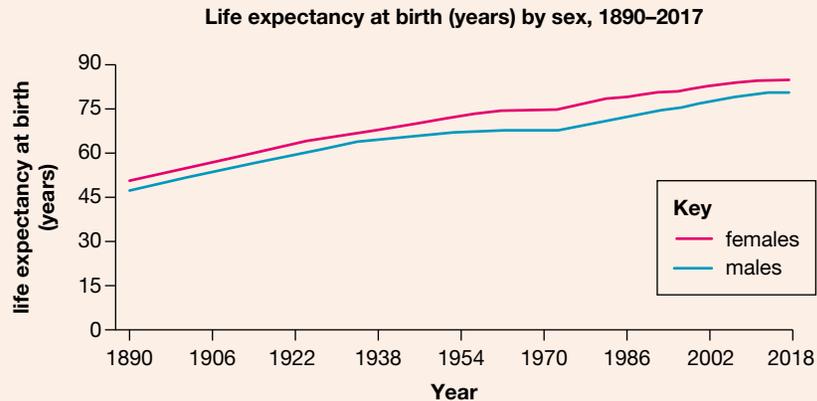
Angus John, Born 7th October 1918 Mother and baby doing well

James Michael, Born 7th October 2018 Mother and baby doing well

- a. Compare the life expectancy of these two babies.
- b. What are the most likely causes of illness and death during their lifetime and explain reasons for the differences.

Question 1 (4 marks)

Source: VCE 2020, Health and Human Development Exam, Q.5; © VCAA

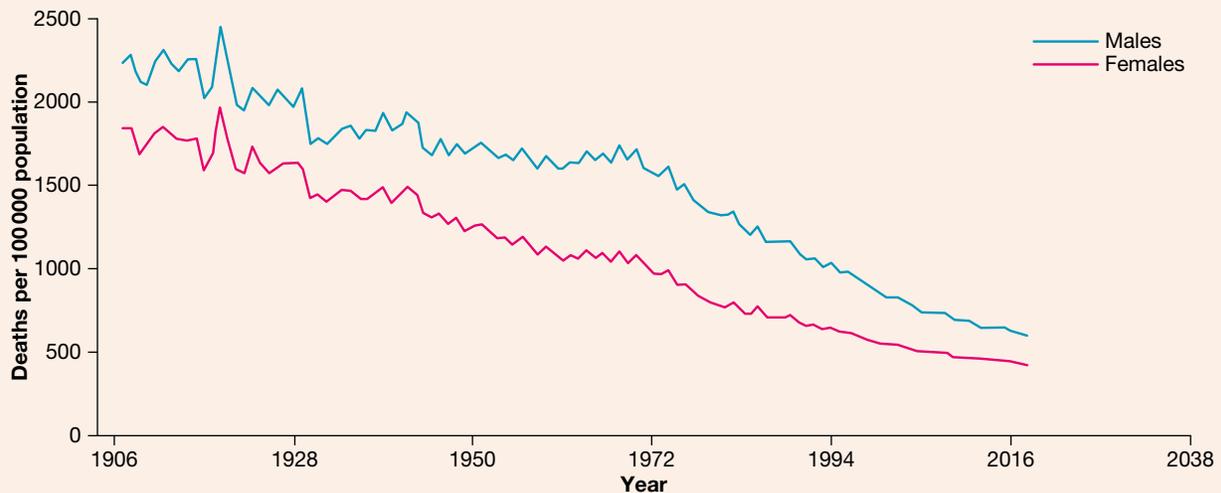


a. **Identify** two trends that are evident in the graph above. **2 marks**

b. Select one trend from part a and **provide** two reasons for this trend. **2 marks**

Question 2 (2 marks)

Using data from the following graph, **identify** a trend in mortality rates since 1900.

**Question 3 (2 marks)**

Injury death rates have decreased in Australia since 1900. **Outline** two reasons why injury death rates have decreased.

Question 4 (2 marks)

Child mortality rates from infectious and parasitic disease death have decreased in Australia since 1900. **Outline** two reasons why infectious and parasitic death rates in children have decreased.

Question 5 (1 mark)

In 1911, gastroenteritis, diphtheria, scarlet fever, whooping cough and measles were responsible for the death of one in every 30 live-born children. **What** category of diseases are these examples of?

More exam questions are available in your learnON title.

5.3 Policy and practice relating to the ‘old public health’ and Australia’s health status

KEY CONCEPT Understanding policies and practices relating to the ‘old public health’ and how they have contributed to improving Australia’s health status over time

Changes in Australia’s health status since 1900 have occurred mainly due to changes in approaches to public health and developments in science and technologies. **Public health** is concerned with the organisation and collective effort to improve the health status of the entire population. It refers particularly to the ways in which governments monitor, regulate and promote health status and prevent disease.

on Resources

Teacher-led video Concepts of the ‘old’ public health and ‘new’ public health (tlvd-0261)

5.3.1 Old public health

As you saw in subtopic 5.2, the major causes of morbidity and mortality early in the twentieth century were infectious diseases, including sexually transmitted infections and respiratory diseases, which resulted in high under-five mortality rates, high death rates and low life expectancy. This was mainly caused by the living conditions at the time.

At the beginning of the twentieth century, the living conditions for many people in Australia were very poor. Access to clean water and sanitation facilities were minimal and little was known about good hygiene practices. Waste littered the streets, attracting huge numbers of rats and mice, which carried disease. Overcrowded and poor-quality housing was common; the quality and safety of food was poor and working conditions were dangerous. Consequently, infectious diseases such as diarrhoea, cholera, measles, smallpox, diphtheria, tuberculosis and whooping cough were prevalent and accounted for much of the death and disability at this time. Children were particularly at risk and infectious diseases were responsible for high rates of infant and child mortality.

Pressure was placed on governments to take action to improve people’s health. As a result, a range of policies and practices were introduced by governments that became known as the **old public health**. These policies and practices played a significant role in reducing the prevalence of infectious and parasitic diseases, respiratory diseases and injuries that were prevalent during the first half of the twentieth century. As a result, significant improvements occurred in life expectancy, maternal and child mortality and overall death rates.

Public health the ways in which governments monitor, regulate and promote health status and prevent disease

Old public health government actions that focused on changing the physical environment to prevent the spread of disease, such as providing safe water, sanitation and sewage disposal, improved nutrition, improved housing conditions and better work conditions

FIGURE 5.13 Destroyed rats during the bubonic plague in Brisbane, 1900–02



5.3.2 Policies and practices associated with the old public health

Some of the policies and practices that were implemented as part of the old public health included:

- *The establishment of government-funded water and sewage systems and better sanitation* — This provided people with clean water to drink and removed garbage and waste from the streets, contributing to a reduction in deaths from infectious diseases such as diarrhoea, typhoid and cholera.
- *Quarantine laws* — An outbreak of the **bubonic plague** in 1900 triggered the introduction of strict **quarantine** laws. The Commonwealth Quarantine Act, which is still in place in Australia, prevented the arrival and transmission of infectious diseases from other countries. A recent example is the strict quarantine that travellers returning to Australia from overseas had to undertake to minimise the risks associated with COVID-19.
- *Elimination of housing slums and introduction of better-quality housing* — Regulations to improve housing conditions were introduced, which required all houses to be built with drains and, where possible, be connected to a sewerage system or cesspit (a hole in ground to separate human excrement). The application of housing standards required houses to have ventilation and building codes and better planning of land use resulted in less overcrowding. Attempts were also made to clean up the slums in major cities. This reduced deaths from respiratory diseases such as pneumonia and infectious diseases such as typhoid, cholera and diarrhoea.
- *Improved food and nutrition* — At the beginning of the twentieth century, food was a common transmitter of diseases from bacteria, parasites, toxins and viruses. Foodborne diseases were most likely to originate in the home due to poor hygiene and storage of food. The Pure Foods Act in 1905 brought about improvements in the safety and standards of food. Penalties were introduced to protect the safety of food and public health campaigns raised awareness of food safety and hygiene. The nutritional advantages of eating foods such as fruit and vegetables were marketed by public health workers, which improved nutrition. Widespread refrigeration became available after World War II, which reduced the need to use harmful preservatives in meat-curing. This brought about a reduction in stomach cancer. The School Milk Program, which was introduced after World War I, saw milk being provided to school children to reduce protein and calcium deficiencies. Improved nutrition resulted in better physical health and wellbeing as children and adults had better resistance to infectious and respiratory diseases and were able to more quickly recover from them.
- *Improved working conditions* — Early public health action to improve working conditions focused on providing better ventilation and toilets in workplaces. Legislation required factories of more than 20 people to provide a sufficient number of ‘water closets’ (toilets) and other basic public health amenities that were not usually provided to workers. Laws prohibited the employment of children aged less than 13 years and regulated the employment of minors, aged between 13 and 16 years. This led to a reduction in industrial-related child deaths. The Harvester Judgement in 1907 saw the introduction of a minimum wage, where employers were required to pay their workers a wage that guaranteed a reasonable standard of living. This had a significant impact on reducing poverty-related illness. The Victorian Health Act of 1919 saw regulations put in place to govern dangerous occupations. These actions contributed to a reduction in work place injuries.
- *Establishment of public health campaigns* — During World War I, the Commonwealth Government provided funding to the states for the introduction of tuberculosis and venereal disease public health campaigns to address the high level of mortality and morbidity from these diseases.
- *More hygienic birthing practices* — Early in the twentieth century, there was an emphasis on providing safe and hygienic birthing conditions with trained and registered midwives and doctors. This contributed to a reduction in maternal and infant mortality rates.
- *Provision of antenatal and infant welfare services* — Following World War II, State and Commonwealth governments became responsible for the provision of **antenatal** and infant welfare services. By 1937, there were more than 200 infant welfare centres operating in Victoria. These measures, along with regulations that resulted in better quality milk, an increase in breastfeeding rates and reduced fertility rates contributed further to improvements in infant mortality rates.

Sanitation the process of eliminating contact between humans and hazardous wastes, including human and animal faeces and urine, solid wastes, domestic wastewater (sewage and grey water), industrial wastes and agricultural wastes

Bubonic plague an infectious disease that is caused by bacteria transmitted to humans by fleas from infected rats

Quarantine laws that require a person, animal, plant or any type of material that might be carrying an infectious agent to be kept isolated to prevent the spread of disease

Antenatal relates to the medical care given to pregnant women before their babies are born

FIGURE 5.14 Antenatal and infant welfare services helped improve infant mortality rates.



Many policies and practices associated with the old public health were introduced in response to advancements in medical technology in relation to the diagnosis, treatment and monitoring of diseases. This is often referred to as a biomedical approach and will be discussed further in this topic. The discovery of vaccines is one example that enabled a public health response to be implemented.

5.3.3 The discovery of vaccines

Great gains were made with the discovery of vaccines, which helped to treat a range of infectious diseases. Vaccines helped bring huge reductions in morbidity and mortality from diseases such as smallpox, polio, diphtheria, pertussis (whooping cough), tuberculosis, tetanus, polio, measles, mumps, rubella and hepatitis B. The Australian government introduced public health policies that resulted in mass vaccinations in the 1930s for diphtheria, 1939 for tuberculosis, the 1950s for pertussis, tetanus and poliomyelitis, and the 1960s for measles.

The success of vaccinations as a public health measure has resulted in the global elimination of smallpox, with polio eradicated from most parts of the world (see **FIGURE 5.16**).

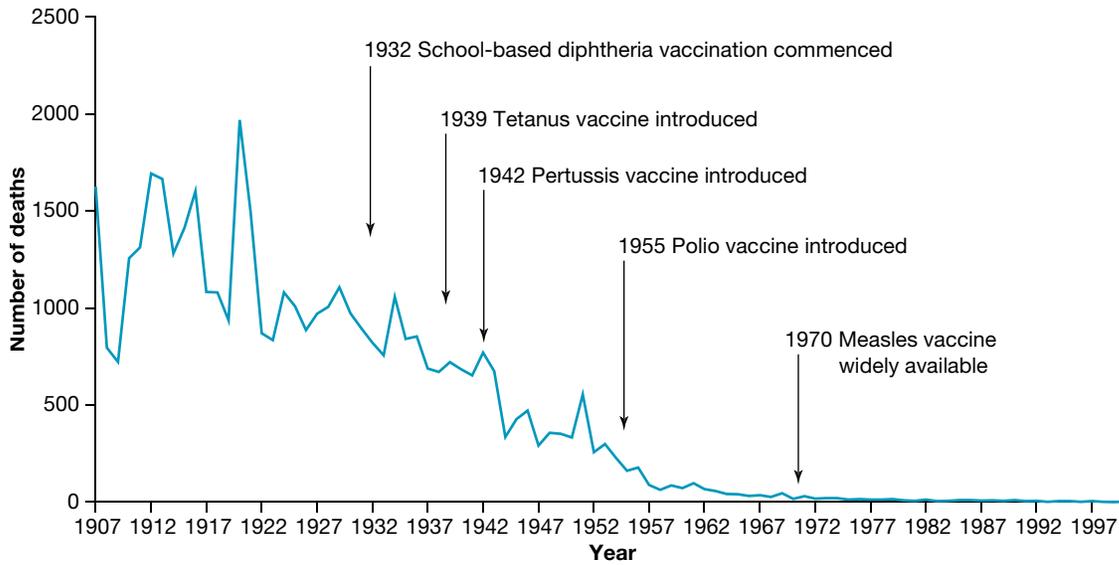
FIGURE 5.15 Vaccines for diseases, such as pertussis (whooping cough), helps reduce infant mortality.



EXAM TIP

If you are using immunisation as an example of a policy and practice associated with the old public health, it is important to focus your discussion on the mass vaccinations that were made possible with this discovery, not the discovery of vaccines themselves. As you will see in subtopic 5.4, the discovery of vaccines represents an example of the biomedical approach to health. It is the mass vaccinations that represent public health policy.

FIGURE 5.16 The discovery of vaccines saw the introduction of mass vaccination programs as a public health measure. These were very successful in reducing morbidity and mortality rates from infectious diseases.



Source: Gruszin, S., Hetzel, D. and Glover, J. Advocacy and action in public health: lessons from Australia over the twentieth century Commonwealth of Australia 2012, p. 28, http://phidu.torrens.edu.au/pdf/2010-2014/public-health-successes-2013/advocacy_action_public_health_full.pdf

FIGURE 5.17 A range of policies and practices were introduced as part of the old public health and were effective in addressing the major causes of morbidity and mortality that existed in the first half of the twentieth century.

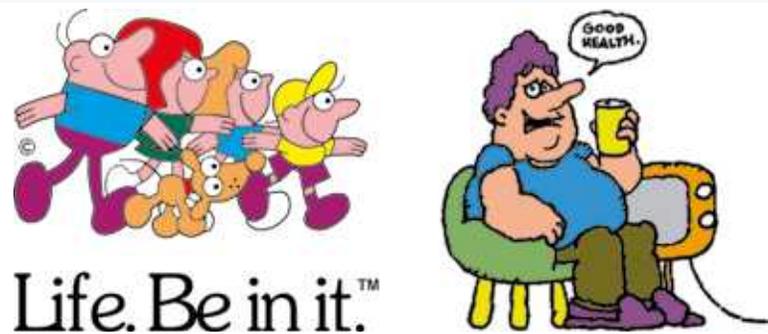


5.3.4 The shift to health promotion

As life expectancy increased and people were living longer, the patterns of disease and illness started to change. The emergence of lifestyle diseases during the 1950s and 60s required a different approach to public health. It was during this time that a shift towards the implementation of publicly funded **health promotion** campaigns occurred. These were designed to bring about individual behavior change by making people aware of the causes of ill health such as tobacco smoking, physical inactivity, poor diet and excessive alcohol consumption. It was believed that people would make positive changes to their behaviour if they were aware of the effects their behaviour would have on their health and wellbeing.

Health promotion the process of enabling people to increase control over, and to improve, their health

FIGURE 5.18 'Life. Be in it.' was one of the first health promotion campaigns designed to bring about behaviour change.



5.3 Activity

Access the **Life. Be in it.** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital document** Life. Be in it. worksheet (doc-32200)
-  **Weblink** Life. Be in it.

5.3 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

5.3 Quick quiz **on**

5.3 Exercise

5.3 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6, 7

■ LEVEL 3

8, 9

Test your knowledge

1. What is public health?
2. Describe the 'old public health'.
3. What factors led to the introduction of policies and practices associated with the old public health?
4. What public health measure was introduced by the Commonwealth Government in response to the outbreak of the bubonic plague in 1900 and was also an important measure in helping to contain the spread of COVID-19 within Australia?

5. How did the discovery of vaccines influence public health policy and practice?
6. When were publicly-funded health promotion campaigns introduced and why?

Apply your knowledge

7. The following table lists a range of examples of old public health policies. Beside each one, identify how each one contributed to improvements in Australia's health.

The first example is completed for you.

Example of old public health policy	Contribution to improvements in Australia's health
Mass immunisation programs	Reduction in infectious diseases
Better quality food and nutrition	
Better quality housing and fewer slums	
Introduction of quarantine laws	
Improved water and sanitation	
More hygienic birthing practices	

8. Select three policies or practices from the table above that were introduced as part of the old public health and discuss how they contributed to improvements in Australia's health status.
9. Develop a timeline of public health actions that were introduced between 1900 and 1970. Identify those actions that would be associated with the old public health.

5.3 Quick quiz



5.3 Exercise

5.3 Exam questions

Question 1 (1 mark)

What are three areas that old public health focused on?

Question 2 (1 mark)

Old public health saw the establishment of antenatal and infant welfare services. By 1937 there were more than two hundred infant welfare centres operating in Victoria. **Identify** what this led to a significant decrease in.

Question 3 (3 marks)

'The emergence of lifestyle diseases during the 1950s and 60s saw a shift towards the implementation of publicly funded health promotion campaigns.'

Using an example, **outline** how the introduction of health promotion campaigns led to improvements in health status.

Question 4 (1 mark)

Apart from the development of health promotion campaigns and the establishment of infant welfare services, **identify** another example of old public health.

Question 5 (2 marks)

'The emergence of lifestyle diseases during the 1950s and 60s saw a shift towards the implementation of publicly funded health promotion campaigns.'

Identify two examples of lifestyle diseases.

More exam questions are available in your learnON title.

5.4 The biomedical approach to health

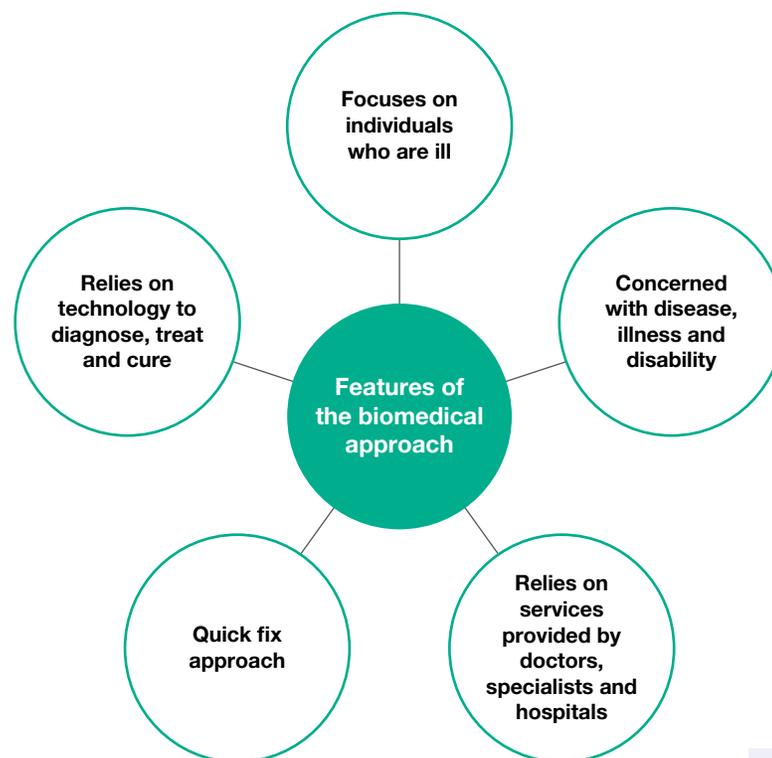
KEY CONCEPT Understanding the biomedical approach to health and how this approach has contributed to improving Australia's health status

The biomedical approach to health and developments in medical technology have contributed to improvements in the health status of Australians since 1900. Along with public health actions, the biomedical approach has assisted in bringing about increased life expectancy, reduced death rates and improved infant mortality.

5.4.1 The biomedical approach to health

The term 'biomedical' comes from the Greek word *bios* (meaning 'life') and the Latin word *medicus* (meaning 'healing'). The **biomedical approach to health**, sometimes referred to as the 'band aid' or 'quick-fix' approach, focuses on the physical or biological aspects of disease and illness. It involves diagnosing the disease or illness and then treating the illnesses and conditions once symptoms are present. It focuses mainly on the use of technology to diagnose and cure disease, and on the services provided by doctors, specialists and hospitals. Individuals are the focus of the biomedical approach, in contrast to the population-based focus of public health actions.

FIGURE 5.19 The biomedical approach to health focuses on individuals and seeks to return them to their pre-illness state of health and wellbeing.



The biomedical approach concentrates on disease, illness or disability, and works to return a person to a pre-illness state of health and wellbeing. Addressing the reasons for illness are not at the centre of the biomedical approach; the condition itself is the focus, and treatments are considered the solution to the disease. As a result, education on the behavioural and sociocultural factors that can improve health status are generally excluded.

Biomedical approach to health focuses on the physical or biological aspects of disease and illness. It is a medical model practised by doctors and health professionals and is associated with the diagnosis, treatment and cure of disease.

Dominance of medical science

The biomedical approach to health became dominant throughout the twentieth century as people sought to understand the causes and treatments of the diseases that were present at the time. This saw a shift in health policy to one that focused on curative and restorative medicine and led to an increased demand for hospital and medical care. Treatment involved skilled diagnosis and the use of increasingly complex and expensive medical technology, which places financial pressure on the healthcare system and accounts for a significant proportion of the healthcare budget.

Advances in medical technology

Advancements in medical technology allow us to better diagnose, treat and cure many diseases and has therefore contributed to increases in life expectancy over time. As seen in section 5.3.3, the discovery of vaccines saw significant improvements in health status throughout the twentieth century and new vaccines continue to be developed to address the causes of disease and illness. Examples of this have been the ongoing work to find a vaccine for HIV/AIDs and for COVID-19.

One of the advances in medical technology following World War II was the discovery of antibiotics. Along with vaccines, this contributed to further reductions in death rates from infectious diseases such as pneumonia, venereal disease and syphilis. The discovery of penicillin as a form of antibiotic was also important in reducing the morbidity and mortality associated with infections. It also contributed to a decline in maternal mortality as many women had previously died due to infection during childbirth.

The desire to better understand the causes and treatment of disease and the corresponding advancements in technology can be seen clearly when looking at an example such as cardiovascular disease.

Diseases of the cardiovascular system

Diseases of the cardiovascular system were a major cause of death early in the twentieth century, and little was known about the causes of the diseases or how the heart and cardiovascular system functioned. The introduction of the sphygmomanometer and stethoscope in 1910 enabled doctors to measure blood pressure for the first time, and in 1941 new X-ray techniques enabled doctors to view the action of the heart using dye inserted into a blood vessel.

Doctors were better able to diagnose cardiovascular problems but were still unable to treat them. In the mid-1950s, the heart–lung bypass machine allowed surgeons more time to undertake complicated heart procedures. From 1967, surgery was being used to bypass obstructions in the coronary arteries. This helped to relieve pain, improve an individual's quality of life and decrease mortality. The development of antihypertensive drugs also helped reduce mortality from cardiovascular disease through the management of hypertension. There continues to be ongoing advancements in technology and a focus on reducing mortality rates from cardiovascular disease.

FIGURE 5.20 The biomedical approach focuses on treating the condition rather than the cause.



FIGURE 5.21 Advances in technology, such as MRI scans, help save the lives of many people.



5.4.2 Advantages and disadvantages of the biomedical approach to health

The biomedical approach to health has many advantages and has contributed to improvements in Australia's health status over time. It is an important component of the healthcare system. However, this approach to health also has a number of disadvantages or limitations.

TABLE 5.2 Advantages of the biomedical approach to health

Advantages of biomedical approach	Explanation
Funding brings about improvements in technology and research.	Without the biomedical approach to health, there would be no X-rays, antibiotics or anesthetics. There would also be relatively little knowledge about how to diagnose and treat illness.
It enables many illnesses and conditions to be effectively treated.	Most people have had a range of medicines over the course of their lives. These are often taken for granted as they stop diseases or conditions that would otherwise develop and cause considerable ill health or death.
It extends life expectancy.	Many causes of death that were common in the past, such as some infectious diseases, can now be treated and cured. This increases life expectancy.
It improves quality of life and health adjusted life expectancy.	Many chronic conditions can be managed with medication, therapy or surgery, reducing pain and suffering.

Although the biomedical approach is a vital part of the health system and has contributed to the high level of health status experienced in Australia, it has some limitations or disadvantages.

TABLE 5.3 Disadvantages of the biomedical approach to health

Disadvantages of biomedical approach	Explanation
It relies on professional health workers and technology and is therefore costly.	Because individuals are the focus of this approach, people with specialist knowledge about disease and treatment are required to adequately treat the patient. As knowledge and technology have developed, the cost of training and equipment has also increased. Some machines required for diagnosis (such as MRI machines) and treatment (such as robotic surgery systems) can cost millions of dollars and only treat a small number of patients each day.
It doesn't always promote good health and wellbeing.	The biomedical approach can encourage a reliance on quick-fix solutions to health issues. As the focus is on the condition itself rather than the factors that caused it, the biomedical approach does not encourage people to be responsible for their own health and wellbeing.
Not every condition can be treated.	Those relying on the biomedical approach to restore optimal health and wellbeing may experience conditions that cannot be cured or treated effectively. These conditions may be preventable through behaviour change, however, this is not a focus of the biomedical approach. Cancer is an example of a condition that has treatments available but, in many cases, no cure.
Affordability	Not all individuals can afford the medical technologies and resources that are a part of the biomedical approach to health. This is an important factor contributing to the differences experienced in health status between population groups.

EXAM TIP

When asked to discuss the advantages and/or disadvantages of the biomedical approach to healthcare you need to do more than list the advantage or disadvantage. For example, if you stated that an advantage of the biomedical approach was that it improves quality of life, you would not be awarded full marks as you have not discussed how the biomedical approach improves quality of life. A better response would be:

An advantage of the biomedical approach is that it improves quality of life. The biomedical approach can diagnose and treat disease and illness, reducing pain and suffering, and allowing individuals to enjoy an improved quality of life.

5.4 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

5.4 Quick quiz

on

5.4 Exercise

5.4 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 5

■ LEVEL 2

3, 4, 7

■ LEVEL 3

6, 8

Test your knowledge

1. Explain the biomedical approach to health.
2. Why is the biomedical approach sometimes called the 'band aid' or 'quick-fix' approach?
3. Explain why the biomedical approach places pressure on the healthcare system.
4. How did the discovery of antibiotics impact the changing patterns of disease and illness?
5. Identify and explain three advantages and three disadvantages of the biomedical approach to health.

Apply your knowledge

6. Use the example of cardiovascular diseases to explain how the biomedical approach and medical technology has contributed to improvements in health status since 1900.
7. What factors led to dominance of the biomedical approach? Outline two disadvantages that are associated with this.
8. 'Improvements in technology have brought about changes in the numbers of very pre-term babies surviving after birth. In the 1980s it was rare to resuscitate a baby of 26 weeks; today doctors are likely to refuse a parent's request not to resuscitate a baby of this age. By 2012, 70 per cent of children born at 24 weeks survived to go home, rising to 80 per cent of those born at 25 weeks and 92 per cent at 26 weeks. The first time we put a baby on a ventilator was 1969 and at that time we were looking at ventilating babies of 34 weeks. By the 1980s, a baby of 28 weeks would be routinely resuscitated but it was less likely under that age. Now at 26 weeks, resuscitation is routine.'

Source: Adapted from Barrowclough, A. 2015, 'Premature babies, medical miracles and the hardest decision a parent will ever face', *The Australian*, 2 February.

Discuss the advantages and disadvantages of the improvements in technology outlined above.

5.4 Quick quiz

on

5.4 Exercise

5.4 Exam questions

Question 1 (2 marks)

Source: VCE 2019, *Health and Human Development Exam*, Q.8d (adapted); © VCAA

Outline two disadvantages of the biomedical model of health.

Question 2 (2 marks)

Source: VCE 2010, *Health and Human Development Exam*, Section A, Q.7; © VCAA

Outline two major characteristics of the biomedical model of health.

Question 3 (2 marks)

Source: VCE 2009, Health and Human Development Exam, Q.4.b; © VCAA

List two examples that represent a biomedical approach to health.

More exam questions are available in your learnON title.

5.5 Development of new public health and the social model of health

KEY CONCEPT Understanding new public health and the social model of health

5.5.1 New public health

As medical technologies and knowledge of disease and illness developed, there was an expectation and belief that these would solve the health and wellbeing problems faced at that time. However, towards the 1970s there was concern that, while the control of infectious diseases had been achieved, the leading causes of morbidity and mortality had changed. Lifestyle diseases, especially cardiovascular diseases, had become the leading cause of death and disability. While the biomedical approach could achieve improvements in health status, many of the causes of these diseases were lifestyle related. This brought about a belief that if individuals were made aware of the consequences of their health behaviours, they would take action to change their behaviour. This led to the introduction of a range of health promotion strategies that sat alongside the biomedical approaches.

It soon became evident that while people were aware that behaviours such as smoking, poor diet and lack of exercise could impact health and wellbeing, knowledge on its own was not successful in bringing about behaviour change. Inequalities in health status were also increasing. Those who were wealthier were more likely to have better health and wellbeing. It became evident that there are many factors, often beyond the control of an individual, that can affect health and wellbeing. This brought about an increased understanding of the significant influence that health behaviours and the physical, sociocultural and political environments have on health and wellbeing. With this understanding came a new approach to health promotion called **new public health** or the **social model of health**.

The social model of health takes into account the significant role that sociocultural factors such as socioeconomic status, access to healthcare and social connectedness play in bringing about improved health status and health and wellbeing. If these factors can be addressed, many diseases and illnesses can be prevented altogether. The most effective way of achieving this is to take a community-development approach (as opposed to the individual focus of the biomedical approach). Policies, education and health promotion activities are key aspects of the social model of health.

The changes in approaches introduced to address the different patterns of diseases can be seen in **FIGURE 5.23**.

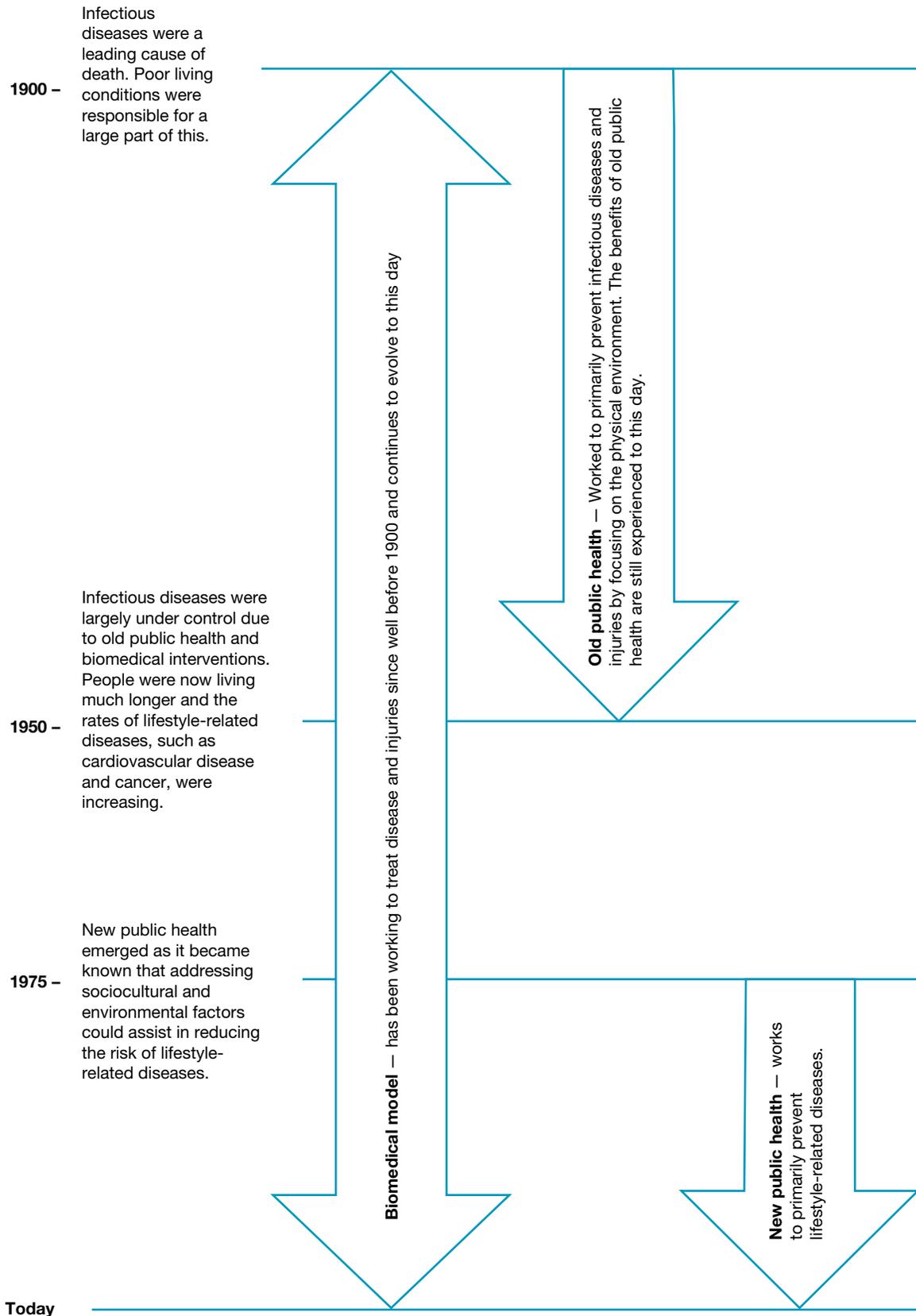
FIGURE 5.22 While people were aware that behaviours such as smoking could affect their health and wellbeing, many did not change their behaviour.



New public health an approach to health that expands the traditional focus on individual behaviour change to one that considers the ways in which physical, sociocultural and political environments impact on health. Also referred to as the social model of health.

Social model of health an approach that recognises improvements in health and wellbeing can only be achieved by directing effort towards addressing the physical, sociocultural and political environments of health that have an impact on individuals and population groups

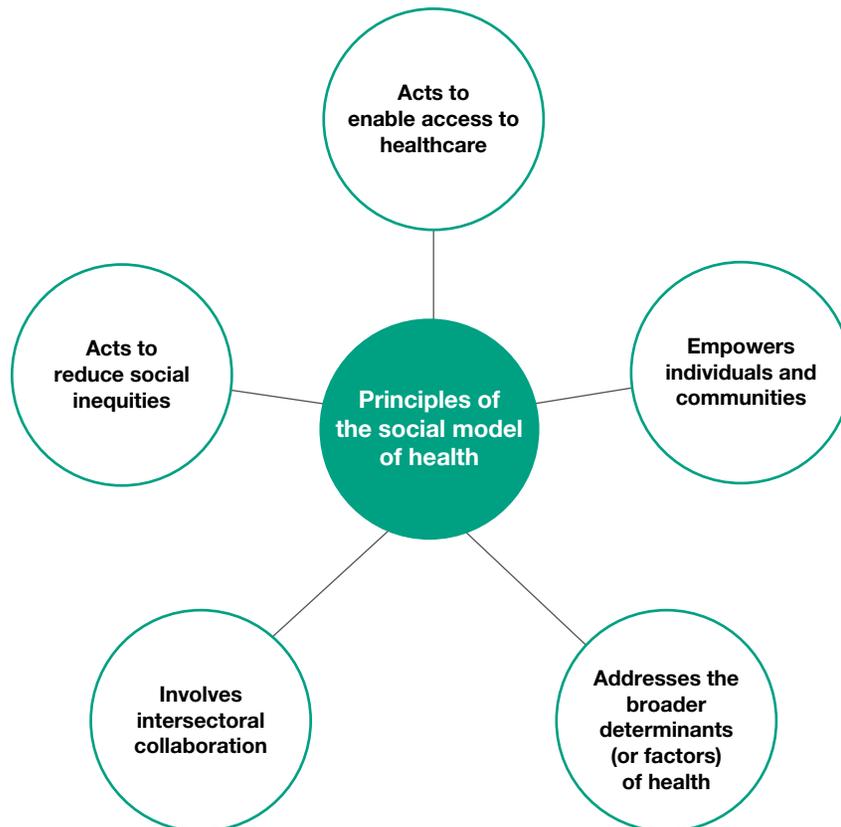
FIGURE 5.23 The role of the biomedical approach in diagnosing, treating and curing illness and disease has a long history and continues to evolve. As the patterns of disease and illness changed over time, we have seen the introduction of a range of public health approaches.



5.5.2 Principles of the social model of health

The social model of health encompasses five key principles (see **FIGURE 5.24**).

FIGURE 5.24 The social model of health encompasses five key principles.



Addresses the broader determinants (or factors) of health

Behavioural factors (also referred to as behavioural determinants), such as reducing tobacco smoking and eating a healthy diet, are an important part of improving health and wellbeing, but these factors are often themselves influenced by other, broader determinants such as gender, culture, race or ethnicity, socioeconomic status, geographical location and the physical environment. These broader factors or determinants of health and wellbeing have been shown to have strong relationships with health status and health and wellbeing and are increasingly becoming the focus of health promotion strategies. Addressing these determinants is a key aspect of the social model of health.

Involves intersectoral collaboration

There are many government and non-government organisations and stakeholders who have an influence over the sociocultural and environmental factors that influence health status and health and wellbeing. Some

of these groups include the public sector, such as government departments responsible for employment, education and finance, as well as the private sector, including service providers and manufacturers, all of whom sit outside the health system. The health system, while contributing significantly to health status and health and wellbeing, does not have as much influence over the sociocultural and physical environments. Therefore, by encouraging all interested and concerned groups both inside and outside the health sector to work together in **intersectoral collaboration** the sociocultural and physical environment factors can be more effectively addressed.

Acts to reduce social inequities

To reduce social inequities, the sociocultural factors that contribute to inequities in health status must be addressed. Many individuals and population groups are heavily influenced by sociocultural and environmental factors such as gender, culture, race, socioeconomic status, access to healthcare, social exclusion and the physical environment.

Efforts to improve health and wellbeing and health status must ensure that the factors above are taken into consideration.

Acts to enable access to healthcare

Healthcare has a significant influence on health and wellbeing and is a contributing factor in the health status experienced by most people. There are many sociocultural and environmental factors that can impact access to healthcare. Some of these include cultural and language barriers, economic and geographical factors, and education levels. Therefore, providing access to healthcare means it must be readily available to everyone, simple to understand and takes into consideration aspects such as culture, gender and ethnicity.

Empowers individuals and communities

Empowering individuals and communities means people can participate in decision-making about their health and wellbeing. Individuals are more likely to participate in healthy behaviours if they feel they have a sense of power and control over their situation. Empowering individuals and communities by building their health knowledge and skills means they are more able to make positive changes to their health and wellbeing.

5.5.3 Advantages and disadvantages of the social model of health

The social model of health sits alongside the biomedical approach and has become a key part of Australia's health system. This approach has many advantages, which are outlined in **TABLE 5.4**.

FIGURE 5.25 The risk factors associated with chronic disease are known, yet some people still choose to engage in risky behaviours. The social model of health takes a step back to see why people don't change their behaviours.



Intersectoral collaboration having groups from many sectors, such as government, health and the private sector, working together to achieve a common goal

TABLE 5.4 Advantages of the social model of health

Advantages of social model of health	Explanation
It promotes good health and wellbeing and assists in preventing diseases.	As the social model focuses on the broader determinants of health and wellbeing, it can prevent conditions from developing in the first place, therefore improving health and wellbeing and health status.
It takes a more holistic approach to health and wellbeing.	As the social model doesn't just focus on diseases that are present, it has the potential to promote the overall health and wellbeing of individuals by focusing on all dimensions.
It is less expensive than the biomedical approach.	Although health promotion programs can cost millions of dollars to implement, the investment is often significantly cheaper than treating conditions once symptoms arise.
It focuses on vulnerable population groups.	As it focuses on promoting equity, many disadvantaged groups are the target of health promotion programs, including Aboriginal and Torres Strait Islander peoples, those from low socioeconomic backgrounds and those living outside of Australia's major cities.
Education can be passed on from generation to generation.	The social model of health often uses education to enhance health and wellbeing. This knowledge can be passed on to future generations, promoting sustainable improvements in health status.
The responsibility for health and wellbeing is shared.	The social model of health makes health and wellbeing the responsibility of more than just the health sector so that the reasons behind poor health and wellbeing are more likely to be addressed.

Although the social model of health can be effective in promoting health and wellbeing, it still has a number of disadvantages.

TABLE 5.5 Disadvantages of the social model of health

Disadvantages of social model of health	Explanation
Not every illness or condition can be prevented.	The causes of some conditions, including many genetic conditions, can be very difficult to prevent.
It does not promote the development of technology and medical knowledge.	As it focuses on the broader determinants of health and wellbeing, it does not promote medical advancements.
It does not address the health and wellbeing concerns of individuals.	Those who are sick, for example, are not a specific focus of the social model of health, which can impact negatively on their health and wellbeing and the health status of the population.
Health promotion messages may be ignored.	The social model of health relies on public cooperation. If people choose to ignore the health messages provided, health and wellbeing may not improve.

5.5 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

5.5 Quick quiz



5.5 Exercise

5.5 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8

Test your knowledge

1. What is meant by new public health or the social model of health?
2. What led to the development of the new public health?
3. List the five principles of the social model of health and briefly describe each one.
4. Outline three advantages and three disadvantages of the social model of health.
5. For each of the examples of interventions for measles in the table below, decide whether it is an example of a biomedical approach or social model of health approach. Place a tick in the relevant column.

Example of intervention for measles	Biomedical (B) or Social (S)	
	B	S
All children enrolling in primary school must be immunised.		
Free measles vaccinations are provided for all children.		
Antibiotics are used to treat complications arising from measles.		
A GP is consulted to diagnose measles.		
Children with measles must be kept away from pre-school and school.		
Vaccination information is provided in many different languages.		

Apply your knowledge

6. Outline factors that may exist outside the control of individuals that could impact on health and wellbeing.
7. 'The biomedical and social models of health view health and wellbeing and illness from different perspectives.' What is meant by this?
8. Use the headings from the table below to provide two examples to summarise the role of the biomedical and social models of health in bringing about improvements in health and wellbeing in each of the five broad categories of diseases.

Category of disease	Contribution of the biomedical model of health	Contribution of the social model of health
Infectious and parasitic		
Cancers		
Cardiovascular diseases		
Respiratory diseases		
Injury and poisoning		

Question 1 (4 marks)

Source: VCE 2019, *Health and Human Development Exam*, Q.2; © VCAA

Bush Classrooms project

In Western Australia a bush clinic for Aboriginal men has been implemented with the aim of breaking down barriers to accessing hospitals and healthcare. It has brought together health experts from hospitals and mostly Noongar men into the bush to talk about mental and physical health.

Shame and a lack of confidence in the quality of treatment they receive can keep many Aboriginal men living in Western Australia's great southern region well away from modern health services.

A group of 25 men attended the Bush Classrooms project on culturally significant sites around Albany once a week for seven weeks. The program provided a comfortable, safe setting in which information could be shared with Aboriginal people.

The program combined hunting, fishing, dancing and music, with education and counselling opportunities for participants. The Bush Classrooms project is a collaboration between local support services, including Great Southern Aboriginal Health Services, the Albany Youth Support Association, Wanslea Family Services and Palmerston.

Source: adapted from Aaron Fernandes, 'Bush clinic for Indigenous men aims to break down barriers to hospital', ABC Great Southern, 14 April 2018 reproduced by permission of the Australian Broadcasting Corporation – Library Sales; Aaron Fernandes © 2018 ABC

- a. Identify** one principle of the social model of health and explain how it is reflected in the Bush Classrooms project. **2 marks**
- b. Provide** two examples of how the health status of Indigenous people compares to the health status of non-Indigenous people. **2 marks**

Question 2 (5 marks)

Source: VCE 2018, *Health and Human Development Exam*, Q.2; © VCAA

- a. What** is meant by 'new' public health? **2 marks**
- b. Analyse** one way in which 'new' public health may have contributed to improvements in Australia's life expectancy over time. **3 marks**

Question 3 (3 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.4.c; © VCAA

Consider the following information regarding a VicHealth project.

Victorian workplace mental wellbeing collaboration

VicHealth, SuperFriend and Workplace Victorian have formed a collaboration to help workplaces create positive and supportive cultures and environments that enable workers to be more engaged, positive and effective at work.

Victorian workers spend around one-third of their time in the workplace and the work environment can provide a positive sense of community and connection with others, as well as build self-esteem and provide recognition and rewards for individual workers and teams.

Approaches such as developing a positive leadership style, designing jobs for mental wellbeing, communicating effectively, recruitment and selection of employees, work-life demands, and supporting and developing employees are all important components of workplace mental wellbeing.

Source: © Victorian Health Promotion Foundation (VicHealth); source material available at <www.vichealth.vic.gov.au>

Identify one principle of the social model of health and explain how it is reflected in the project described above. ▶

Question 4 (4 marks)

Source: VCE 2013, *Health and Human Development, Section B, Q.2.b*; © VCAA

Men's Shed is an initiative of the Australian Men's Shed Association. It has been developed in many local communities across Australia, and it offers men an opportunity to socialise with other men in their community and learn new skills, such as woodworking and the restoration of old furniture.

The Australian Men's Shed Association is a not-for-profit organisation that is funded by the Federal Government. It is now the largest association in Australia focused on men's health and wellbeing.

Source: adapted from <http://www.mensshed.org>

Identify and explain two principles of the social model of health that are evident in the Men's Shed initiative.

Question 5 (2 marks)

Source: VCE 2011, *Health and Human Development Exam, Section B, Q.3.c.ii*; © VCAA

VicHealth's Food for All program is designed to increase regular access to, and consumption of, a variety of foods (particularly fruit and vegetables) by people living in disadvantaged communities.

VicHealth believes that local governments are best placed to develop relevant, integrated and long-standing strategies to tackle food insecurity. Funding is provided to local governments with 20% or more of their population living in disadvantaged neighbourhoods.

Local governments are encouraged to work with local charities and community-based health workers to improve the planning of those things that influence access to foods: ease of shopping close to where people live; easy ability to transport food to housing areas; providing culturally relevant education to help newly arrived families on how to recognise 'healthy' foods and how to prepare foods unfamiliar to them; and provide help in budgeting finances.

Source: VicHealth

Identify two principles of the social model of health that are relevant to the Food for All program.

More exam questions are available in your learnON title.

5.6 The Ottawa Charter for Health Promotion

► **KEY CONCEPT** Understanding the Ottawa Charter for Health Promotion

One of the responses to the social model of health came at the World Health Organization's first International Conference on Health Promotion held in 1986 in Ottawa, Canada (see **FIGURE 5.26**). At this meeting, the delegates had the task of coming up with guidelines that would help organisations and key stakeholders incorporate health promotion ideas into their strategies, policies and campaigns. Until then, there was no framework to guide them in the development of health promotion strategies. The resulting framework was known as the **Ottawa Charter for Health Promotion**, often referred to as the Ottawa Charter. The Ottawa Charter included three strategies and five action areas that underpin successful health promotion.

Ottawa Charter for Health Promotion an approach to health developed by the World Health Organization that aims to reduce inequalities in health. It reflects the social model of health and provides five action areas that can be used as a basis for improving health status, all of which are centred around three strategies for health promotion which are enabling, mediating and advocacy.

FIGURE 5.26 Ottawa, Canada, the host city of the First International Conference on Health Promotion in 1986



Health promotion, as defined by the World Health Organization, is the process of enabling people to increase control over, and to improve, their health. Health promotion therefore focuses on prevention rather than cure and uses the causes of disease as the starting point rather than diseases themselves.

5.6.1 Strategies for health promotion

The three strategies for health promotion as outlined in the Ottawa Charter are advocate, enable and mediate.

Advocate

Good health and wellbeing is a major resource individually, nationally and globally. Factors that influence health and wellbeing can either support or harm the level of health and wellbeing experienced. Health promotion aims to make these factors supportive through advocacy. Advocacy for health and wellbeing refers to actions designed to gain support from governments and societies that are necessary to improve health and wellbeing for everyone. These actions can include media campaigns (including social media), public speaking, conducting and publishing of research and public opinion, and lobbying governments, in which individuals or groups try to change the opinions of those responsible for making public policies and laws.

Enable

Health promotion focuses on achieving equity in health and wellbeing by working with those who experience poorer health status. Health promotion aims to reduce differences in health status and health and wellbeing between population groups by ensuring equal opportunities and resources are available to enable all people to achieve optimal health and wellbeing. This includes access to education, employment, adequate housing, nutritious food and healthcare by empowering people, not by merely providing handouts. People cannot achieve optimal health and wellbeing unless they can take control of factors that influence their lives. This applies equally to women and men, Indigenous and non-Indigenous people, those in low and high socioeconomic groups, and those living within or outside of Australia's major cities.

Mediate

The changes required to promote health and wellbeing include changes to funding, legislation and policies, and to the physical and sociocultural environment. Such changes will inevitably cause conflict between different individuals, groups, businesses and political parties. Mediating relates to helping these groups resolve such conflict and produce outcomes that promote health and wellbeing. Reducing speed limits is an example of a policy change that is not always supported by all members of the community. Working with groups who oppose such changes to ensure that lives are saved on the roads is an important role of social groups and health professionals.

CASE STUDY

The WHO's health promotion logo

This logo was created for the First International Conference on Health Promotion, held in Ottawa, Canada, in 1986. At that conference, the Ottawa Charter for Health Promotion was launched. Since then, the WHO has kept this symbol as the Health Promotion logo (HP logo), as it stands for the approach to health promotion outlined in the Ottawa Charter.

The logo represents a circle with three wings. It incorporates five key action areas in Health Promotion (build healthy public policy, create supportive environments for health, strengthen community action for health, develop personal skills, and re-orient health services) and three basic health promotion strategies (enable, mediate and advocate).

- a. The outside circle, in red, is representing the goal of 'Building Healthy Public Policy', therefore symbolising the need for policies to 'hold things together'. This circle encompasses the three wings, symbolising the need to address all five key action areas of health promotion identified in the Ottawa Charter.
- b. The round spot within the circle stands for the three basic strategies for health promotion, 'enable, mediate, and advocate', which are needed and apply to all health promotion action areas.
- c. The three wings represent (and contain the words of) the five key action areas for health promotion that were identified in the Ottawa Charter for Health Promotion. More specifically:
 - The upper wing that is breaking the circle represents that action is needed to 'strengthen community action' and to 'develop personal skills'. This wing is breaking the circle to symbolise that society and communities as well as individuals are constantly changing and, therefore, the policies have to constantly react and develop to reflect these changes: a 'Healthy Public Policy' is needed.
 - The middle wing on the right side represents that action is needed to 'create supportive environments for health'.
 - The bottom wing represents that action is needed to 'reorient health services' towards preventing diseases and promoting health.

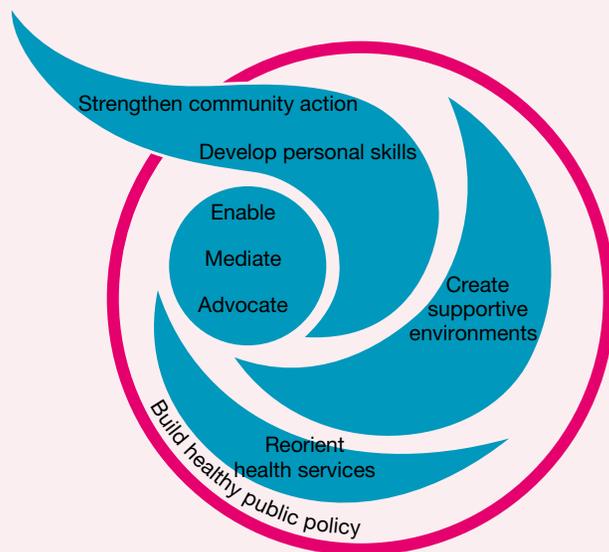
Overall, the logo visualises the idea that Health Promotion relies on a number of different strategies and actions being used together to improve health for all.

Source: <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/index4.html>

CASE STUDY REVIEW

1. Briefly explain the key features of the health promotion logo.
2.
 - a. Explain why one of the wings is breaking the circle.
 - b. Brainstorm examples of healthy public policies that have been developed (at a school, community, state or national level) due to changing societies, communities or individuals.

FIGURE 5.27 The Health Promotion logo was designed for use at the first Health Promotion Conference in Ottawa, Canada, in 1986.



5.6.2 Action areas of the Ottawa Charter

The five action areas of the Ottawa Charter are:

- build healthy public policy
- create supportive environments
- strengthen community action
- develop personal skills
- reorient health services.

TABLE 5.6 describes each of the action areas and provides an example to illustrate.

FIGURE 5.28 The five action areas of the Ottawa Charter of Health Promotion



TABLE 5.6 The five action areas of the Ottawa charter for health promotion, meaning and examples

Action area	Meaning	Examples
Build healthy public policy	This action area relates directly to the decisions made by government and organisations regarding laws and policies that make it more difficult for people to undertake unhealthy behaviours and seek to make healthier choices the easier choices.	<ul style="list-style-type: none"> • Removing the goods and services tax (GST) on unprocessed foods (which are healthier options than processed foods), which makes them cheaper to purchase • Increasing the tax on tobacco and alcoholic drinks, which aims to discourage unhealthy behaviour by making them more expensive. • Banning smoking in public places, which makes the environment healthy for everyone • Compulsory of wearing of seatbelts, which aims to directly influence behaviour

(continued)

TABLE 5.6 The five action areas of the Ottawa charter for health promotion, meanings and examples (*continued*)

Action area	Meaning	Examples
Create supportive environments	This action area recognises the impact that the broader determinants have on health and wellbeing and health status and aims to promote a healthy physical and sociocultural environment for all members of the community. A supportive environment is one that promotes health and wellbeing by being safe, stimulating, satisfying and enjoyable.	<ul style="list-style-type: none"> • The establishment of Quitline (a support service for smokers wanting to quit) • Providing a safe working environment • Providing shaded areas in school playgrounds and outdoor areas (reducing the rate of UV exposure) • Having a supportive family in which health promoting behaviours are practiced. • Investing in sustainable energy production (ensuring that future generations have access to a healthy environment) • Ensuring a smoke free environment
Strengthen community action	This action area focuses on building links between individuals and the community, and centres around the community working together to achieve a common goal. Giving the community a sense of ownership of a health and wellbeing strategy and working together increases the likelihood that it will be effective.	<ul style="list-style-type: none"> • The Central Australian Aboriginal Congress (CAAC) in Alice Springs is a health service provider run by Aboriginal people for Aboriginal people. The rates of participation in the program are high because people feel a connection. A range of Aboriginal people in central Australia work together to promote the health and wellbeing of their community. The service provides healthcare, education and advocacy • Immunisation strategy — this involves media, doctors, schools and parents working together to achieve higher immunisation rates for children
Develop personal skills	Education is the main aspect of this action area. Education refers to gaining health-related knowledge and skills that allow people to make informed decisions that may indirectly affect health and wellbeing (such as talking to people to resolve conflict rather than using violence or teaching people the skills they need to cook a healthy meal). Education can occur in many places, including school and work settings, families, and government and non-government organisations.	<ul style="list-style-type: none"> • A community health centre running cooking classes for the community • Quit campaign educating people about the harmful effects of smoking • Educating parents about the importance of putting sunscreen on their children when they are out in the sun
Reorient health services	<p>This action area refers to changing the health system so that it promotes health and wellbeing rather than just focusing on diagnosing and treating illness, as is the case with the biomedical model.</p> <p>Reorienting health services means addressing all factors that influence health and wellbeing, not just diseases. This requires a shift towards health promotion, which includes doctors taking on the role of educator.</p>	<ul style="list-style-type: none"> • Doctors focusing a discussion around healthy eating rather than just medication and surgery to reduce the impact of cardiovascular disease • Medical professionals recommending physical activity to prevent the development of damaging conditions such as type 2 diabetes • Providing funding for a community group to introduce a walking group • Providing funding to implement a health promotion campaign

FIGURE 5.29 Schools play an important part in developing personal skills.



THE OTTAWA CHARTER IN ACTION – MY HEALTH FOR LIFE

My health for life is a Queensland State government-funded initiative that is designed to help Queenslanders stay well and reduce their risk of developing conditions such as type 2 diabetes, heart disease, stroke, high cholesterol and high blood pressure. These diseases are major burdens of disease in Australia and as such, the program is reorienting health services by funding a program to prevent these diseases from occurring and assist people to remain in good health.

*My health
for life* 

It is targeted towards Queenslanders who are:

- Aged 45 years and over who have been identified as being at high risk of developing a chronic condition such as type 2 diabetes, heart disease or stroke; or
- Aged 18 years and over and of Aboriginal or Torres Strait Islander descent and have been identified as being at high risk of type 2 diabetes, heart disease or stroke; or
- Aged 18 years and over with pre-existing conditions – previous history of gestational diabetes, or have been diagnosed with pre-diabetes, high blood pressure or high cholesterol.

It is a free, six-month program where participants work with a health coach to achieve their health goals. In this way they are creating supportive environments. Participants can choose either small group sessions, or one-on-one phone coaching. With the support of a coach, participants develop a step-by-step action plan to achieve their health goals. Participants have six appointments with their health coach over six months. The first session is a one-on-one appointment to gain an understanding of the participant's needs and goals. Sessions are then run fortnightly with a 12-week break between sessions five and six where participants put into practice what they've learnt.

Participants are supported by a range of resources available on an online portal, peer support via online platforms, a manual and workbook to track progress, emails after each session with a review of what was covered and a reminder about at-home activities. At the end of the program, participants can move into an online maintenance program that provides them with access to tools and resources for another six months. Participants can do the program again if they would like further support.

The program strengthens community action as it is delivered by an alliance of health organisations. The *My health for life* community is diverse and includes local health professionals, a range of cultural groups and communities, sporting groups, councils and workplaces across Queensland.

The program develops personal skills as participants learn how to break goals into small achievable steps, learn how to incorporate physical activity into everyday movement, learn how to make healthy food choices and create strategies to overcome hurdles when they arise. They develop an understanding of their personal risk of developing health conditions and how to make healthier choices a part of everyday life.

Source: Adapted from: <https://www.myhealthforlife.com.au/>

CASE STUDY REVIEW

1. What are the aims of the *My health for life* program?
2. Why is this program important?
3. Which action area of the Ottawa Charter is not represented in the program?
4. Provide a summary of points that shows how the *My health for life* program reflects four of the action areas of the Ottawa Charter for Health Promotion.

on Resources

 **Teacher-led video** Ottawa Charter (tlvd-0262)

5.6 Exercises

learn **on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

5.6 Quick quiz

on

5.6 Exercise

5.6 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 4

■ LEVEL 2

3, 5

■ LEVEL 3

6, 7

Test your knowledge

1. Define health promotion according to the Ottawa Charter.
2. Give reasons for the development of the Ottawa Charter.
3. Identify the three strategies for health promotion outlined in the Ottawa Charter and discuss why they are important for improving health and wellbeing.
4. What are the five action areas of the Ottawa Charter? Briefly explain each one.

Apply your knowledge

5. For each of the following examples tick the most appropriate column to indicate whether it represents build healthy public policy, create supportive environments, strengthen community action, develop personal skills or reorient health services.

Example	Build healthy public policy	Create supportive environments	Strengthen community action	Develop personal skills	Reorient health services
The new nutrition facts label will now have to include the amount of added sugar per serving.					
A health promotion campaign is a joint initiative between the Heart Foundation, Cancer Council, local sporting organisations and local community health workers.					
Funding is provided to implement a program designed to recognise early signs of mental illness and encourage people to seek help as soon as possible.					
Older residents in an aged care facility are taught the importance of exercise and how to exercise safely to minimise injury.					
An Aboriginal health service employs Aboriginal health workers who know and understand the needs of the local community.					
A group of workers having to work from home are provided with a series of cooking classes delivered using an online platform.					

6. Discuss how the Ottawa Charter reflects the principles of the social model of health.
7. Explain how two or more action areas of the Ottawa Charter could be used to reduce the incidence of:
- skin cancer
 - respiratory diseases.

Question 1 (6 marks)

Source: VCE 2018, *Health and Human Development Exam*, Q.11.a; © VCAA

The AMA [Australian Medical Association] wants the Government to use tax policy to force up the prices of sugar-sweetened drinks to change behavior...

For the AMA, taxing them is far from the single solution to the obesity or diabetes epidemics ...

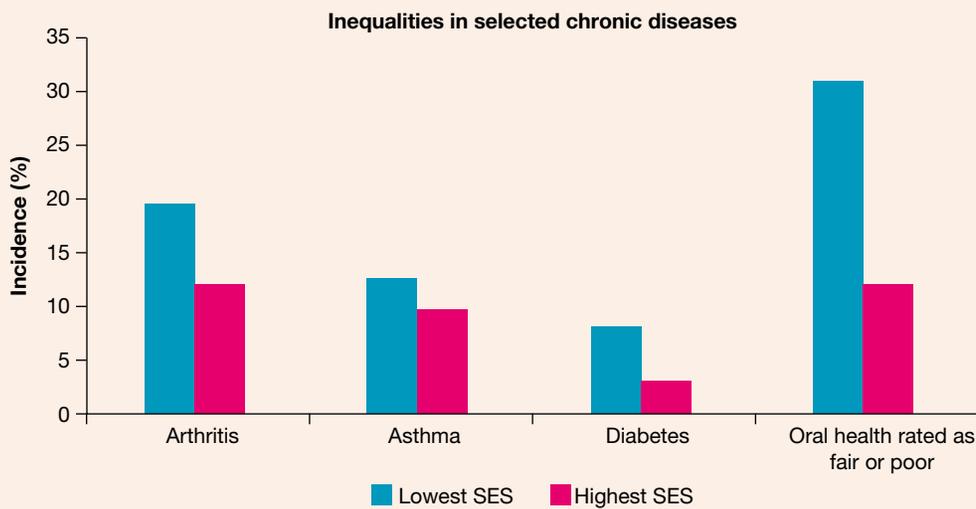
Source: Emily Clark, 'The AMA wants sugar-sweetened drinks taxed, but will it happen?', ABC News, 7 January 2018, <www.abc.net.au>

Using your knowledge of effective health promotion, including the Ottawa Charter for Health Promotion, **explain** why taxing soft drinks is not the only solution to addressing the obesity epidemic.

Question 2 (4 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.7.c; © VCAA

The following graph shows the incidence of selected chronic diseases by socio-economic status (SES) in Australia in 2014–2015.



Select one chronic disease from the graph. **Explain** how two action areas of the Ottawa Charter for Health Promotion could be used to address this chronic disease

Question 3 (3 marks)

Source: VCE 2014, *Health and Human Development Exam*, Q.10; © VCAA

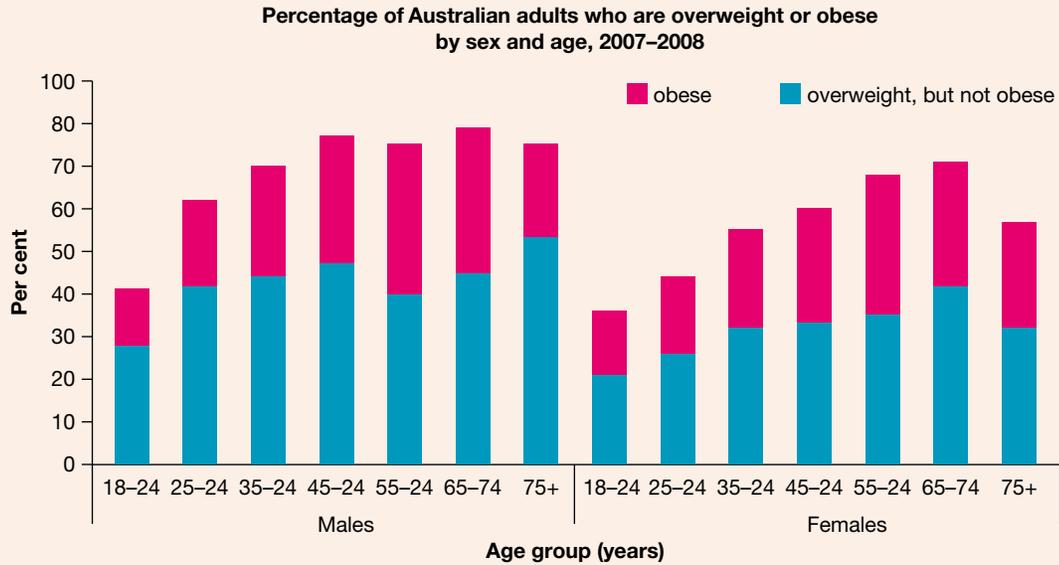
Local primary schools will receive support to participate in 'walk to school' opportunities ... Monash Council has received \$10,000 from VicHealth to implement the Walk to School program ... The program is designed to raise awareness of the physical, environmental and social benefits of active transport, and to encourage school children to walk to and from school more often. Aside from supporting schools, Council will use the funding to develop a Monash walking map and online portal.

Source: *Active Monash*, issue 69, October 2013

- a. i. **Identify** two priority action areas of the Ottawa Charter for Health Promotion. **2 marks**
- ii. Select one of the above priority action areas and briefly **outline** how it is reflected in the Walk to School program. **1 mark**

Question 4 (4 marks)

Source: VCE 2012, Health and Human Development Exam, Section B, Q.2.c; © VCAA



Use two priority areas identified in the Ottawa Charter for Health Promotion to **describe** how the levels of obesity in Australia could be reduced.

Question 5 (4 marks)

Source: VCE 2011, Health and Human Development Exam, Section B, Q.8.b; © VCAA

The Ottawa Charter for Health Promotion is an approach to health promotion that reflects the social model of health. It identifies three strategies as well as five priority areas that are important for promoting health.

The three strategies are:

- enabling
- mediating
- advocacy.

Select two of the three strategies listed above and **explain** how each of these is important for health promotion.

More exam questions are available in your learnON title.

5.7 Improving health status using the social and biomedical approaches to health

KEY CONCEPT Understanding the relationship between the social and biomedical approaches to health in bringing about improvements in health status

As we have seen, significant advances have been made in Australia's health status over the last century, and the patterns of death and disease have also changed. As disease patterns change, so do appropriate strategies for intervention. Understanding the history of disease and illness, and the interventions put in place, helps develop an understanding of the health and wellbeing problems of communities in the twenty-first century and how to manage them. The biomedical and social models of health view health and wellbeing and illness from

different perspectives. As you saw in the previous subtopics, there are advantages and disadvantages with each of these approaches to health. However, there is now an understanding of the importance of both approaches in bringing about improvements in health status and health and wellbeing.

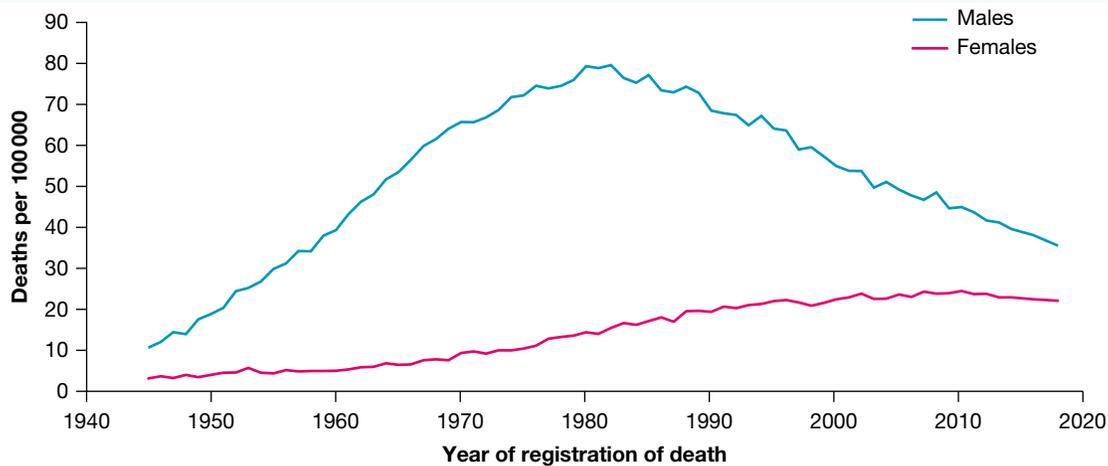
Understanding the strengths and limitations of these approaches can be seen by looking at changes over time in the mortality associated with lung cancer.

5.7.1 Lung cancer

Early in the twentieth century, lung cancer was thought to be rare, and deaths from lung cancer as a specific type of cancer were not measured until 1945. **FIGURE 5.30** shows the death rates for lung cancer since 1945. For males there was a rapid increase in deaths, peaking in 1980. Tobacco smoking accounted for most lung cancer deaths for males and females, and the decline in deaths reflects changes in smoking rates brought about by a range of health promotion strategies and public health policies (the social model of health), and improved technology in terms of better diagnosis and more effective treatments (the biomedical approach to health).

int-8501

FIGURE 5.30 Age-standardised death rates for lung cancer, by sex and year, 1945–2018



Source: AIHW, 2020, GRIM books.

Health promotion and the social model of health

Anti-smoking health promotion campaigns were first introduced in the early 1970s when there was a growing understanding of the relationship between smoking and many forms of cancer, particularly lung cancer. It followed the release in 1964 of the US Surgeon General's report on smoking, which linked the habit to disease and death and urged the government to take action.

In line with the understanding that sociocultural and environmental factors can impact health and wellbeing, state and Commonwealth governments introduced a range of population-based approaches designed to promote health and wellbeing, reduce the impact of passive smoking on others, and encourage people to quit or not take up smoking at all. These approaches reflect the social model of health and included comprehensive anti-smoking media campaigns and policies that made tobacco products expensive. Tobacco products became highly regulated, were not allowed to be advertised, had to be sold in plain packaging and kept out of consumers' sight in retail outlets. The introduction of health warnings on cigarette packets reflects the principles of the social model of health as it is empowering individuals and communities by providing them with the knowledge of the dangers of smoking. Banning smoking in pubs and clubs is an example of intersectoral collaboration. These population-wide strategies helped reduce the uptake of smoking and encouraged smokers to quit (see **FIGURE 5.31**).

FIGURE 5.31 Examples of public health approaches designed to reduce smoking behaviour

- 1973 — The first health warnings on cigarette packets are introduced in Australia.
- 1976 — Tobacco advertising is banned on radio and television in Australia.
- 1985 — Quit is established and anti-smoking commercials appear on Australian television.
- 1987 — The Commonwealth Government bans smoking on domestic air flights.
- 1990 — The Commonwealth Government bans tobacco advertising in newspapers and magazines.
- 1995 — Most tobacco sponsorship is phased out.
- 1996 — Billboards, outdoor and illuminated signs advertising cigarettes are banned.
- 2006 — Graphic anti-smoking advertisements go to air.
- 2010 — Smoking in pubs and clubs is banned and tobacco taxes are increased by 25 per cent.
 - All states and territories (except NT) ban smoking in cars carrying children and point-of-sale displays in retail outlets selling tobacco, and plain packaging becomes mandatory for all tobacco products. It becomes an offence for any person to publish tobacco advertising on the internet or other electronic media.
- 2013 — First 12.5 per cent tobacco excise increase on 1 December.
- 2017 — Additional four annual 12.5 per cent tobacco excise (tax) increases implemented on 1 September each year from 2017 to 2020 inclusive.

Source: Adapted from 'Key events in anti-tobacco campaign in Australia', ABC News online, 11 January 2014 and Department of Health: Tobacco control timeline <http://www.health.gov.au/internet/publications/publishing.nsf/Content/tobacco-control-toc-timeline>

Decline in smoking rates

The social model of health has been very effective in reducing the prevalence of smoking and reducing the harm associated with passive smoking. Data from the National Drug Strategy Household Survey estimated that 11.6 per cent of adults smoked daily in 2019. This daily smoking rate has declined from an estimated 12.8 per cent in 2016 and has halved since 1991 (25 per cent). While it is predicted that the prevalence of smoking will continue to decline, there are still many Australians who continue to smoke and put themselves at risk of lung cancer and other smoking-related diseases.

Biomedical approach to lung cancer

Although death rates from lung cancer have declined, cancer is still a major cause of death and disability in Australia, despite a long history of health promotion initiatives. It is therefore important that those who develop lung cancer are given access to medical care to ensure early diagnosis of the disease, and then provided with medical treatment if necessary. The biomedical approach to health is therefore also important if we are to improve individuals' health and wellbeing and health status.

Improvements in our understanding of the disease and in medical technology have increased the chance of an individual surviving for five years after their cancer diagnosis. In 1983–87, the five-year survival rate was 8 per cent. This more than doubled to 18 per cent in 2018.

These improvements are largely due to developments in medical technology and the biomedical approach to health. More effective and earlier diagnosis of lung cancer is now possible along with a range of treatments that increase an individual's likelihood of surviving the disease.

Diagnosis and treatment of lung cancer

Lung cancer is diagnosed using a range of tests and procedures that include:

- chest X-rays
- sputum cytology (examining phlegm under a microscope)
- bronchoscopy (insertion of a flexible tube through the mouth or nose and into the lungs)
- fine needle aspiration, which removes a small sample of tissue from the lungs through the chest wall

- CT scans
- PET scans
- bone scans.

Once diagnosed, a range of treatments can take place. These include surgery to remove the affected parts of the lung, radiotherapy and chemotherapy.

Until recently, there was little evidence to suggest that those with terminal lung cancer could be cured, but new technology is being trialled that may give those with advanced cancer the chance to be cured. Improvements in technology have also enabled sufferers of terminal lung cancer to have more effective **palliative care** to manage the symptoms of the disease and better manage the pain.

It is evident that both the biomedical and social models of health, with a focus on bringing about behaviour change and improving diagnosis and treatment services, have contributed to reductions in death rates from lung cancer and improvements in health status.

CT scans computed tomography scan, which is a specialised x-ray taken from many different angles to build a three-dimensional picture of the body

PET scan involves having an injection of a small amount of radioactive material, which enables a scanner to build up a picture of the body

Palliative care an approach designed to improve the quality of life of patients with a life-threatening illness with little or no prospect of a cure. This is achieved through the prevention and relief of suffering and the treatment of pain.

5.7 Activities

1. Access the **Personal consequence ads** and **Breakthrough in lung cancer treatment** weblinks in the Resources tab and then complete the **Smoking** worksheet.
2. Select one other example of a disease and research examples of how the biomedical and social models of health have contributed to improvements in health status over time.

on Resources

-  **Digital document** Smoking worksheet (doc-32201)
-  **Weblinks** Personal consequence ads
Breakthrough in lung cancer treatment

5.7 Exercises

learn **on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

5.7 Quick quiz

on

5.7 Exercise

5.7 Exam questions

Select your pathway

■ LEVEL 1
2, 3, 4, 5

■ LEVEL 2
1, 6, 7, 8, 9

■ LEVEL 3
10, 11

Test your knowledge

1. Why is it important to understand the strengths and limitations of the biomedical and social models of health?
2. When did deaths from lung cancer as a specific type of cancer start being recorded?
3. What was responsible for the increase in lung cancer deaths for males between 1945 and 1980?
4. What factors contributed to the decrease in lung cancer deaths for males from 1980 to the present?
5. When were anti-smoking campaigns first introduced in Australia and why?
6. To what extent was the social model of health effective in reducing the prevalence of smoking?

- Why is the biomedical model of health important if we are to further reduce death and disability from lung cancer?
- Briefly outline how the biomedical model of health can help reduce the level of death and disability from lung cancer.

Apply your knowledge

- Use the data in **FIGURE 5.30** to identify two trends in death rates for lung cancer over time and explain one reason for each of the trends identified.
- Select two of the public health approaches listed in **FIGURE 5.31** and discuss how they reflect the social model of health.
- Draw a diagram that shows examples of how the biomedical and social models of health have brought about improvements in lung cancer deaths over time.

5.7 Quick quiz



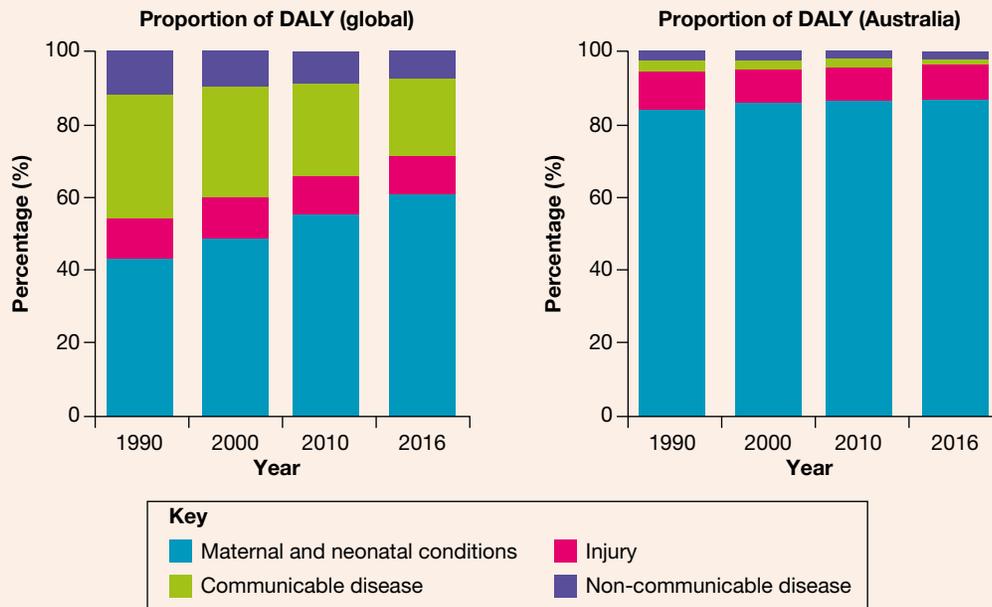
5.7 Exercise

5.7 Exam questions

Question 1 (4 marks)

Source: VCE 2019, *Health and Human Development Exam*, Q.8; © VCAA

Burden of communicable disease, injury, maternal and neonatal conditions and non-communicable disease, globally and in Australia, 1990, 2000, 2010 and 2016



Source: Australian Institute of Health and Welfare (AIHW), *Australia's health 2018*, 'Australia's Health' series no. 16, AUS 221, AIHW, Canberra, 2018, p. 95; GBD Collaborative Network 2017, Table S3.3.1

Using the graph 'Proportion of DALY (global)', select one burden of disease that has decreased in proportion from 1990 to 2016. **Explain** how the biomedical and social models of health may have contributed to this reduction.

Question 2 (4 marks)

Source: VCE 2016, *Health and Human Development Exam*, Q.8.d; © VCAA

Explain how both the biomedical and social models of health could be used to reduce the burden of disease associated with cardiovascular disease.

Question 3 (4 marks)

Source: VCE 2014, Health and Human Development Exam, Q.13; © VCAA

Complete the following table by **outlining** one advantage and one disadvantage of the biomedical model of health and the social model of health.

	Biomedical model of health	Social model of health
Advantage		
Disadvantage		

Question 4 (2 marks)

Source: VCE 2013, Health and Human Development, Section A, Q.6; © VCAA

Explain one difference between the biomedical model of health and the social model of health.

Question 5 (3 marks)

Describe the relationship between the biomedical and social models of health in addressing breast cancer.

More exam questions are available in your learnON title.

5.8 KEY SKILLS

5.8.1 Analyse data that show improvements in health over time and draw conclusions about reasons for improvements



tlvd-1914

KEY SKILLS Analyse data that show improvements in health over time and draw conclusions about reasons for improvements

Tell me

Interpreting information from tables and graphs is the focus of this skill. When given information in a table or graph, it is important to be able to interpret what the data is showing in relation to changes in health status over time and then think about the possible reasons that might have resulted in these changes.

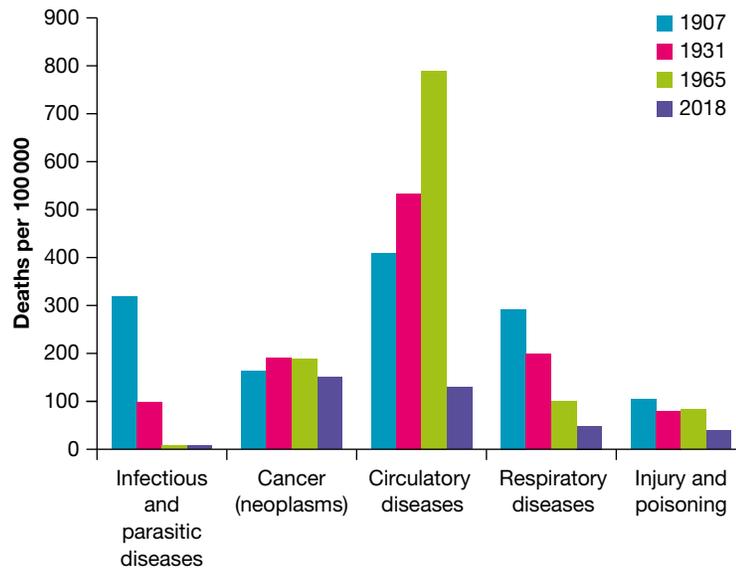
To do this, you will need to understand the major reasons for the improvements in health status over time and relate these to the data provided.

The reasons that have been discussed throughout this topic are:

- policies and actions as part of the old public health that took place early in the twentieth century that focused on improving aspects of the physical environment such as providing safe water to drink, sewage facilities and better sanitation, improved nutrition, better housing conditions and safer work conditions
- the discovery of vaccines and the mass immunisation programs that were put in place after 1930
- government actions such as quarantine to protect Australia from outbreaks of diseases in other countries
- improved medical technology, which led to better diagnosis, treatment and cure of diseases
- the introduction of health promotion campaigns
- the development of the new public health or the social model of health.

FIGURE 5.32 shows changes in the patterns of diseases by the five broad categories from 1907 to 2018. By using this data, you can identify improvements in health status over time and then apply the relevant reasons that would explain these changes.

FIGURE 5.32 Age-standardised death rates over time



Source: Adapted from AIHW, 2020, GRIM books.

Show me

A suggested approach to this could be:

The patterns of death and illness in Australia have changed since 1900. Age-standardised death rates in all five broad categories of diseases are lower in 2018 than they were in 1907. The four categories where significant improvements have been made are infectious and parasitic diseases, cardiovascular diseases, respiratory diseases, and injury and poisonings.¹

Infectious and parasitic diseases and respiratory diseases have shown the greatest reduction across this time.² This is due to policies and actions taken during the first part of the twentieth century that were known as the 'old public health'. The focus of these actions was to bring about changes in the environment. With a new understanding of the relationship between bacteria and disease, the government set about improving living conditions and making sure that people had safe water to drink; better sanitation and sewage systems were put in place. This brought about huge reductions in mortality from parasitic diseases, such as diarrhoea and cholera, particularly in children. Policies were introduced that brought about improved housing conditions that led to a reduction in infectious diseases such as pneumonia and influenza,³ despite a spike in deaths in 1919 from the Spanish influenza epidemic. Infectious and parasitic diseases were further reduced with the introduction of vaccines that occurred in the early 1930s. Mass immunisation campaigns across the next 30 years brought about reductions in diseases such as diphtheria, pertussis, poliomyelitis, tetanus, measles and tuberculosis.⁴ The discovery of antibiotics after World War II contributed further to a reduction in deaths from diseases such as pneumonia and complications due to infection.⁵

1 This shows an understanding that the patterns of disease over time have changed and relates the changes to the five broad categories shown on the graph.

2 Selecting two of the categories of disease that have shown the greatest reduction demonstrates an understanding of the data.

3 An understanding of the actions taken as part of the 'old public health' are outlined and the specific link to infectious and parasitic diseases and respiratory diseases is provided.

4 The discovery of vaccines as a reason for the changes is identified and linked clearly to the types of diseases that were reduced.

5 The discovery of antibiotics and the impact on diseases is clearly made.

Cardiovascular diseases steadily increased from 1907 to 1931 and reached their peak in 1965. Since then they have steadily declined.⁶ In 1965 there was an understanding that most deaths due to cardiovascular diseases were lifestyle related and, if people were educated on the causes of these diseases, particularly cigarette smoking, physical inactivity and a poor diet, they would take the necessary action to change their behaviour. This belief led to the introduction of a range of health promotion campaigns focused on changing individual behaviours.⁷ This also corresponded with improved medical technology that enabled medical professionals to better diagnose cardiovascular diseases, prescribe medication to manage these diseases, and carry out more advanced medical treatment and curative surgery.⁸ While this contributed to a decline in these diseases, there was a growing awareness that changing behaviour is difficult, and there are many factors that lie outside the control of individuals that make these changes difficult to achieve. This led to the introduction of new public health or the social model of health. This shifted the focus from individual behaviour change to one that focused more on the physical, sociocultural and political environments that influence health and wellbeing. In response to this, the Ottawa Charter provided a framework that set out how the social model of health could be implemented.⁹ Along with ever improving medical technology, these approaches have resulted in reductions in deaths from cardiovascular diseases since 1965.

6 Another category of disease (cardiovascular diseases) is identified along with an outline of how the pattern of death has changed over time.

7 The role of health promotion is outlined, along with the link to the changes in the pattern of death and illness.

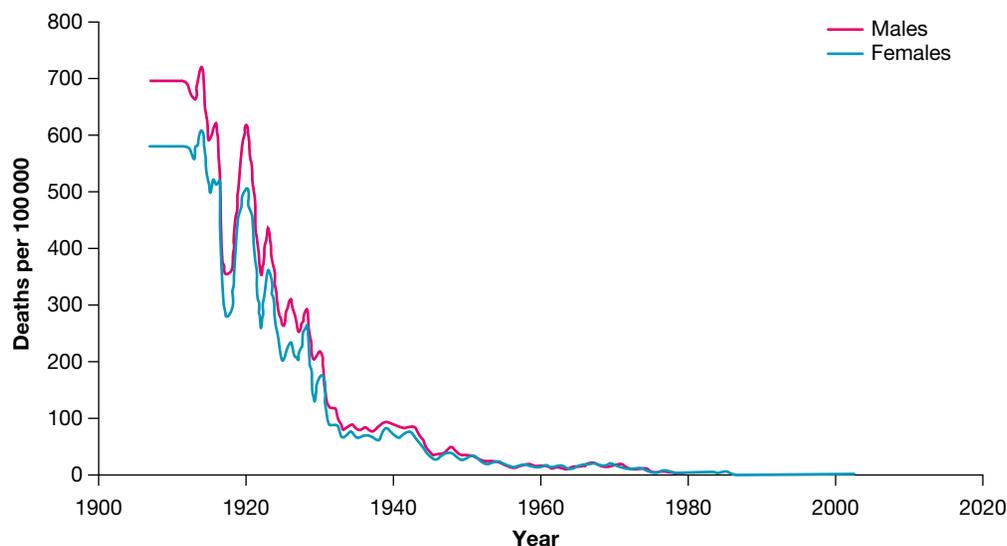
8 The role of medical technology and its link to the reduction in cardiovascular diseases is outlined clearly.

9 The role of the social model of health and the Ottawa Charter is identified as another reason for the decline in cardiovascular diseases.

Practise the key skill

Refer to **FIGURE 5.33**, which shows deaths per 100 000 for diarrhoea in children aged 0–4 years, from 1907 to 2003.

FIGURE 5.33 Death rates for diarrhoea, males and females, 0–4 years, 1907–2003



Source: AIHW 2005, *Mortality over the twentieth century in Australia: trends and patterns in major causes of death*, p. 48.

1. Using data from the graph, outline the changes in deaths from diarrhoea from 1907 to 2003.
2. Outline two actions implemented by the government as part of the old public health and explain how these might have contributed to the reduction in deaths from diarrhoea.
3. What reasons could account for the spike in diarrhoea deaths in 1919 to 1920?

5.8.2 Analyse the strengths and limitations of biomedical and social models of health in bringing about improvements in health status

tlvd-1915

KEY SKILLS Analyse the strengths and limitations of biomedical and social models of health in bringing about improvements in health status

Tell me

To analyse the strengths and limitations of the biomedical and social models of health in bringing about improvements in health status, it is important you understand both of these models. To do this, you should be able to:

- describe each model in terms of what it focuses on and its key features
- explain the advantages of each model
- explain the disadvantages of each model
- give examples of how each model has contributed to improvements in health status and specific health and wellbeing concerns over time.

Using the five broad categories of diseases or conditions identified in this topic is an effective way to analyse the strengths and weaknesses of each model in bringing about improvements in health status.

Show me

One example could be injury and poisoning:

Deaths from injury and poisoning include those from motor vehicle and other accidents, suicide, assault, poisoning, drowning, burns and falls, and complications from medical and surgical care.¹⁰

Over the last 100 years, death rates for injury and poisoning more than halved, with the most rapid decline occurring since the 1970s.¹¹

Both the biomedical and social models of health have contributed to a reduction in deaths over time.¹²

The biomedical model of health has many advantages. The discovery of antibiotics following World War II meant that infection that frequently occurred following an accident or injury was able to be cured, reducing deaths from accidents. The development of X-rays and scans resulted in better diagnosis of injuries and therefore more effective treatment. Improved anaesthetics have also enabled more complex surgery to take place, increasing the likelihood of survival from accidents and injuries, all of which has helped increase life expectancy and improved people's quality of life.¹³ However, while there are many advantages associated with the biomedical approach to health, there are also many disadvantages. The dependence upon technology contributes to the high costs to the healthcare system. Specialist medical personnel are required to address the individual needs of patients who attend hospitals with potentially life-threatening injuries. In some cases, the nature of the injury, especially spinal cord injuries, cannot be cured. In the case of drownings, the biomedical approach has limited impact unless resuscitation is possible.¹⁴

The social model of health has played an important role in reducing death rates from injury and poisoning over time. Deaths from motor vehicle crashes were at their highest in 1970 and then declined steadily. This decline reflected the range of public health actions that were introduced by the government, commencing with the introduction of the compulsory wearing of seatbelts in 1970,

10 This shows an understanding of what is included under the category of injury and poisoning.

11 The trend — death rates over time — is clearly stated.

12 Identifies that both the biomedical and social models of health have contributed to reductions in death rates from injury and poisoning.

13 Identifies the advantages of the biomedical approach to health by applying it to injury and poisoning.

14 Outlines the corresponding disadvantages of the biomedical model in relation to injury and poisoning.

drink-driving restrictions, lowering of the speed limits, better roads, and improved car design and safety. There were also a series of mass media campaigns raising awareness of the dangers associated with speeding or driving while under the influence of drugs or alcohol, and the importance of being alert by having adequate sleep and rest breaks.

Improved workplace safety resulting from the introduction of occupational health and safety laws has contributed to fewer workplace accidents and deaths. Poisonings have declined due to better labelling of toxic substances, child-proof lids for medicines and household chemicals and increased health awareness. Deaths due to drownings have also been decreased through the introduction of compulsory pool fences and health promotion campaigns. The social model of health also has many other advantages. It is targeted towards the whole population and aims to bring about equity in health and wellbeing by bringing about changes in the physical, sociocultural and political environments so that healthy choices become the easy choices. The social model of health tends to be comparatively less expensive than the biomedical approach¹⁵ although its success is dependent upon careful planning and research to ensure that the health promotion messages are not ignored. In addition, not all injuries and poisonings can be prevented, and the needs of those who are injured are not addressed through the social model of health.¹⁶

15 Outlines the advantages of the social model of health and applies them to injury and poisoning.

16 Outlines the relevant disadvantages of the social model of health.

Practise the key skill

Read the following paragraph about heart disease.

Medicine can only do so much. A heart is permanently damaged by heart disease — you can't take away the damage inflicted. Taking medication and receiving treatment can reduce the impact of heart disease on a woman's life, but they don't get rid of it. That is why it's important for women to be proactive. 'By taking steps to prevent heart disease you're not only improving your heart but you're also improving your general health.'

Source: Adapted from King, R. 2016, 'Female heart disease: the most serious health threat facing Australian women', *The Daily Telegraph*, 28 May.

4. Discuss the relationship between the biomedical and social models of health described in this paragraph.
 5. Outline two ways in which the biomedical approach can minimise the impact of heart disease and two ways in which heart disease can be prevented through the social model of health.
-

5.9 Review

5.9.1 Topic summary

5.2 Changes in Australia's health status over time

- There have been considerable changes in life expectancy over time, with improvements in the mortality rates of children being a major contributor to this.
- Between 1961 and 1972, death rates from cardiovascular diseases reached their peak and other lifestyle diseases were becoming more prevalent, and this affected gains in life expectancy.
- The age profile of the population has changed over time due to increased life expectancy and lower fertility rates, meaning fewer children are being born and the population is getting older.
- Overall death rates have also decreased, with a 73 per cent reduction for males and 77 per cent reduction for females between 1907 and 2018.
- Over the last 100 years the patterns of mortality have also changed.
- Diseases that accounted for 60 per cent of all deaths at the start of the twentieth century and 83 per cent of all deaths at the end of the century can be grouped into five main categories: cardiovascular diseases, cancers or neoplasms, respiratory diseases, infectious and parasitic diseases, and injury and poisoning.
- Infectious and parasitic diseases contributed to 13 per cent of all deaths in the first part of the twentieth century, largely due to the living conditions at the time. Water and food supplies were often contaminated, rubbish littered the streets, sanitation was poor and there were no sewage facilities.
- Cancer death rates increased throughout the twentieth century, reaching a peak in the mid-1980s due to the uptake in cigarette smoking in the earlier part of the century. Declining rates of smoking during the 1970s saw a reduction in deaths from cancer between 2000 and 2018.
- Cardiovascular diseases have been a major cause of death over the last 100 years. Death rates from cardiovascular diseases increased throughout the twentieth century until reaching their peak in the mid-1960s, after which time there has been a steady decline. These diseases are still a major cause of death in Australia.
- Death rates from respiratory diseases fell dramatically over the last 100 years, and by 2000 were less than 10 per cent of 1907 levels.
- Deaths from injury and poisoning include those from motor vehicle and other accidents, suicide, assault, poisoning, drowning, burns and falls, and complications from medical and surgical care.
- Death rates from injury and poisoning have more than halved over the last 100 years, mainly due to reductions in motor vehicle deaths.
- Work-related accidents due to poor working conditions were a major cause of death from injury during the first half of the twentieth century.

5.3 Policy and practice relating to the 'old public health' and Australia's health status

- Public health refers to the ways in which governments monitor, regulate and promote health status and prevent illness.
- The old public health was concerned with the effect of the physical environment on health and wellbeing. It focused on measures such as providing safe water to drink, sewage facilities and better sanitation, improved nutrition, better housing conditions and safer work conditions. This led to a decrease in infectious and respiratory diseases.
- With the discovery of vaccines, many infectious diseases, such as polio, diphtheria, measles, tuberculosis, tetanus and smallpox, could be prevented. This contributed to significant reductions in infectious diseases.
- Following an outbreak of the bubonic plague, quarantine laws were introduced to protect Australians from diseases that could be transmitted from other countries.
- In 1921 the establishment of the Commonwealth Department of Health enabled health research and data collection to take place.
- Infant welfare centres became the responsibility of the Commonwealth and State Governments and contributed to improvements in infant mortality.

- As the patterns of disease and illness started to change with the emergence of lifestyle diseases, the first health promotion activities were introduced. Their aim was to educate people to adopt health promoting behaviours.

5.4 The biomedical approach to health and its contribution to improving Australia's health status

- The biomedical approach to health focuses on diseases and ways of diagnosing, treating and curing disease.
- It has many advantages, such as improving technology and research, effectively treating common problems, extending life expectancy and improving quality of life.
- It has contributed to improvements in Australia's health status over time and is an important component of the healthcare system.
- The biomedical approach to health also has a number of disadvantages or limitations such as its high costs, encouraging a 'quick-fix approach' rather than looking at causes, being unable to treat all conditions although they may have been preventable and finally a lack of affordability for all individuals.

5.5 Development of new public health and the social model of health

- New public health or the social model of health emerged in the 1980s when it became clear that educating people about health promoting behaviours did not always lead to behaviour change. It recognised that there are many factors affecting health and wellbeing that lie outside the control of individuals.
- The social model of health focuses on the physical, sociocultural and political environments that impact on health and wellbeing.
- The principles of the social model of health are to:
 - address the broader determinants of health
 - involve intersectoral collaboration
 - act to reduce inequities
 - act to enable access to healthcare
 - empower individuals and communities.

5.6 The Ottawa Charter for Health Promotion

- The Ottawa Charter provides a framework for the application of the social model of health and includes five action areas:
 - build healthy public policy
 - create supportive environments
 - strengthen community action
 - develop personal skills
 - reorient health services.
- The three strategies for health promotion are advocate, enable and mediate.

5.7 Improving health status using the social and biomedical approaches to health

- There are many advantages and disadvantages of both the social and biomedical models of health but both approaches are important in bringing about improvements in health and wellbeing.

Resources

 **Digital document** Summary (doc-36140)

5.9.2 Key terms

Antenatal relates to the medical care given to pregnant women before their babies are born

Biomedical approach to health focuses on the physical or biological aspects of disease and illness. It is a medical model practised by doctors and health professionals and is associated with the diagnosis, treatment and cure of disease.

Bubonic plague an infectious disease that is caused by bacteria transmitted to humans by fleas from infected rats

CT scans computed tomography scan, which is a specialised x-ray taken from many different angles to build a three-dimensional picture of the body

Fertility rates the number of live births per 1000 women aged 15–49 in one year

Health promotion the process of enabling people to increase control over, and to improve, their health

Infectious diseases diseases caused by micro-organisms, such as bacteria, viruses, parasites or fungi, that can be spread, directly or indirectly, from one person to another

Intersectoral collaboration having groups from many sectors, such as government, health and the private sector, working together to achieve a common goal

Life expectancy the number of years of life, on average, remaining to an individual at a particular age if death rates do not change. The most commonly used measure is life expectancy at birth (AIHW, 2018).

New public health an approach to health that expands the traditional focus on individual behaviour change to one that considers the ways in which physical, sociocultural and political environments impact on health. Also referred to as the social model of health.

Old public health government actions that focused on changing the physical environment to prevent the spread of disease, such as providing safe water, sanitation and sewage disposal, improved nutrition, improved housing conditions and better work conditions

Ottawa Charter for Health Promotion an approach to health developed by the World Health Organization that aims to reduce inequalities in health. It reflects the social model of health and provides five action areas that can be used as a basis for improving health status, all of which are centred around three strategies for health promotion which are enabling, mediating and advocacy.

Palliative care an approach designed to improve the quality of life of patients with a life-threatening illness with little or no prospect of a cure. This is achieved through the prevention and relief of suffering and the treatment of pain.

Pandemic the spread of infectious disease through human populations across a large region such as multiple continents or worldwide. COVID-19 is the most recent example of a pandemic, affecting almost every country.

PET scan involves having an injection of a small amount of radioactive material, which enables a scanner to build up a picture of the body

Public health the ways in which governments monitor, regulate and promote health status and prevent disease

Quarantine laws that require a person, animal, plant or any type of material that might be carrying an infectious agent to be kept isolated to prevent the spread of disease

Sanitation the process of eliminating contact between humans and hazardous wastes, including human and animal faeces and urine, solid wastes, domestic wastewater (sewage and grey water), industrial wastes and agricultural wastes

Social model of health an approach that recognises improvements in health and wellbeing can only be achieved by directing effort towards addressing the physical, sociocultural and political environments of health that have an impact on individuals and population groups

Syphilis a bacterial infection usually spread by sexual contact. Without treatment, it can damage the heart, brain or other organs, and can be life threatening. It can be passed from mother to an unborn child.

Venereal disease a disease contracted by sexual intercourse with a person already infected; a sexually transmitted infection

5.9.3 Extended response: build your exam skills

tlvd-2880

You have been building your skills over the previous chapters in relation to approaching and answering extended response questions. You will now have an understanding of how to unpack the different components of the task.

Consider the following question

Use the information in the stimulus material and your own knowledge to discuss how policy and practice associated with the old public health has been implemented in response to COVID-19 and justify why a combination of both the social and biomedical approaches to health is necessary to address new diseases such as COVID-19.

Step 1: Using the example of the question above, you will know that you are required to:

- Use information in all pieces of the stimulus material provided
- Use your own knowledge
- Discuss how policy and practice associated with old public health has been implemented in response to COVID-19
- Show your understanding of the social and biomedical approaches to health
- Justify why both of these approaches are necessary to address coronavirus.

When using information in the stimulus material, high level responses focus on the connections that are made between the different pieces of stimulus material and each of the components of the question and synthesise this information rather than just restating it.

In this section we will explore how to recognise, understand and synthesise relationships between stimulus material and the question.

A strategy that is useful is to colour code the different aspects of the question and when reading each of the pieces of stimulus material, colour code according to the component of the question the information relates to. An example can be seen below using three pieces of stimulus material.

Step 2: Highlight each of the components of the question in a different colour.

- Use information in all pieces of the stimulus material provided
- Use your own knowledge
- Discuss policy and practice associated with old public health have been implemented in response to COVID-19
- Show your understanding of the social and biomedical approaches to health
- Justify why both of these approaches are necessary to address the coronavirus

Step 3: Read each part of the stimulus material and highlight in the relevant colour any information that relates to a component of the question. This is shown below.

You will see that **SOURCES 1** and **2** each relate to one component of the question but that **SOURCE 3** includes information relevant to all three components of the question. This means you can discuss the connections to the stimulus material when you are addressing each of the components of the question.

It will also allow you to consider the additional information that you can add from your own knowledge by looking for gaps not provided in the stimulus.

Source 1



Source 2

In Australia, from 3 January 2020 to 26 May 2021:

- 30 030 confirmed cases of COVID-19
- 910 deaths.

As of April 2021:

- 3 089 183 vaccine doses.



Source 3

There are several reasons why COVID-19 has become a major crisis. It is a new virus and there is no immunity in the population and currently no vaccine or specific treatments. It is also highly infectious and affects some people severely.

In 1919 the Spanish flu caused approximately 12 000 deaths in Australia, making it the most common cause of death in Australia that year. However, we are now in a better position to control viral epidemics than 100 years ago. There is much more knowledge on all aspects of viruses, including how they spread. Healthcare has advanced, enabling supportive care and antibiotics for secondary infections, even without specific treatments or vaccines for a particular virus. Scientific methods have developed substantially, for example, the invention of the electronic microscope in the late 1930s enabled viruses to be visualised and their structure understood. The health of the population has improved, and communication methods mean that international cooperation is much more possible now. Nevertheless, at this stage, successful control of COVID-19 spread still relies on similar public health approaches to those used in 1919 such as quarantine, isolation and physical distancing.

A sample response

COVID-19 is a new virus that is having a significant impact on people. Source 2 shows there have been 600 deaths in Australia and 25 547 total cases. The fact that it is new and people have no immunity (Source 3) means there are many similarities to the Spanish flu in 1919. The advice that is being provided to people to help prevent the spread of the disease represents much of the policies and practices implemented as part of the old public health. The focus of the old public health was to address environmental factors that impacted health such as good hygiene¹.

This is evident in Source 1, with advice provided to reduce the risk of spreading the virus — washing hands thoroughly, wearing protective masks and not shaking hands.²

Another policy associated with the old public health is the need to quarantine.³ People are advised to stay home when ill and those who have symptoms are encouraged to be tested. Policy requires travellers from overseas or other COVID hotspots to quarantine for 14 days. We also had a series of lockdowns to prevent people from coming into contact with the virus in workplaces, schools and on public transport.⁴

Source 1 also points out the need to stay home and not travel. As indicated in Source 3, old public health practices implemented to address the Spanish Flu included physical distancing. Given the highly infectious nature of COVID-19, physical distancing was enforced through density limits and ensuring physical distancing of 1.5 metres was maintained.⁵ This is also represented in Source 1.

As mentioned in Source 3, COVID-19 was a new disease without a vaccine or specific treatments. It was therefore important to introduce strategies designed to prevent the disease and which reflected the social model of health.⁶ However, as shown in Source 2, there were 32 current cases in intensive care units in hospital and 500 current cases were being treated in hospital. This represents the biomedical approach to health. This recognises the importance of the biomedical approach working alongside the social model of health to improve health outcomes. Hospital care and the use of technology is necessary for those who are suffering from the impact of the disease but without a cure or treatment, it is far better for people to take preventative action.⁷ There has been a massive research effort globally to develop a vaccine, which also demonstrates the importance of the biomedical approach to health.

Preventative action for COVID-19 involved many sectors working together. Police, health care workers, the education sector, transport sector and retail sector were some examples of intersectoral collaboration (one of the principles of the social model of health) put in place to reduce the spread of the virus in Australia. Information was provided to different population groups in languages they were able to understand and testing centres provided free access to tests for COVID-19.⁸ According to Source 2⁹, 119 751 tests for COVID-19 had been undertaken. This represents efforts to ensure everyone had access to healthcare, a principle of the social model of health.

Finding a vaccine will reduce the crisis associated with COVID-19 but both the biomedical and social models of health will continue to play an important role in preventing the spread of the virus in much the same way as the Spanish flu and other forms of influenza.¹⁰

1 A focus of the old public health is provided and then connections are made with the information provided in Source 1.

2 Information about hygiene has been added to use own knowledge.

3 Quarantine is an aspect of old public health and this is linked to a specific intervention used to combat COVID-19 (14 day quarantine and lockdowns).

4 Further details about quarantining has been provided using own knowledge to supplement discussion.

5 Another aspect of old public health was identified from Source 3 and was further explained using own knowledge.

6 Introduces the social model of health but also connects to Source 2 to show an understanding of the biomedical approach to health.

7 This connects both the biomedical and social models of health to COVID-19 to justify why the two approaches are necessary.

8 Own knowledge is used to show an understanding of a relevant principle of the social model of health and connects actions being taken in relation to COVID-19.

9 You can check that all three sources of information have been used by referencing each source when you refer to it.

10 This provides a conclusion that connects back to the question that justifies why the two approaches to health are needed.

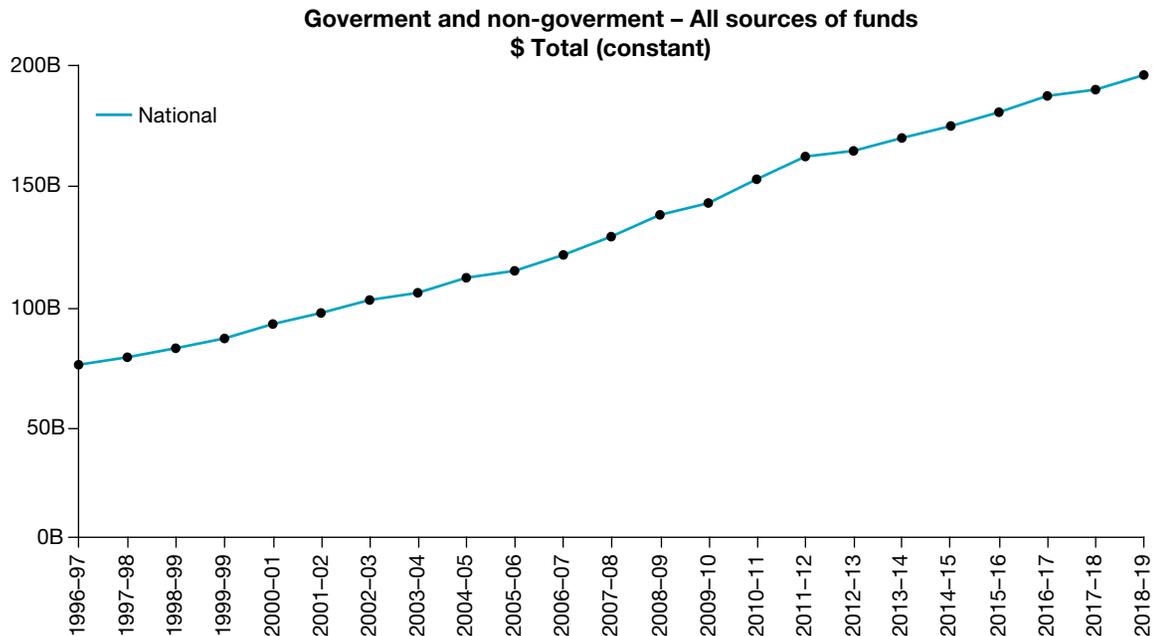
Practise this skill

Use information from the stimulus material and your own knowledge to discuss why the strengths and limitations of the biomedical and social models of health makes it essential for a combination of these approaches to be used to improve Australia's health status. **8 marks**

Source 1

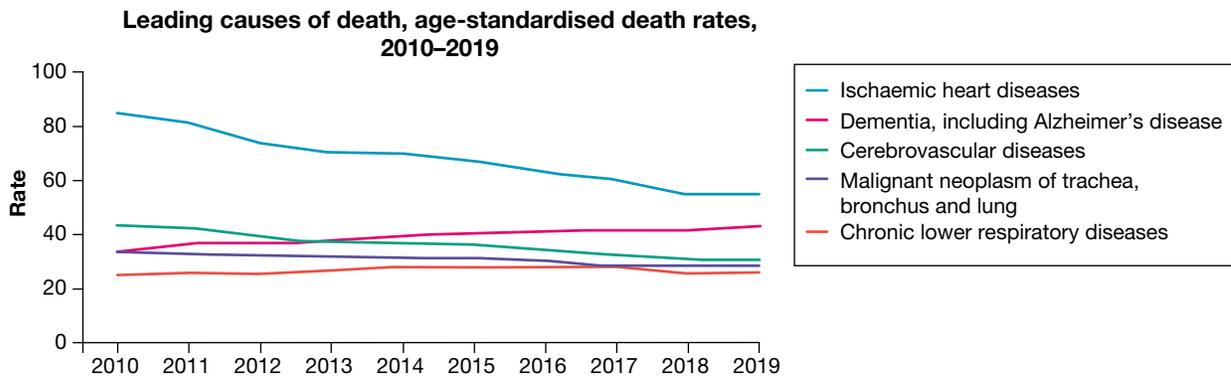
- Total health spending was \$195.7 billion, equating to \$7772 per person.
- Health spending increased by 3.1 per cent, which was slightly lower than the decade average of 3.5 per cent.
- The majority of health spending went on hospitals (40.4 per cent) and primary healthcare (33.5 per cent).

Total health expenditure 1996–2018–19



Source: Australian Institute of Health and Welfare <https://www.aihw.gov.au/reports/health-welfare-expenditure/health-expenditure-australia-2018-19/contents/data-visualisation> (accessed January 2021)

Source 2



Source: ABS, <https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2019#australia-s-leading-causes-of-death-2019>

Source 3

Australia has a strong tradition of developing and investing in prevention to deliver major health gains. These gains include high rates of immunisation and seatbelt use, restrictions on driving under the influence of alcohol, and changes to sleeping positions of infants to prevent sudden infant death. Australia has also made progress in chronic disease, for example in tobacco and blood pressure controls, which have substantially contributed to the halving of deaths from heart disease and stroke. But we have a long way to go to help everyone, particularly high-risk and vulnerable groups, reduce their risk of chronic disease.

We could prevent 80 per cent of heart disease and type-2 diabetes and 40 per cent of all cancers if we eliminated risk factors such as being overweight or obese, being physically inactive, drinking too much alcohol and smoking.

Source: <https://preventioncentre.org.au/chronic-disease-and-systems/the-case-of-prevention/> and <https://www.health.gov.au/initiatives-and-programs/boosting-preventive-health-research-initiative>

5.9 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

5.9 Exam questions

5.9 Exam questions

Question 1 (6 marks)

Source: *VCE 2020, Health and Human Development, Section A, Q.8* (adapted); © VCAA

The WA [Western Australian] AIDS Council and the Aboriginal and Torres Strait Islander Sexual Health Program [ASH program] works to offer services that are holistic and culturally appropriate for and with Aboriginal and Torres Strait Islander communities. We focus on both the metropolitan area and rural and remote areas of Western Australia. The program provides:

- Holistic health – physical, social, emotional and cultural wellbeing [for] the whole of community.
- Self-determination – the involvement of Aboriginal and Torres Strait Islander people in all parts of health care delivery, including planning and development, implementation and evaluation.
- The right for Aboriginal and Torres Strait Islander people to choose different models of healthcare.
- Health programs that are tailored to fit the needs of broader Aboriginal and Torres Strait Islander community groups.
- Healthcare services that are accessible and culturally appropriate. We provide customised HIV/AIDS education and prevention knowledge and training in Aboriginal and Torres Strait Islander community organisations and non-Indigenous organisations. Joint initiatives are encouraged and pursued with Aboriginal agencies and non-Aboriginal agencies. These aim to increase the capacity of suitable and ongoing interagency responses and commitment.

Source: Adapted from Western Australian AIDS Council, <https://waaidc.com/item/12-ash-project.html>

- a. **Explain** how the ASH program can lead to improved health and wellbeing outcomes for Aboriginal and Torres Strait Islander peoples. **3 marks**
- b. **Identify** one principle of the social model of health and explain how it is reflected in the ASH program. **3 marks**

Question 2 (2 marks)

TABLE 5.7 shows the top 10 causes of death for males in 1907 and 2018.

TABLE 5.7 Top 10 causes of death for males, 1907 and 2018

Condition	% of total deaths 1907	Condition	% of total deaths 2018
Heart disease	8.3	Coronary heart disease	12.5
Tuberculosis	8.2	Lung cancer	6.1
Diarrhoea	7.1	Dementia including Alzheimer's disease	6.1
Senility	6.6	Cerebrovascular disease	5.1
Congenital issues	6.1	Chronic obstructive pulmonary disease	4.6
Bronchitis	4.8	Prostate cancer	4.0
Pneumonia	4.3	Colorectal cancer	3.5
Nephritis	4.1	Diabetes	3.1
Cerebrovascular disease	3.8	Suicide	2.8
Unspecified and ill defined	3.1	Cancers of unknown or ill defined site.	2.0

Source: AIHW 2005, *Mortality over the twentieth century in Australia: trends and patterns in major causes of death*, p. 44, and GRIM books S3.1. <https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2019>

Identify one similarity and one difference in the causes of death for males in 1907 compared to 2018. **2 marks**

Question 3 (4 marks)

Explain how the policies and practices undertaken as part of the old public health might have had an impact on the top 10 causes of death between 1907 and 2018.

Question 4 (7 marks)

- a. Identify** three action areas of the Ottawa Charter. **3 marks**
- b. Select** two of the action areas identified in part **a** and **discuss** how each of these could contribute to reducing the death rates associated with any one of the top 10 causes of disease for males in 2018. **4 marks**

Question 5 (6 marks)

Discuss how the biomedical and social models could contribute to reducing the death rates associated with coronary heart disease.

Resources

-  **Digital document** Key terms glossary (doc-36127)
-  **Exam question booklet** Topic 5 Exam question booklet (eqb-0059)
-  **Interactivities** Crossword (int-6887)
Definitions (int-6888)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 5 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 5.1 Key terms glossary (doc-36123)
- 5.3 Life. Be in it. worksheet (doc-32200)
- 5.7 Smoking worksheet (doc-32201)
- 5.9 Summary (doc-36140)

Exam question booklets

- 5.1 Topic 5 Exam question booklet (eqb-0059)
- 5.9 Topic 5 Exam question booklet (eqb-0059)

Teacher-led videos

- 5.3 Concepts of the 'old' public health and 'new' public health (tlvd-0261)
- 5.5 The social model of health (tlvd-0259)
- 5.6 Ottawa Charter (tlvd-0262)
- 5.8 Key skill: Analyse data that show improvements in health over time and draw conclusions about reasons for improvements (tlvd-1914)
Key skill: Analyse the strengths and limitations of biomedical and social models of health in bringing about improvements in health status (tlvd-1915)
- 5.9 Extended response: build your exam skills (tlvd-2880)

Weblinks

- 5.3 Life. Be in it.
- 5.7 Personal consequences ads
Breakthrough in lung cancer treatment

Interactivities

- 5.2 Age profile of Australia's population, 1900 and 2018 (int-8499)
Age-standardised death rates for all causes, by sex and year, 1907–2018 (int-8500)
- 5.7 Age-standardised death rates for lung cancer, by sex and year, 1945–2018 (int-8501)
- 5.9 Crossword (int-6887)
Definitions (int-6888)

To access these online resources, log on to www.jacplus.com.au.

6 Australia's health system

LEARNING SEQUENCE

6.1 Overview	297
6.2 Medicare	298
6.3 The Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme	304
6.4 Private health insurance	311
6.5 Funding and sustainability and the role of Australia's health system	317
6.6 Access and equity and the role of Australia's health system	327
6.7 KEY SKILLS	331
6.8 Review	333



6.1 Overview

Key knowledge	Key skills
Australia's health system, including Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme, and its role in promoting health in relation to funding, sustainability, access and equity	Analyse the role of Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme in promoting Australia's health

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Allied health services	Patient co-payment
Bulk billing	Premium
Equity	Schedule fee
Medicare	

Exam terminology

Analyse Examine the components of; Look for links, patterns, relationships and anomalies

Resources

-  **Digital document** Key terms glossary (doc-36128)
-  **Exam question booklet** Topic 6 Exam question booklet (eqb-0060)

6.2 Medicare

KEY CONCEPT Understanding Australia's health system: Medicare

According to the World Health Organization, a health system is 'all the activities whose primary purpose is to promote, restore and/or maintain health'.

Common elements of health systems include funding models, a professional and well-trained workforce, reliable information on which to base decisions and policies, up-to-date facilities, and logistics to deliver quality medicines and technologies.

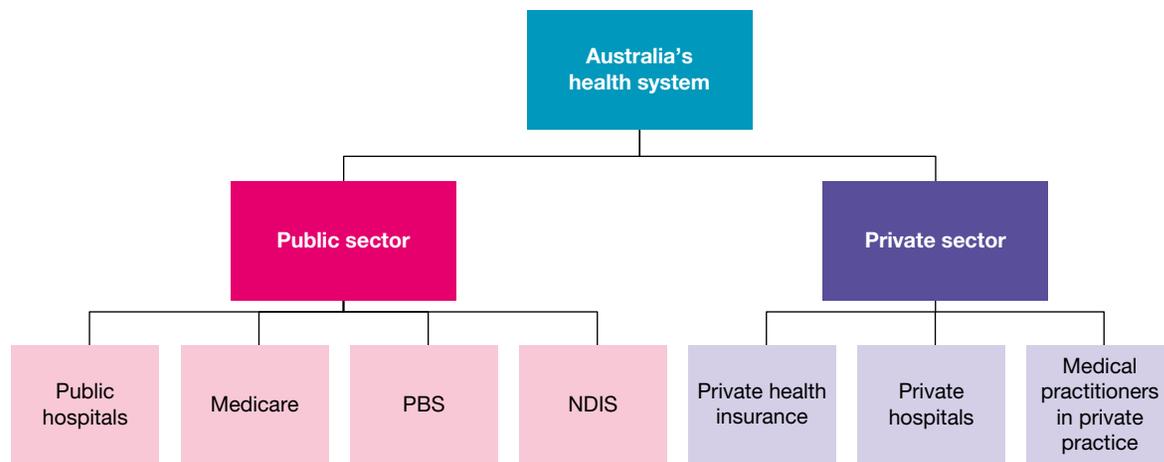
Australia's health system is made up of two main components — public and private healthcare. The public component includes public-sector health services and schemes that are provided by the Australian, state/territory and local governments, and include public hospitals, Medicare, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme. The private sector includes private health insurance, private hospitals and medical practitioners in private practices (see **FIGURE 6.1**).

The Australian government and state/territory governments also fund and deliver a range of other services, including population health programs, health and medical research, and Aboriginal and Torres Strait Islander health services.



int-8502

FIGURE 6.1 Australia's health system is made up of the public and private sectors and the respective components.



6.2.1 Medicare

Medicare is Australia's universal health insurance scheme. Established in 1984 and administered by the Federal Government, Medicare gives all Australians, permanent residents and people from countries with a reciprocal agreement (New Zealand, the United Kingdom, the Republic of Ireland, Belgium, Sweden, the Netherlands, Finland, Italy, Malta, Slovenia and Norway) access to subsidised healthcare.

6.2.2 What does Medicare cover?

Out-of-hospital expenses

Medicare will pay all or some of the fees relating to many essential healthcare services. This includes consultation fees for doctors (general practitioners or GPs) and specialists, tests and examinations needed to treat illnesses, such as X-rays and pathology, for example blood tests, and eye tests performed by optometrists. Most surgical and other therapeutic procedures performed by general practitioners are also covered.

FIGURE 6.2 Medicare is administered by the Federal Government and is available to all Australians.



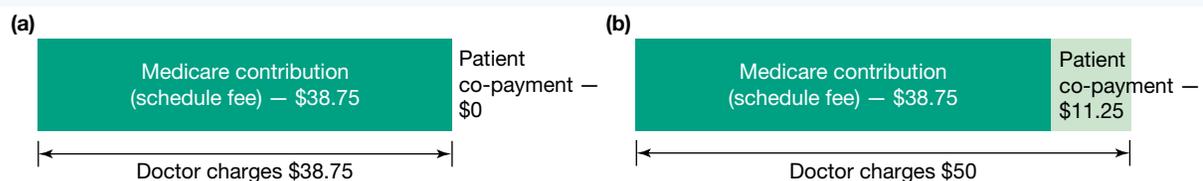
Schedule fee the amount that Medicare contributes towards certain consultations and treatments. The government decides what each item is worth and that's what Medicare pays. Doctors and private hospitals may choose to charge more than the schedule fee.

Patient co-payments the payment made by the consumer for health products or services in addition to the amount paid by the government

Bulk billing when the doctor charges only the schedule fee. The payment is claimed directly from Medicare so there are no out-of-pocket expenses for the patient.

The Medicare Benefits Schedule is a document that lists the range of services covered and the amount that Medicare will contribute to each, known as the **schedule fee**. The schedule fees are based on the amount that is thought to be 'reasonable', on average, for that particular service. For example, the schedule fee for a GP's visit in January 2021 was \$38.75. Based on this contribution, every time an individual goes to the doctor for a standard consultation, Medicare will contribute \$38.75. This does not necessarily mean that the doctor will only charge that amount. Depending on the individual doctor's policy, the fee may be more than the schedule. If this is the case, the patient is responsible for paying the difference (known as the **patient co-payment**). If the doctor charges only the schedule fee, the patient does not have any out of pocket expenses and is said to have been **bulk-billed**. Examples of the contributions of both Medicare and the individual are outlined in the hypothetical situations in **FIGURE 6.3**.

FIGURE 6.3 (a) A bulk-billed GP consultation and (b) a GP consultation requiring patient co-payment



Source: www.health.gov.au

The Medicare Benefits Schedule also contains schedule fees for specialist services such as those performed by dermatologists (who treat skin conditions), cardiologists (who treat heart conditions) and obstetricians (who treat women during pregnancy and childbirth). When an individual accesses such services, Medicare will contribute 85 per cent of the schedule fee (although the specialist may charge more than the schedule fee), meaning a patient co-payment will be required, unless the additional cost is covered under private health insurance.

Although most basic dental services are usually not covered by Medicare, some dental procedures can be covered, including:

- some surgical procedures performed by approved dentists

FIGURE 6.4 X-ray is one of the many services Medicare covers.

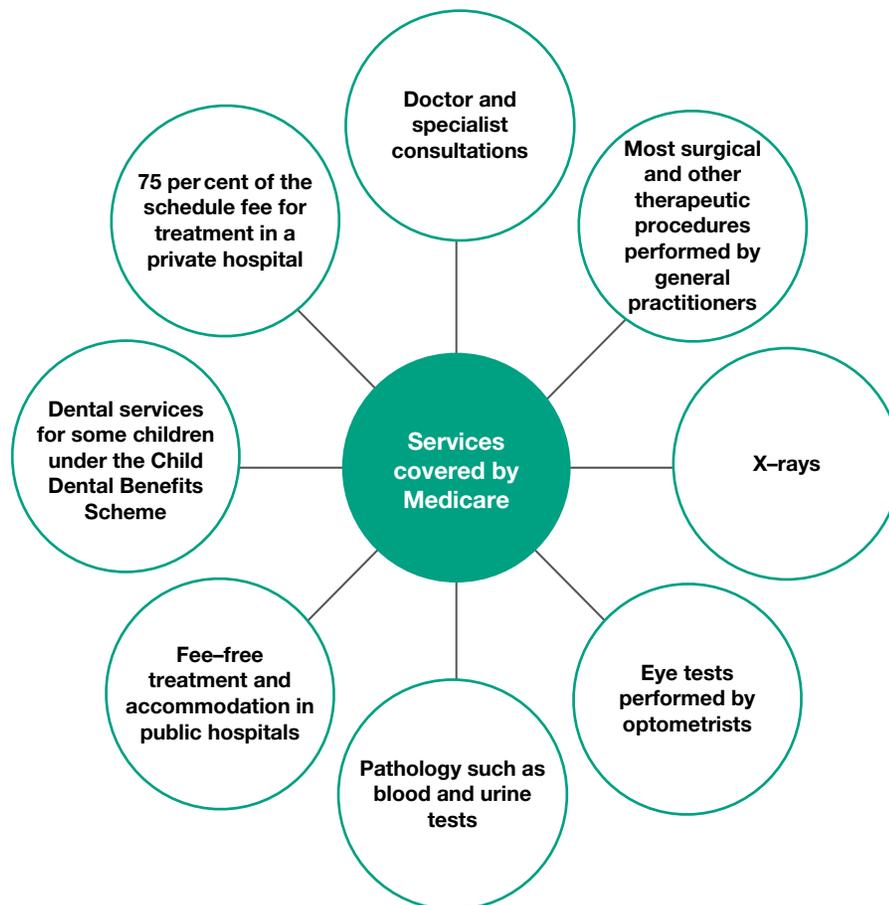


- services for some children aged 2–17. Under the Child Dental Benefits Scheme, some children are eligible for Medicare-funded dental procedures. Medicare will provide \$1000 worth of dental treatment over two years for those who qualify. In order to qualify, the individual must be eligible for Medicare and they or their family, guardian or carer must receive certain government benefits, such as Family Tax Benefit Part A or Youth Allowance (forms of social security), for at least part of the calendar year.

In-hospital expenses

As a public patient in a public hospital, accommodation and treatment by doctors and specialists is covered by Medicare, including initial treatment and aftercare. If an individual chooses to be admitted to a private hospital or as a private patient in a public hospital, Medicare will pay 75 per cent of the schedule fee for treatment by doctors and specialists, but will not contribute to accommodation or other costs such as theatre fees and medication. A summary of the in- and out-of-hospital services covered by Medicare is shown in **FIGURE 6.5**.

FIGURE 6.5 Summary of services covered by Medicare



Medicare Safety Net

The Medicare Safety Net provides extra financial assistance for those that incur significant out-of-pocket costs for Medicare services. Once an individual or family has contributed a certain amount out of their own pocket to Medicare services in a calendar year (\$470 in 2019), further financial support is provided by the government, making Medicare services cheaper for the remainder of that year.

6.2.3 What is not covered by Medicare?

Medicare covers most ‘clinically necessary’ hospital and doctors’ services. Any cosmetic or unnecessary procedures are generally not covered. Other services not covered by Medicare include:

- most costs associated with private hospital care. Medicare will pay 75 per cent of the schedule fee for treatment in private hospitals but will not contribute to accommodation and other costs.
- most dental examinations and treatment. Although some children aged 2–17 can qualify for Medicare-funded dental care, most individuals are responsible for meeting their own costs associated with dental healthcare.
- home nursing care or treatment
- ambulance services
- most **allied health services** (unless referred by a GP or carried out in a public hospital).

Allied health services health services provided by trained health professionals who are not doctors, dentists or nurses. Examples include services provided by physiotherapists, psychologists and occupational therapists.

A number of treatments that exist in addition to traditional medicine are generally not covered by Medicare. Often these are seen as ‘alternative medicines’ and include chiropractic services, acupuncture, remedial massage, naturopathy and aromatherapy. Medicare may contribute if these services are carried out or referred by a GP.

Health-related aids, such as glasses and contact lenses, hearing aids and the cost of artificial limbs (prostheses), are also exempt from the Medicare rebate. Pharmaceuticals are not covered under Medicare but may be subsidised under the Pharmaceutical Benefits Scheme.

Medical costs for which someone else is responsible (for example, a compensation insurer, an employer, or a government or non-government authority) do not qualify for a Medicare contribution as the person or organisation responsible is expected to pay the medical fees.

Individuals and/or families can choose to purchase private health insurance to cover many of the services not covered by Medicare if they wish.

6.2.4 The advantages and disadvantages of Medicare

The advantages and disadvantages of Medicare are summarised in **TABLE 6.1**.

FIGURE 6.6 Alternative therapies, such as acupuncture, are not usually covered by Medicare, but can be if carried out or referred by a GP.



TABLE 6.1 The advantages and disadvantages associated with Medicare

Advantages	Disadvantages
<ul style="list-style-type: none"> • Choice of doctor for out-of-hospital services • Available to all Australian citizens • Reciprocal agreement between Australia and other countries allows Australian citizens to access free healthcare in selected countries • Covers tests and examinations, doctors' and specialists' fees (schedule fee only), and some procedures such as X-rays and eye tests • The Medicare Safety Net provides extra financial contributions for medical services once an individual's or family's co-payments reach a certain level 	<ul style="list-style-type: none"> • No choice of doctor for in-hospital treatments • Waiting lists for many treatments • Does not cover alternative therapies • Often does not cover the full amount of a doctor's visit

6.2.5 How is Medicare funded?

Medicare is funded through three sources of income:

- the Medicare levy
- the Medicare levy surcharge
- general taxation.

The Medicare levy is an additional 2 per cent tax placed on the taxable income of most taxpayers. Those with low incomes or with specific circumstances may be exempt from paying the levy.

People without private health insurance earning more than a certain amount (\$90 000 a year for individuals and \$180 000 for families in 2020–21) have to pay an extra tax called the Medicare levy surcharge. The Medicare levy surcharge increases as income increases; for example, an individual without private health insurance earning more than \$90 000 will pay an extra 1 per cent of their income to Medicare, and an individual without private health insurance earning more than \$140 001 will pay an extra 1.5 per cent of their income to Medicare. This is an incentive for those on higher incomes to take out private health insurance, which takes some of the financial pressure off Medicare.

TABLE 6.2 Medicare services provided and benefits paid, 2009–20

	Total services provided (million)	Average number of services per person	Total cost of services (\$ million)	Average cost per person (\$)
2009–10	308.0	14.2	15 413.7	710.6
2010–11	318.8	14.5	16 317.6	740.6
2011–12	332.2	14.9	17 639.2	789.6
2012–13	343.6	15.1	18 565.6	816.7
2013–14	356.1	15.4	19 122.6	826.8
2014–15	368.5	15.7	20 188.9	860.0
2015–16	384.0	16.1	21 107.8	866.3
2016–17	394.3	16.3	22 002.6	909.5
2017–18	414.3	16.8	23 196.3	943.0
2018–19	424.2	17.0	24 071.4	963.5
2019–20	428.3	16.9	24 689.2	973.6

Source: www.health.gov.au

The Medicare levy surcharge aims to encourage individuals to take out private hospital cover and, where possible, to use the private system to reduce the demand on the Medicare-funded public system.

The revenue collected from the Medicare levy and the Medicare levy surcharge does not meet the full operating costs of Medicare. Therefore, income collected through general taxation is also used to help fund the cost of Medicare.

EXAM TIP

This study design dot point relates to Australia's health system and how it promotes 'health', which can relate to either health and wellbeing or health status. If asked how the health system (or an aspect of it) can promote health or improve health outcomes, links to either health and wellbeing or health status are acceptable.

6.2 Activity

Access the **Medicare** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

 **Digital document** Medicare worksheet (doc-32205)

 **Weblink** Medicare

6.2 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

6.2 Quick quiz

on

6.2 Exercise

6.2 Exam questions

Learning pathways

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 7, 8, 10

■ LEVEL 3

6, 9

Test your knowledge

- Briefly describe Medicare.
 - What does Medicare cover?
 - What does Medicare not cover?
- What is meant by the term 'schedule fee'?
 - What is bulk billing?
- What percentage of the schedule fee does Medicare pay if individuals are treated as private patients?
- What is the Medicare Safety Net?
- Outline how Medicare is funded.

Apply your knowledge

- Does Medicare represent the biomedical or social model of health? Explain. (You may need to refer to subtopics 5.4 and 5.5.)
- Does Medicare cover dental healthcare? Discuss.
- Explain how the Medicare Safety Net may promote health status in Australia.
- Explain how Medicare improves health outcomes in Australia.
- According to **TABLE 6.2**, how has the average number of Medicare services per person changed from 2009–10 to 2019–20?
 - Suggest two possible reasons for this change.

6.2 Quick quiz

on

6.2 Exercise

6.2 Exam questions

Question 1 (2 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.11.c; © VCAA

Explain how Medicare provides universal health coverage.

Question 2 (2 marks)

Source: VCE 2016, *Health and Human Development Exam*, Q.1.a; © VCAA

List one service that is covered by Medicare and **explain** how this service can improve the health status of Australians.

Question 3 (2 marks)

Source: VCE 2015, Health and Human Development Exam, Q.11.c; © VCAA

Mavis is 76 years old and has been diagnosed with colorectal cancer. Her family is devastated by this diagnosis as Mavis has been an outgoing, independent woman. As a result of her diagnosis, Mavis has had to visit the doctor more regularly to ensure management of the condition and to be prescribed appropriate medication.

Identify two services covered by Medicare that Mavis could access as a result of her diagnosis.

Question 4 (2 marks)

Source: VCE 2014, Health and Human Development Exam, Q.3.b; © VCAA

Dental services are generally not covered by Medicare. However, in January 2014 the Child Dental Benefits Schedule was introduced. It provides financial support for basic dental services for children. To be eligible for these benefits:

- the child must be aged 2–17 years
- the child's family must receive certain government benefits, such as Family Tax Benefit Part A, for at least part of the calendar year
- the child must be eligible for Medicare.

List two other health services not covered by Medicare.

More exam questions are available in your learnON title.

6.3 The Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme

KEY CONCEPT Understanding Australia's health system: the Pharmaceutical Benefits Scheme and National Disability Insurance Scheme

In addition to Medicare, the federal government is responsible for the Pharmaceutical Benefits Scheme (PBS) and plays a key role in administering the National Disability Insurance Scheme (NDIS). The PBS and NDIS are two key components of Australia's health system and work to promote health and wellbeing in Australia.

6.3.1 Pharmaceutical Benefits Scheme (PBS)

The PBS is a key component of the federal government's contribution to Australia's health system.

The PBS has been evolving since 1948, when the government provided lifesaving and disease-preventing medication to the community free of charge. The aim was to provide essential medicines to people who needed them, regardless of their ability to pay. The purpose of the PBS remains the same today, but instead of being free, medicines are now subsidised and consumers must make a patient co-payment. As of 1 January 2021, the patient co-payment for most PBS-subsidised medication was \$41.30 or \$6.60 for concession cardholders. The government pays the remaining cost. These costs are adjusted each year on 1 January to stay in line with inflation.

In addition to the initial subsidy, individuals and families are further protected from large overall expenses for PBS-listed medicines through the PBS Safety Net. Once they (or their immediate family) have spent \$1497.20 within a calendar year on PBS-listed medicine, the patient pays only a concessional co-payment rate of \$6.60 rather than the normal \$41.30.

Currently, more than 5000 brands of prescription medicine are covered by the PBS. This includes different brands of the same medicine.

There are also a number of drugs not covered by the PBS. These drugs require the patient to pay the full amount. Available medications are reviewed three times a year by the Pharmaceutical Benefits Advisory Committee (PBAC). The PBAC is an independent committee made up of health professionals who review and consider new medications for inclusion in the PBS. No new medicine can be listed on the PBS unless the committee makes a positive recommendation. Before recommending a medicine for listing, the PBAC takes into account the medical conditions for which the medicine is used, its clinical effectiveness, safety and cost-effectiveness ('value for money') compared with other treatments.

FIGURE 6.7 More than 5000 essential medications are subsidised under the PBS.



In 2019–20, more than \$12.5 billion was paid through the PBS. On average, there were around eight prescriptions subsidised for every person in Australia (Department of Health and Ageing, 2021).

CASE STUDY

New \$160 000 drug for multiple myeloma blood cancer to be added to PBS at a cost to patients of \$480

More than 1000 patients with an incurable type of blood cancer are expected to benefit from a 'completely new' treatment that will be subsidised by the Federal Government in the new year.

Darzalex, which will be listed on the Pharmaceutical Benefits Scheme (PBS) from January 1, is a medicine used to treat multiple myeloma, a cancer that causes cancerous plasma cells to accumulate in bone marrow and crowd out healthy blood cells.

An estimated 18 000 to 20 000 people are living with multiple myeloma and about 1000 die with it each year, Myeloma Australia chief executive Steve Roach said.

Miles Prince, the director of molecular oncology and cancer immunology at Epworth Health Care, said treatment options for the cancer had been 'quite limited'.

But he described Darzalex as a 'new drug acting in a completely new way' that could allow patients to go for years before needing further treatment.

'For the first time we see amazingly deep responses, for the first time the patient's disease almost disappears — and I emphasise the word almost because it will come back,' he said.

'But the deeper we get that response, the longer it lasts for.

'So it becomes actually undetectable for quite some time, and it's the first time we're seeing responses where we just cannot see the myeloma at all. It does come back, but it takes a long time.'

Multiple myeloma is similar to leukemia in that it affects blood cells, but is a different disease.

It can damage people's bones and weaken the immune system, and is often diagnosed in older people with aches and pains that cannot be explained another way, Mr Roach said.

Professor Miles Prince said the drug could allow patients to go years without needing further treatment.



'Light at the end of the tunnel'

Professor Prince said while Darzalex did not cure myeloma, it was an 'incredibly powerful tool' that could work for several years.

'In one way it gives us a bit of light at the end of the tunnel, that we may be able to cure this cancer one day,' he said.

Darzalex works by binding to the cancerous plasma cells and either destroying them directly or helping the immune system identify and kill them.

The treatment will cost patients as little as \$40 per month, or \$480 a year, when listed on the PBS, down from up to \$160 000 per year. Concession card holders will pay even less.

The Federal Government said about 1165 patients would benefit from access to the treatment.

It will be listed on the PBS as a second-line treatment for when patients relapse.

Mr Roach said the announcement was 'enormous' and 'heart-lifting' news for people with myeloma and their families.

'It's absolutely huge,' he said.

'People have been waiting for this moment to ... know that we're there with the rest of the world and we have the best treatments available.'

Mr Roach said living with an incurable disease 'hanging over your head' was difficult for patients.

But he also said one of the things that made it difficult was the fact it was seen as a rare disease that was not talked about very often.

'You're living with that, without people understanding what you're living with, so it can be a heavy weight for patients, I think,' he said.

'When things like this happen it not only creates hope, but it also means people are taking notice.'

Source: 'New \$160 000 drug for multiple myeloma blood cancer to be added to PBS at a cost to patients of \$480', ABC News, 28 December 2020, <https://www.abc.net.au/news/2020-12-28/myeloma-blood-cancer-drug-darzalex-gets-federal-government-funds/13017254>

CASE STUDY REVIEW

- Who will be able to access Darzalex through the PBS?
 - How many people will benefit from the subsidisation of Darzalex in Australia?
- How much will Darzalex cost when listed on the PBS?
 - How much will Darzalex cost when not listed on the PBS?
- Explain how listing Darzalex on the PBS may promote three dimensions of health and wellbeing for those who can access it?

6.3.2 National Disability Insurance Scheme (NDIS)

The NDIS is a national insurance scheme that provides services and support for people with permanent, significant disabilities, and their families and carers. Funded by the federal and state/territory governments, the NDIS works to assist individuals with disabilities to live an ordinary life.

To be eligible for the NDIS, a person must meet the age, residency and disability requirements.

The age requirement states that an individual must be aged under 65 when applying for the NDIS.

To meet the residency requirement, the individual must live in Australia and be an Australian citizen or hold a permanent visa or a **Protected Special Category visa**.

The disability requirements are fourfold:

- you have an impairment or condition that is likely to be permanent (i.e. it is likely to be lifelong)
- your impairment substantially reduces your ability to participate effectively in activities, or perform tasks or actions unless you have:
 - assistance from other people or
 - you have **assistive technology** or equipment (other than common items such as glasses) or
 - you can't participate effectively even with assistance or aides and equipment
- your impairment affects your capacity for social and economic participation
- you are likely to require support under the NDIS for your lifetime.

If the age, residency and disability requirements are met, the first step in accessing the NDIS is developing an individualised plan. The plan is based on the individual's goals and aspirations, both now and in the future. This may include greater independence, community involvement, employment and improved health and wellbeing. The plan also identifies the functional support needed for daily living and participation, the support needed to pursue goals, and how the individual wants to manage their plan over time. For example, the individual may choose to manage the plan themselves, nominate someone to help manage their plan, or ask NDIS staff to manage all or part of their plan on their behalf. The NDIS provides information to help participants make these choices and design an individualised plan that is right for each person.

Through the individualised plan, the NDIS assists participants to:

- Access mainstream services and supports — These are the services available for all Australians from people such as doctors or teachers through the health and education systems. It also covers areas such as public housing and the justice and aged care systems. The NDIS provides information about appropriate support options and assists participants in accessing such services.
- Access community services and supports — These are activities and services available to everyone in a community, such as sports clubs, community groups, libraries or charities. Many individuals wish to be socially connected by accessing services and supports within the community.
- Maintain informal support arrangements — This is the help that people get from their family and friends. It is support people don't pay for and is generally part of most people's lives.
- Receive reasonable and necessary funded supports — The NDIS can pay for supports that are reasonable and necessary. This means they are related to a person's disability and are required for them to live an ordinary life and achieve their goals. Funding is provided for assistive technology such as a mobility cane, nonslip bathmat, talking watch, shower stool/chair, over-toilet frame, bed rails and wheelchairs. Funding is also provided to pay for carers if the individual requires assistance with daily tasks.

FIGURE 6.8 The NDIS provides services and support for people with disabilities.



Protected Special Category visa these visas are held by some people who arrived in Australia on a New Zealand passport and meet other specific criteria

Assistive technology a device, system or design that allows an individual to perform a task that they would otherwise be unable to do, or increase the ease and safety with which a task can be performed

FIGURE 6.9 The NDIS assists people with permanent disabilities to lead an ordinary life.



As an insurance scheme, the NDIS takes a lifetime approach, investing in people with disability early to improve their health and wellbeing later in life. By 2021, the NDIS was supporting more than 420 000 Australians with disability.

FIGURE 6.10 An individual plan through the NDIS provides a range of resources and support.

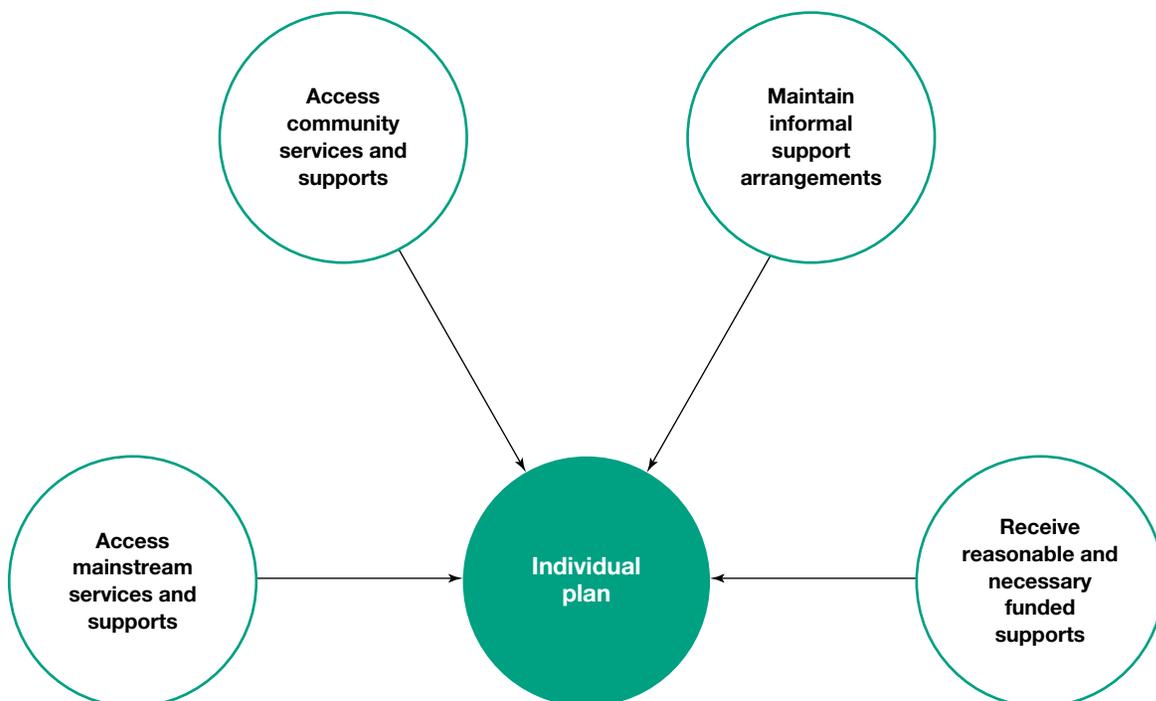


FIGURE 6.11 Assistive technology includes devices like wheelchairs that assist people in carrying out everyday tasks such as attending school.



CASE STUDY

Sarah's story — How we might provide a personal plan and supports over a lifetime

Sarah is 24, and was born with cerebral palsy. Prior to her contact with the National Disability Insurance Agency, she had no job or friends. Sarah has limited mobility and uses an electric wheelchair. Her parents provide her with most of her support. She had outgrown her wheelchair, which she had had for over eight years.

After her initial contact, Sarah worked with us to develop an individual plan. She was asked to think about her goals and aspirations, not just her physical needs. Sarah said she wanted to socialise more, and she was really interested in film.

Sarah's plan identified that she would benefit from physiotherapy and she could have daily in-home assistance with some tasks and help improve her independence. She was provided with funding for a new wheelchair.

The biggest change in Sarah's life came when we helped her locate a film club and worked with the club to support her involvement. Sarah's plan also included transport to and from these events.

Source: www.ndis.gov.au

CASE STUDY REVIEW

1. Explain how the NDIS assisted Sarah.
2. Discuss how the NDIS may have promoted Sarah's health and wellbeing.

6.3 Activity

Access the **NDIS** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

 **Digital document** NDIS worksheet (doc-32202)

 **Weblink** NDIS

6.3 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

6.3 Quick quiz



6.3 Exercise

6.3 Exam questions

Learning pathways

■ LEVEL 1

1, 2, 3, 4, 5, 6, 8

■ LEVEL 2

7, 9, 10

■ LEVEL 3

11

Test your knowledge

1. What is the Pharmaceutical Benefits Scheme (PBS)?
2. a. What is the Pharmaceutical Benefits Advisory Committee (PBAC)?
b. What role does the PBAC play in the PBS?
c. What factors does the PBAC take into account?
3. What does the co-payment mean in the PBS?
4. What is the National Disability Insurance Scheme (NDIS)?
5. What are the eligibility criteria for the NDIS?
6. Once the eligibility criteria are met, what is the first step in accessing the NDIS?
7. What does the NDIS assist participants in doing?
8. What is meant by 'assistive technology'?

Apply your knowledge

9. Outline one similarity and one difference between Medicare and the PBS.
10. Explain how the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme improve the health status of Australians.
11. Explain how assistive technology could promote the health and wellbeing of individuals in Australia.

6.3 Quick quiz



6.3 Exercise

6.3 Exam questions

Question 1 (2 marks)

Source: VCE 2015, *Health and Human Development Exam*, Q.2.c; © VCAA

The Australian healthcare system consists of private health insurance, Medicare and the Pharmaceutical Benefits Scheme (PBS).

Provide one similarity and one difference between Medicare and the PBS.

Question 2 (2 marks)

Source: VCE 2012, *Health and Human Development Exam*, Section A, Q.3.a; © VCAA

The Australian Government is responsible for administering the Pharmaceutical Benefits Scheme (PBS).

What is the PBS?

Question 3 (2 marks)

Source: VCE 2012, *Health and Human Development Exam*, Section A, Q.3.b; © VCAA

The Australian Government is responsible for administering the Pharmaceutical Benefits Scheme (PBS).

Explain how the PBS may improve the health status of Australians.

Question 4 (2 marks)

Describe how the National Disability Insurance Scheme promotes the social or mental health and wellbeing of individuals with a disability.

More exam questions are available in your learnON title.

6.4 Private health insurance

KEY CONCEPT Understanding Australia's health system: private health insurance

Private health insurance is a type of insurance under which members pay a **premium** (or fee) in return for payment towards health-related costs not covered by Medicare. It is an optional form of health insurance that can be purchased in addition to Medicare.

Private health insurance is an important part of Australia's health system. As well as contributing much of the necessary healthcare funding, it gives Australians more choice in the sort of care they wish to access. Private hospitals (which are largely funded by private health insurance companies) provide about one-third of all hospital beds and 40 per cent of hospital separations. In 2020, the Australian government made it compulsory for all insurers to classify their hospital policies according to one of four 'tiers', which relate to the level of hospital cover provided:

- Gold – covers the most categories of hospital treatment
- Silver – covers the second most categories of hospital treatment
- Bronze – covers the second fewest categories of hospital treatment
- Basic – covers the fewest categories of hospital treatment.

In order to be classified as a particular tier, the policy must cover the minimum requirements for that tier as determined by the government. Selected categories are shown in **TABLE 6.3**. The tier system was designed to simplify the process of selecting an appropriate level of cover for those wishing to take out hospital cover.

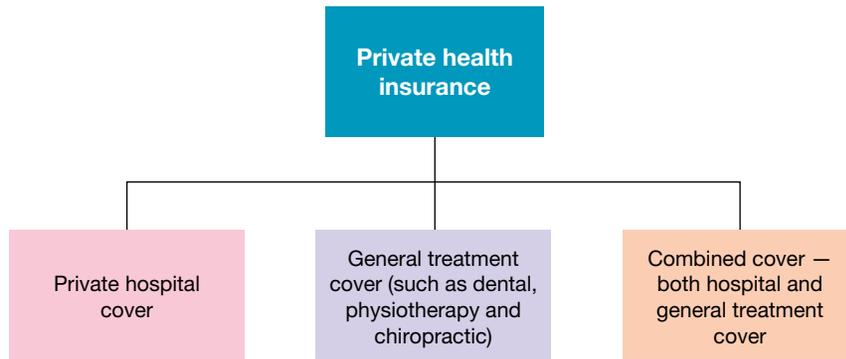
TABLE 6.3 Selected services covered by each other of the four private health insurance tiers

Category	Basic	Bronze	Silver	Gold
Rehabilitation	✓	✓	✓	✓
Brain and nervous system		✓	✓	✓
Heart and vascular system			✓	✓
Assisted reproductive services				✓

As well as private hospital cover, people can receive cover for general treatment (also known as 'extras' cover) to pay for services provided by dentists, physiotherapists and chiropractors, which are generally not covered by Medicare. The individual can choose which extras are covered, but the premium increases with each addition. The options available in private health insurance are shown in **FIGURE 6.12**.

Premium the amount paid for insurance

FIGURE 6.12 Private health insurance options



Like all insurance policies, private health insurance works by participants paying a premium, which can vary depending on how many people are covered by the policy and the options included in the policy. The basic benefit of most policies is the right to be admitted as a private patient in a public or private hospital, with many of the expenses met by the insurance company. Medicare will still pay 75 per cent of the doctor's schedule fee for treatment in private hospitals.

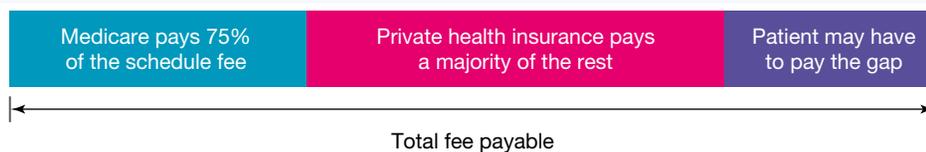
People with private health insurance generally have greater choice in terms of hospitals and doctors. As private hospitals charge much more than public hospitals, generally only people with insurance tend to use them. In private hospitals, patients get their choice of doctor, can have their own room and generally don't have to wait for extended periods for elective (non-emergency) surgery, which can happen in the public system.

Private hospitals usually charge more than the schedule fee for services. Generally, private health insurance companies pay the additional costs, but sometimes the total bill may exceed the amount contributed by the insurance company. In these cases, the patient has to pay the rest, known as 'the gap' (see **FIGURE 6.14**). Many health insurance companies have partnership arrangements with hospitals to ensure that gap payments are kept to a minimum.

FIGURE 6.13 People with private health insurance often have more choice in their healthcare, such as choosing their own doctor for hospital treatment and having their own room.



FIGURE 6.14 Breakdown of fees paid for using private hospitals

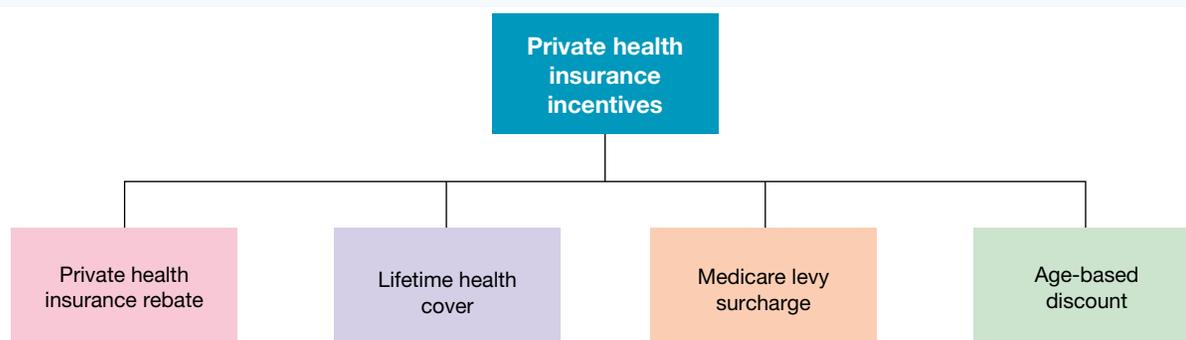


6.4.1 Private health insurance incentives

The proportion of people who have private health insurance has fluctuated over the years. When Medicare was introduced, many people opted out of private health insurance because they could access essential treatments without having to pay expensive private health insurance premiums. This put a strain on the public health system as fewer people were using private hospitals.

In order to encourage people back into private health insurance, the government has introduced four main incentives (see **FIGURE 6.15**).

FIGURE 6.15 The four incentives put in place to encourage people to take out private health insurance



Private health insurance rebate

In 1999, the government introduced the 30 per cent rebate incentive. Under this scheme, policyholders received a 30 per cent rebate (or refund) on their premiums for private health insurance. In 2012, this rebate became **income tested**. In 2021, under this arrangement, individual policyholders under the age of 65 received the following rebates:

- Individuals with an income under \$90 000 received a 25 per cent rebate.
- Individuals with an income between \$90 001 and \$105 000 received a 17 per cent rebate.
- Individuals with an income between \$105 001 and \$140 000 received a 8 per cent rebate.
- Individuals with an income of more than \$140 000 received no rebate.

The threshold amounts are higher for families to reflect the extra expenses families incur compared to individuals. In 2021:

- Families earning under \$180 000 received a 25 per cent rebate.
- Families earning between \$180 001 and \$210 000 received a 17 per cent rebate.
- Families earning between \$210 001 and \$280 000 received a 8 per cent rebate.
- Families earning more than \$280 000 received no rebate.

Eligible policyholders aged between 65 and 70 received approximately an extra 4 per cent rebate, and those aged over 70 received approximately an extra 8 per cent rebate.

Eligible policyholders can opt to pay a reduced premium (with the government contributing the remainder) or pay the total and reclaim the rebate in their tax return. Although the government is paying a substantial amount to fund this incentive, it increases the affordability of private health insurance and generates much-needed funds for the health system. It also increases the proportion of people using the private system, which takes pressure off public hospitals, especially for elective surgery.

Lifetime Health Cover

A second incentive is referred to as ‘Lifetime Health Cover’. People who take up private insurance after the age of 31 pay an extra 2 per cent on their premiums for every year they are over the age of 30. For example, a person who takes out private

Income test a determination of whether an individual or family is eligible for government assistance based on their level of income

health insurance at age 40 will pay 20 per cent more for their private health insurance than someone who first takes out hospital cover at age 30. This encourages younger people to take up private health insurance and keep it for life. Having more young people with private health insurance helps offset the cost of providing healthcare for older Australians, who are more likely to need it.

The maximum Lifetime Health Cover loading payable is 70 per cent, which would apply to a person who takes out private health insurance for the first time at age 65.

Once taken out, if an individual holds private health insurance for 10 continuous years, the loading is removed and the individual will pay the same amount as someone who took out insurance at the age of 30.

Medicare levy surcharge

A third incentive is the Medicare levy surcharge. People earning more than \$90 000 a year (\$180 000 for families) pay an extra tax as a Medicare levy surcharge if they do not purchase private health insurance. The Medicare levy surcharge is calculated according to income and ranges from 1 per cent to 1.5 per cent. This encourages high income earners to take out private health insurance.

Age-based discount

In 2019, the Australian government introduced a fourth incentive referred to as the 'Age-based discount'. Under this initiative, insurers have the option of offering young people aged 18–29 a discount of up to 10 per cent for hospital cover. The discount allows for a two per cent reduction in premiums for each year that the person is aged under 30, to a maximum of 10 per cent (see **TABLE 6.4**).

TABLE 6.4 The age range and discount amounts in relation to the age-based discount incentive

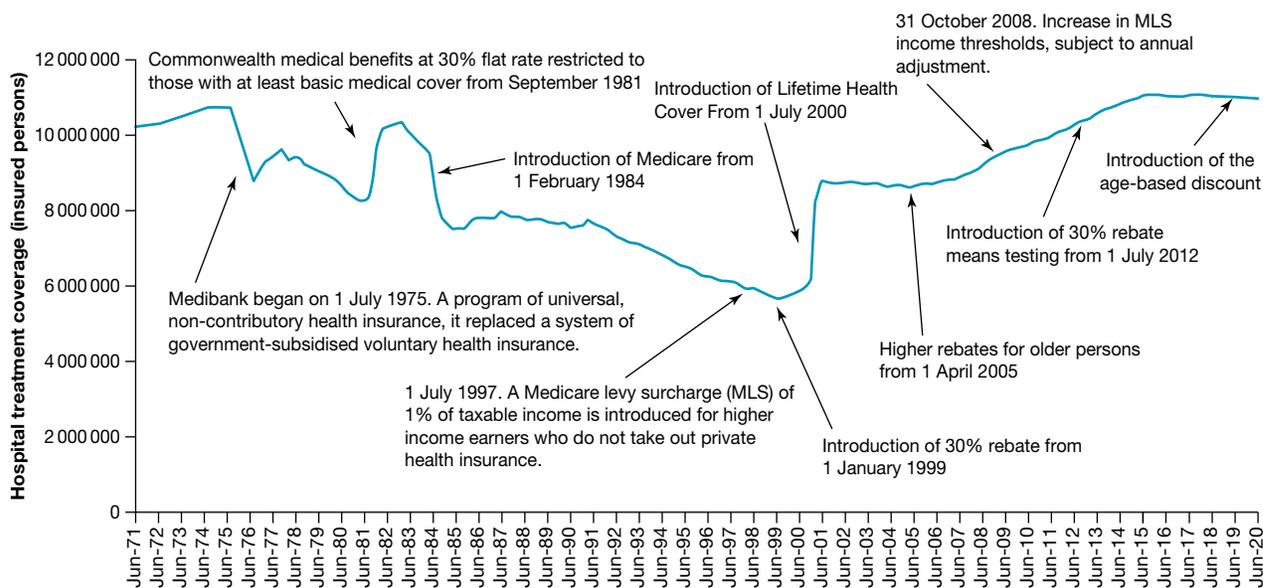
Person's age when they became insured under hospital policy offering discounts	Percentage discount that insurer may offer
18–25	10
26	8
27	6
28	4
29	2
30	0

If the insurer offers the discount, eligible policyholders will retain the initial discount rate until they reach the age of 41, after which the discount will decrease by two per cent per year until it reaches 0. So a person who joins at age 25 and receives a 10 per cent discount will receive this discount until they reach the age of 41, when it will reduce to 8 per cent. In each subsequent year, the rate will decrease by a further 2 per cent, until it reaches 0 per cent (at the age of 45). If a person joins at age 28 and receives a 4 per cent discount, this will reduce to 2 per cent when they turn 41 and they will lose this discount when they turn 42.

Like all incentives, the age-based discount is designed to encourage more people to take out private health insurance and keep it for life.

The number of people with private health insurance between 1971 and 2020, along with significant interventions, are shown in **FIGURE 6.16**.

FIGURE 6.16 Changes in private health insurance membership over time



Source: www.apra.gov.au

6.4.2 The advantages and disadvantages of private health insurance

The advantages and disadvantages of private health insurance are summarised in **TABLE 6.5**.

TABLE 6.5 The advantages and disadvantages of private health insurance

Advantages	Disadvantages
<ul style="list-style-type: none"> • Enables access to private hospital care • Choice of doctor while in public or private hospital • Shorter waiting times for some medical procedures such as elective surgery • Depending on the level of cover purchased, services such as dental, chiropractic, physiotherapy, optometry and dietetics could be paid for • Helps to keep the costs of operating Medicare under control • High income earners with private health insurance do not have to pay the additional tax, called the Medicare levy surcharge • Government rebate for eligible policy holders • ‘Lifetime Health Cover’ incentive • The age-based discount may provide cheaper private cover for those aged 18–29. 	<ul style="list-style-type: none"> • Costly in terms of the premiums that have to be paid • Sometimes have a ‘gap’, which means the insurance doesn’t cover the whole fee and the individual must pay the difference • Qualifying periods apply for some conditions (such as pregnancy) • Policies can be complex to understand and so create confusion for the average person

6.4 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

6.4 Quick quiz



6.4 Exercise

6.4 Exam questions

Learning pathways

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6, 7

■ LEVEL 3

8, 9, 10

Test your knowledge

1. Explain private health insurance.
2. Describe the four incentives used to encourage people to take up private health insurance.
3. What is a premium?
4. What is 'the gap'?
5. Identify three advantages and three disadvantages of private health insurance.

Apply your knowledge

6. Explain how private health insurance can promote:
 - a. the health and wellbeing of individuals
 - b. health status in Australia.
7. Why do you think the government provides incentives for people to take out private health insurance?
8. Why is private health insurance an essential part of Australia's health system?
9. Can people without private health insurance use private hospitals? Explain.
10. Outline two differences between Medicare and private health insurance.

6.4 Quick quiz



6.4 Exercise

6.4 Exam questions

Question 1 (2 marks)

Source: VCE 2015, Health and Human Development Exam, Q.2.a; © VCAA

The Australian healthcare system consists of private health insurance, Medicare and the Pharmaceutical Benefits Scheme (PBS).

What is private health insurance?

Question 2 (2 marks)

Source: VCE 2008, Health and Human Development Exam, Q.7.d.ii; © VCAA

Marco has been advised by his parents to take out private health insurance before his 30th birthday.

Why would Marco be advised to take out private health insurance prior to turning 30?

Question 3 (3 marks)

Outline three reasons why people take out private health insurance.

Question 4 (2 marks)

The federal government introduced four incentives to encourage people to take out private health insurance.

Identify and **explain** one of these incentives.

Question 5 (4 marks)

Michelle is a 29-year-old lawyer who enjoys playing basketball and spending time with family and friends.

Michelle and her fiancée have been discussing whether they should take out private health insurance.

Describe two advantages for Michelle if she took out private health insurance.

More exam questions are available in your learnON title.

6.5 Funding and sustainability and the role of Australia's health system

KEY CONCEPT Understanding the role of Australia's health system in promoting health: funding and sustainability

Australia's health system plays a significant role in promoting health status. Four key areas of focus guide the implementation of the health system and can be used to explore the way in which health status is targeted:

- funding
- sustainability
- access
- equity.

Each of the four areas will be explored in the coming sections and it is important to note that these areas are interrelated and impact on each other. As a result, there is some overlap in how each of the areas impact on the health system.

6.5.1 Funding

Funding of the health system relates to the financial resources that are provided to keep the health system adequately staffed and resourced so a high level of care is available for those who need it.

Funding the health system means more people can receive treatment by reducing the costs the individual must contribute. As a result, more people can access healthcare and receive treatment for a range of conditions, reducing morbidity and mortality rates.

Funding related to Medicare, the PBS, the NDIS and private health insurance contributes to improved health outcomes in Australia as shown in **TABLE 6.6**.

TABLE 6.6 Funding across Australia's health system provides better access to healthcare and improved services

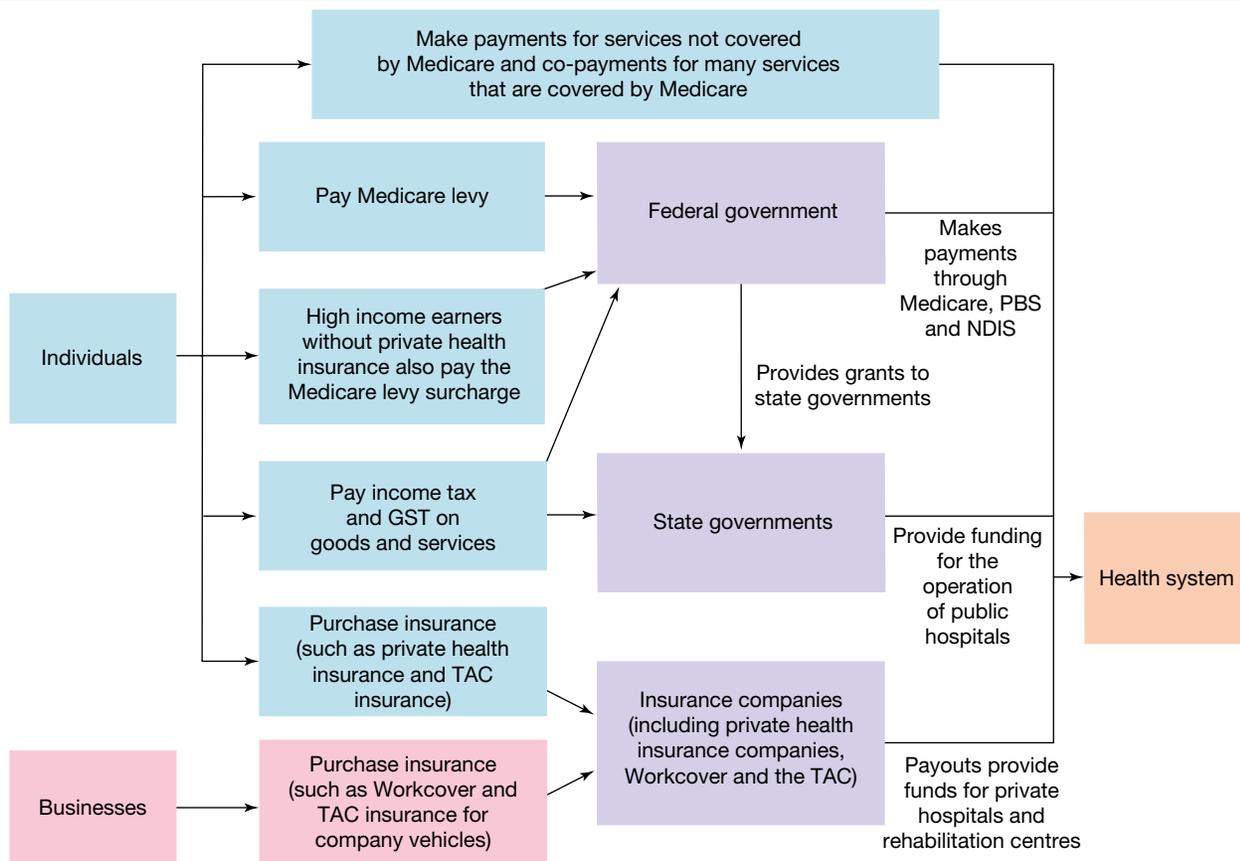
Medicare	The PBS	The NDIS	Private health insurance
<ul style="list-style-type: none"> • Medicare funds part or all of the fees associated with health services, including doctor and specialist consultations, pathology tests and fee-free treatment in public hospitals. 	<ul style="list-style-type: none"> • Essential medicines are subsidised through the PBS, providing treatment for many conditions, promoting health outcomes. 	<ul style="list-style-type: none"> • The NDIS can provide funding for a range of resources that promote health status, including carers who can provide support with daily living and staying socially connected. • Assistive technology such as wheelchairs and bed rails 	<ul style="list-style-type: none"> • Private health insurance provides much of the funding for private hospitals, which are responsible for around 40 per cent of hospital treatments. • The federal government funds the private health insurance rebate, which means private health insurance is more affordable for more people.

Funding Australia’s health system also assists in promoting health outcomes by providing:

- healthcare infrastructure — such as hospitals, consulting rooms and medical technology
- highly trained health professionals — adequate funding assists in maintaining professional standards through ongoing training and education
- personnel — administrative and support staff in public hospitals are largely funded through Medicare and government grants
- medical supplies — including those used to administer treatments such as surgical tools, tapes and bandages
- public health programs — programs that work to promote health and wellbeing and prevent disease, such as Quit and LiveLighter, are funded through the health system
- advances in knowledge and technology through research — such as developments in preventing, diagnosing and treating common conditions.

Australia’s health system operates with the combined funding from the federal and state/territory governments, private health insurance, other forms of insurance funds and individuals (see **FIGURE 6.17**).

FIGURE 6.17 Funds reach the healthcare system through numerous avenues.



Total expenditure on health in 2018–19 was \$195.7 billion compared with an expenditure of \$189.7 billion the previous year, an increase of around 3 per cent. This represented an average rate of health expenditure in 2018–19 of about \$7772 per person.

In 2018–19 total health expenditure as a proportion of gross domestic product was around 10 per cent; in 1995–96 the proportion was 7.5 per cent. When costs are kept constant to 2018–19 prices, increases in expenditure over time can be analysed as shown in **FIGURE 6.19**. Increasing health costs have occurred over time, largely due to:

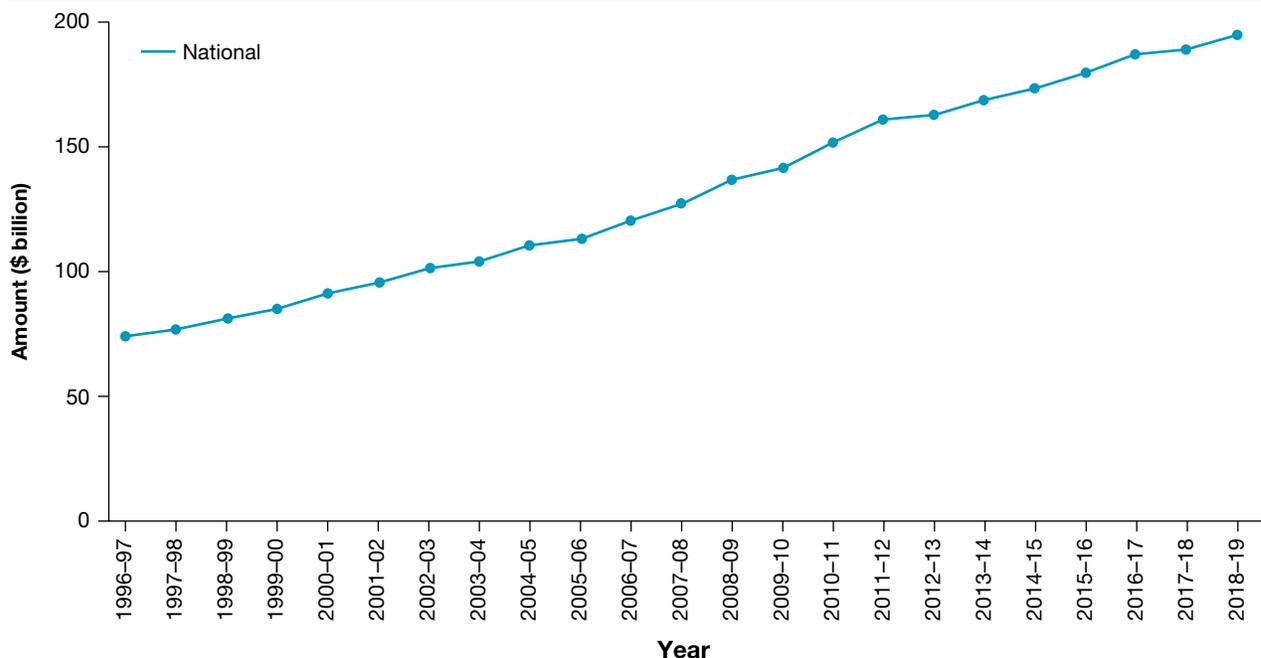
- an ageing population — the average age is increasing in Australia. This results in a higher proportion of chronic conditions requiring care.
- increasing incomes, a growing economy and rising expectations — rising incomes and a growing economy mean that there is more money available to spend on healthcare. As more money becomes available, the population expects that more can be done to improve their health and wellbeing when required.
- more expensive technologies and services — as research and development progress, there are more medical technologies and services available and these contribute to increased expenditure.
- increased cost of medicines — many medicines included on the PBS have increased in price over time, contributing to higher health-related expenditure.

A great challenge for governments and non-government groups is to devise systems to continue to fund the health system into the future so it can continue to provide the quality of care that people expect.

FIGURE 6.18 Some healthcare funding is used to promote skills among health professionals such as hygiene practices, which can reduce the risk of infection in the healthcare setting.



FIGURE 6.19 Expenditure on healthcare over time (figures constant to 2018–19 prices)



Source: Australian Institute of Health and Welfare. (2020). *Health expenditure Australia 2018–19*. Canberra: AIHW.

Funding for most goods and services is shared between federal and state/territory governments and the private sector, including private health insurance and contributions made by individuals. In 2018–19, around 68 per cent of the health system’s funding came from the government (see **FIGURE 6.20**). Of this, almost two-thirds came from the federal government and one-third from state/territory and local governments. The federal government’s main contribution is through schemes such as Medicare, the PBS and the NDIS. The Medicare levy and the additional surcharge raised about \$16.05 billion in 2017–18, while Medicare paid out \$23.2 billion. As the Medicare levy and surcharge do not generate enough money to fully fund the Medicare scheme,

some general taxation revenue is also contributed to Medicare. The PBS is funded through general taxation revenue and contributed almost \$12.6 billion in funding in 2019–20. In 2014, the Medicare levy was increased by 0.5 per cent to help fund the NDIS, the remainder of which is funded by taxation revenue collected by the federal and state/territory governments.

The private (non-government) sector contributed around \$62 billion or 32 per cent of total health system funding in 2018–19.

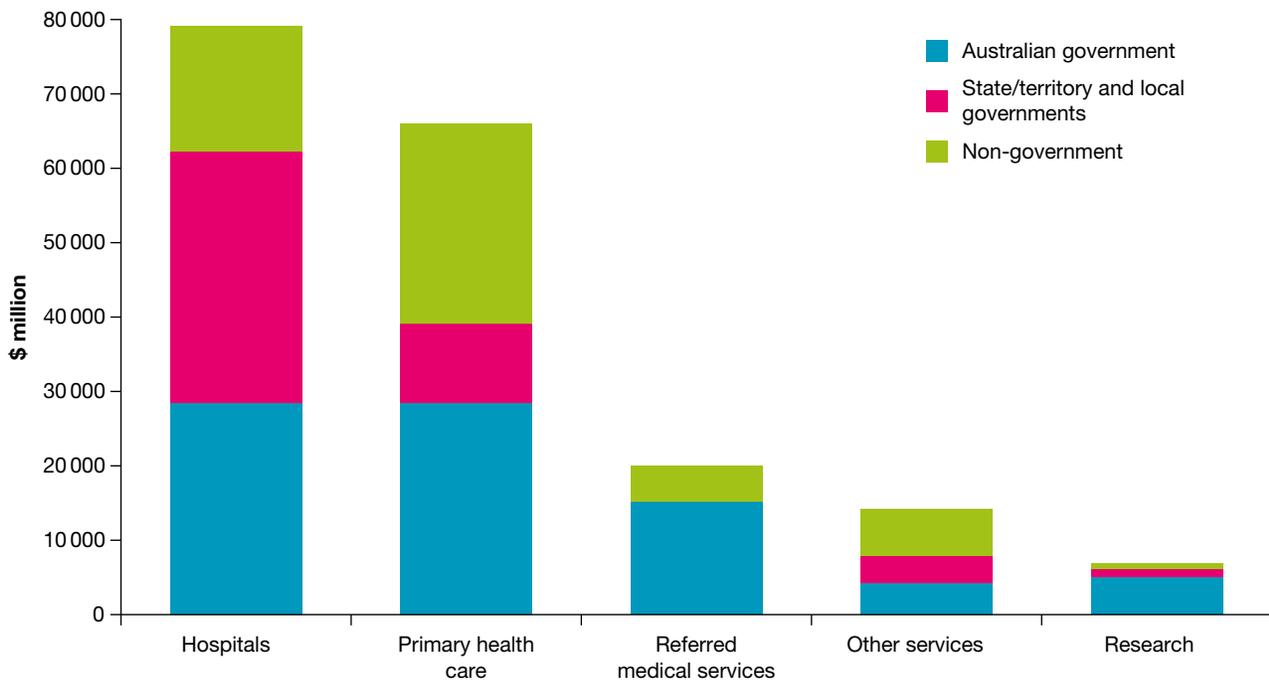
The main categories of health expenditure in 2018–19 were:

- hospitals — this group was the greatest recipient of funding and includes both private and public hospitals.
- primary healthcare — primary healthcare relates to general health-related goods and services delivered outside of the hospital environment. It includes general practitioner’s consultations, dental services, medications and public health initiatives.
- referred medical services — these services relate to specialist’s consultations that have been referred by a general practitioner.
- other services — these include patient transport, aids and appliances (including hearing aids, glasses and wheelchairs), and administration of healthcare facilities.
- research — this relates to health-related research that aims to discover new ways to prevent, diagnose and treat illness.



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FIGURE 6.20 Recurrent health expenditure by area of expenditure and source of funds, 2018–19



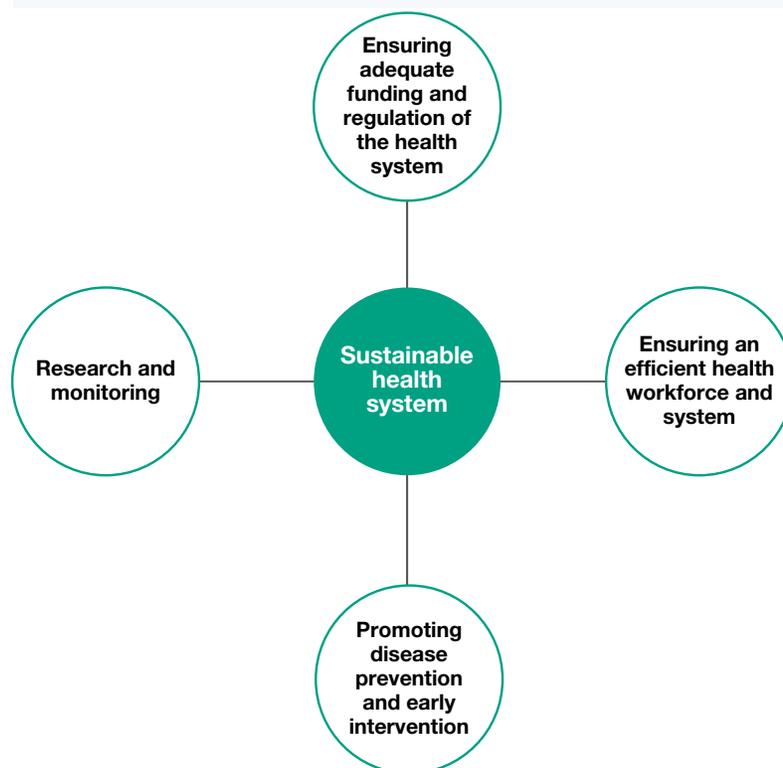
Source: <https://www.aihw.gov.au/reports/health-welfare-expenditure/health-expenditure-australia-2018-19/contents/data-visualisation>

6.5.2 Sustainability

The sustainability of the Australian health system relates to its capacity to provide a workforce and infrastructure such as facilities and equipment into the future, and to be innovative and responsive to emerging needs through interventions such as research and monitoring.

As the population grows and ages, and different needs emerge within the Australian population, the health system is experiencing increasing pressure. The system must be equipped so it can evolve to ensure that a high quality of care is continually available for anyone in need. Promoting a sustainable health system involves a range of considerations as shown in **FIGURE 6.21**.

FIGURE 6.21 Key considerations of a sustainable health system



Funding and regulation

Funding is crucial to the sustainability of the health system. Adequate funds must be available to ensure that the health system can continue to cater to the needs of the population into the future. As explored in section 6.5.1, healthcare funding in Australia has increased over time and currently sustains the health system.

Regulating the health system helps it remain sustainable by promoting the efficient use of funds and other resources. The federal and state/territory governments are responsible for most of the regulations applied to the health system.

State and territory governments are responsible for managing public hospitals and play a key role in ensuring that funds are used in a sustainable manner.

TABLE 6.7 Sustainability within the health system

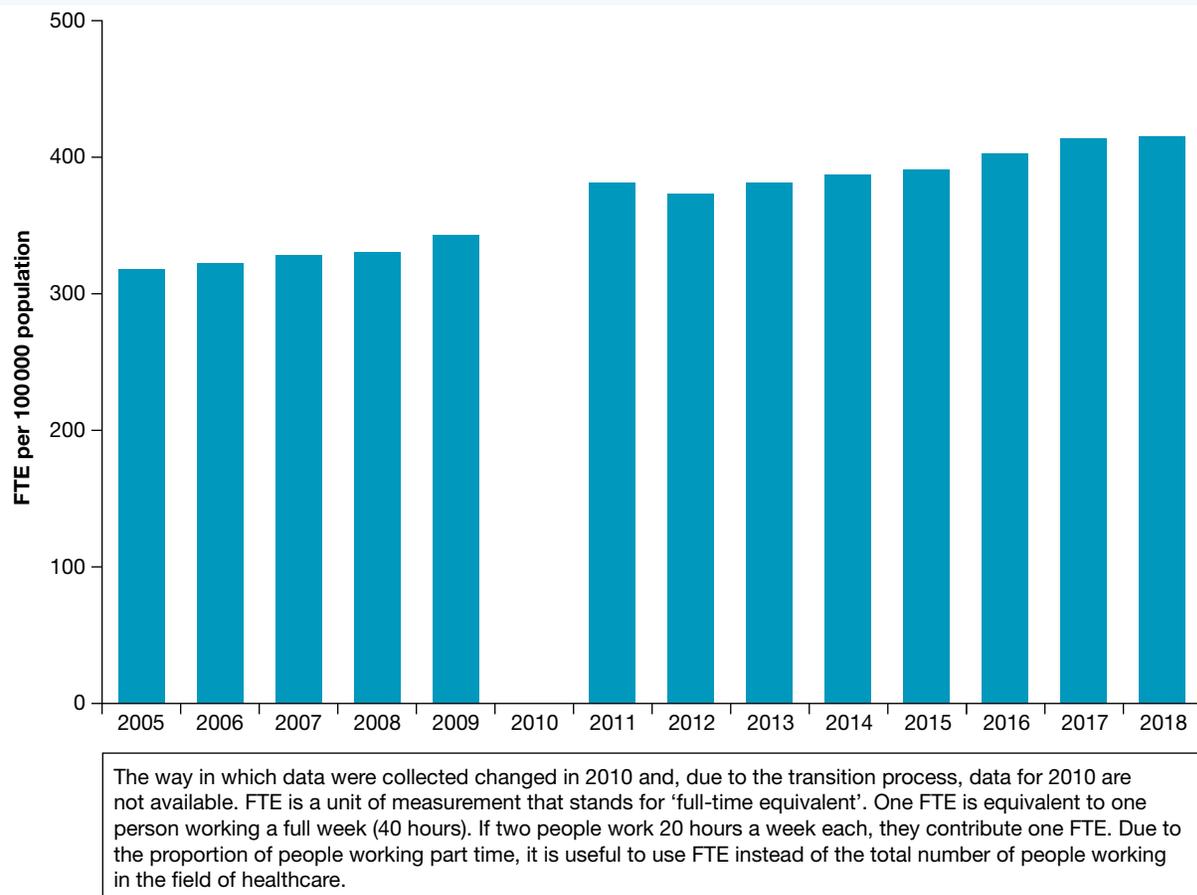
Medicare	The PBS	The NDIS	Private health insurance
<ul style="list-style-type: none"> Determining which services will be subsidised through Medicare can preserve funds for the most necessary services, yielding the greatest gains in health outcomes. The Medicare levy increased from 1.5 to 2 per cent in July 2014 to assist in providing the necessary funds to maintain Australia's health system and introduce the National Disability Insurance Scheme. 	<ul style="list-style-type: none"> Continually reviewing the medicines available through the PBS means those that will have the greatest benefits are prioritised, which assists in keeping the scheme sustainable. The Therapeutic Goods Administration (a federal government body) verifies the effectiveness of all PBS medicines. This contributes to improved treatment and less reliance on the health system. 	<ul style="list-style-type: none"> Each participant in the NDIS receives an individualised plan, which means that only necessary funds are spent on each person. As a result, more people can access the NDIS and experience improved health outcomes. 	<ul style="list-style-type: none"> Incentives such as the private health insurance rebate, Lifetime Health Cover and the age-based discount assist in maximising the funding gained through the private system. This means more people are treated through the private system, which reduces the strain on the public system, improving health outcomes for more people.

An efficient health system and workforce

The healthcare workforce in Australia consists of a range of healthcare practitioners, and administrative and support staff. Ensuring that the health workforce is adequately staffed with highly trained healthcare practitioners is another important aspect of a sustainable health system, and responsibility for this rests with the state and territory governments. The health workforce must continue to develop in size and skill in order to achieve the objective of improving health and wellbeing for all Australians. Ensuring health services are delivered in an efficient manner assists in reducing health-related costs.

The rate of medical practitioners has increased over time in Australia (see **FIGURE 6.22**).

FIGURE 6.22 Employed medical practitioners: FTE per 100 000 population, 2005–18



Source: <https://www.aihw.gov.au/reports/australias-health/health-workforce>

The federal and state/territory governments are also working to improve the efficiency of the health system. A key aspect of this work is the development of an electronic health record (eHealth) system in Australia, referred to as 'My Health Record'. My Health Record promotes sustainability by streamlining the recordkeeping system and allowing healthcare information to be accessed electronically by an individual's healthcare provider anywhere in Australia. It also works to promote individual's health literacy by providing greater access to and control over healthcare information, which helps to improve health status.

Disease prevention and early intervention

A key intervention for reducing the strain on the health system is to reduce the number of people who need to use it. This is done through disease prevention, early detection and health promotion. The health system plays a key role in this process by providing:

- Free testing for infectious diseases such as COVID-19 — this works to reduce the strain on the health system, allowing more resources to be used for other conditions.
- Public cancer screening such as BreastScreen and BowelScreen — early detection can reduce the cost of treatment and improve health status.
- Immunise Australia Program — providing free vaccines for 16 diseases to people at specific ages. Reducing the incidence of these diseases through vaccination is a cost-effective intervention that saves the health system millions of dollars in treatment costs.
- Health promotion programs — programs implemented by government and non-government groups that work to decrease the risk or impact of diseases reduce the strain on the health system as fewer people require healthcare. Examples of health promotion programs include Quit, LiveLighter and SunSmart.

FIGURE 6.23 The BowelScreen Australia logo



Research and monitoring

Through the National Health and Medical Research Council (NHMRC), the government funds research into a range of health- and medical-related areas. NHMRC supports research to find new ways to cure, treat and prevent illness and disease, and to improve the effectiveness of health services in Australia. Examples of research funded by the NHMRC include:

- reducing the spread and impact of sexually transmissible infections, especially among high-risk groups such as young people, Aboriginal and Torres Strait Islander peoples and homosexual men
- new therapies for treating cancer
- developing new and more effective vaccines for a range of infectious diseases
- creating new ways to prevent and treat influenza
- suicide prevention among Aboriginal and Torres Strait Islander youth

FIGURE 6.24 Research is vital in ensuring the sustainability of the health system.

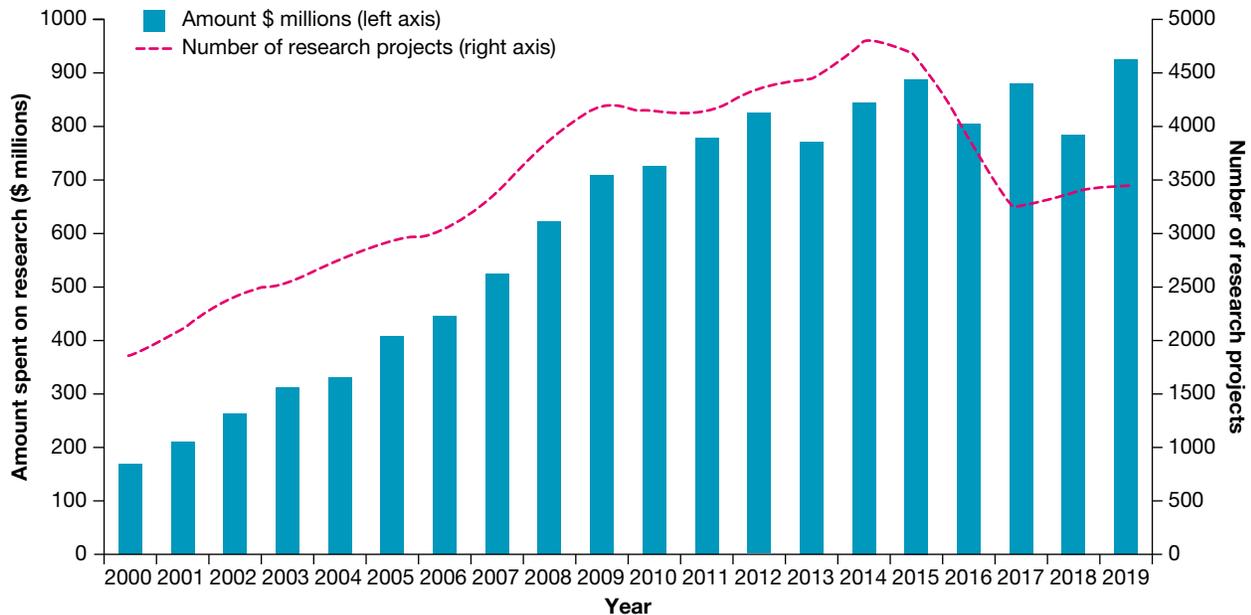


- preventing chronic disease through health promotion, including in Aboriginal and Torres Strait Islander communities
- provide rapid and evidence-based advice to the Chief Medical Officer during the COVID-19 pandemic
- a range of studies to improve the public health and medical responses to the COVID-19 outbreak.

Through research projects such as these, the NHMRC assists in preventing disease and treating illness more effectively and efficiently, therefore saving valuable health system funding and promoting sustainability.

FIGURE 6.25 shows the total amount spent on research through the NHMRC between 2000 and 2019 and the total number of research projects receiving funding each year. Projects lasting more than one year are included for each year that they received funding.

FIGURE 6.25 Total health research funding from the NHMRC and the number of research projects being undertaken as a result



Source: Adapted from 'Research funding statistics and data', www.nhmrc.gov.au

6.5 Activities

1. Access the **My Health Record** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **PBS** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

- Digital documents** My Health Record worksheet (doc-32203)
PBS worksheet (doc-32204)
- Weblinks** My Health Record
PBS

6.5 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

6.5 Quick quiz



6.5 Exercise

6.5 Exam questions

Learning pathways

■ LEVEL 1

1, 3, 4, 8

■ LEVEL 2

2, 5, 6, 9

■ LEVEL 3

7, 10, 11

Test your knowledge

1. Identify the four areas that can be used to explore the way the health system targets health status in Australia.
2. Outline how the Australian health system is funded. You may need to refer to **FIGURE 6.17**.
3. Identify five sources of health system funding.
4. Explain what sustainability refers to in the health system.
5.
 - a. Explain what is meant by eHealth.
 - b. Explain how eHealth can promote the sustainability of the health system.
6. Using examples, explain how disease prevention and early intervention can promote health status in Australia.
7. Explain how research can promote health status in Australia.

Apply your knowledge

8. Complete the following table explaining how each of the following can promote health outcomes in relation to funding and sustainability:

	Funding	Sustainability
Medicare		
The PBS		
The NDIS		
Private health insurance		

9.
 - a. Using data, describe the change in health system funding over time according to **FIGURE 6.19**.
 - b. Outline three reasons why health system funding has increased over time.
10.
 - a. Identify the top three areas of health expenditure according to **FIGURE 6.20**.
 - b. Explain what these areas relate to.
 - c. Which model of health do these areas reflect?
11.
 - a. Using data, outline the change in the rate of medical practitioners over time according to **FIGURE 6.22**.
 - b. Explain how this change can promote sustainability of the health system.

6.5 Quick quiz



6.5 Exercise

6.5 Exam questions

Question 1 (2 marks)

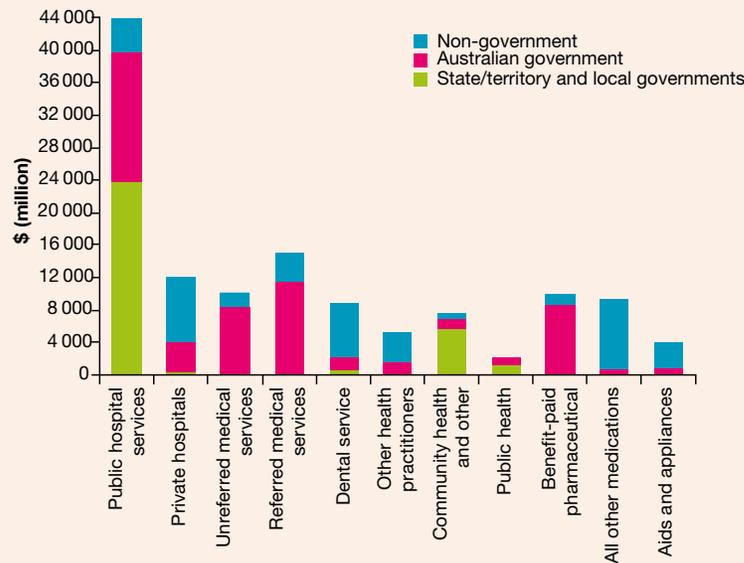
Outline two actions that the federal government has undertaken to ensure sustainability of the Australian health care system.

Question 2 (1 mark)

Review the data in the following graph.

From **where** do most private hospital services receive most of their funding?

Recurrent health expenditure by area of expenditure and source of funds, 2012–13



Source: AIHW, *Health expenditure in Australia, 2012–13, 2014.*

Question 3 (3 marks)

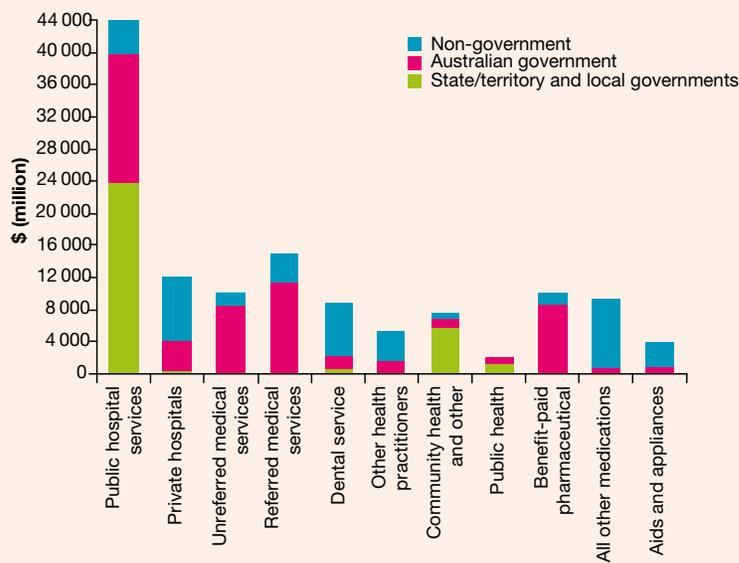
Identify how a sustainable health care system can be achieved.

Question 4 (3 marks)

Review the data in the following graph.

Identify one example of health expenditure where the Australian government is responsible for most of the funding and **describe** how this example improves the health status of Australians.

Recurrent health expenditure by area of expenditure and source of funds, 2012–13



Source: AIHW, *Health expenditure in Australia, 2012–13, 2014.*

More exam questions are available in your learnON title.

6.6 Access and equity and the role of Australia's health system

KEY CONCEPT Understanding the role of Australia's health system in promoting health: access and equity

6.6.1 Access

An accessible health system is one that can provide all people with timely access to quality health services based on their needs, not ability to pay, regardless of where they live in the country. This means that access must be available to people from all socioeconomic groups and those living within and outside of Australia's major cities.

Access to healthcare promoted by Medicare, the PBS, the NDIS and private health insurance contribute to improved health outcomes in Australia as shown in **TABLE 6.8**.

Despite these interventions, some people still struggle to meet the costs associated with healthcare — particularly in relation to patient co-payments for consultations and medications, allied health services such as physiotherapy, ambulance transport and treatment and dentistry. According to the AIHW (2018), almost one in five (19 per cent) of people delayed or avoided a visit to the dentist due to cost. Delaying medical treatment can cause conditions to progress and contribute to further ill health.

FIGURE 6.26 Dentistry often requires the patient to pay, and this can prevent people from accessing this important health service.

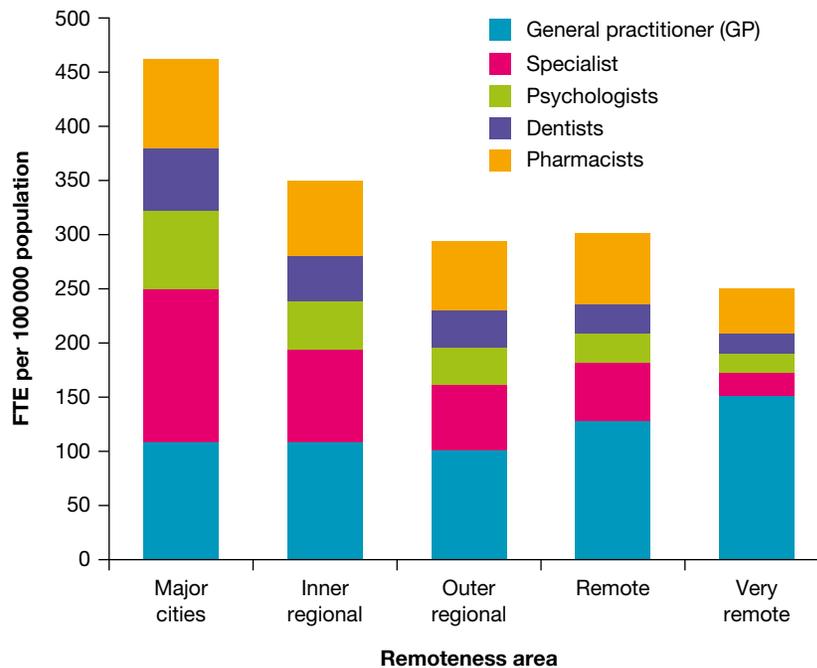


TABLE 6.8 Access to healthcare contributes to improved health outcomes in Australia.

Medicare	The PBS	The NDIS	Private health insurance
<ul style="list-style-type: none"> Medicare provides access to people of all socioeconomic backgrounds to services such as doctors' consultations and treatment in public hospitals. Medicare provides funding for telephone and video consultations, which can assist those living outside major cities in accessing health services. 	<ul style="list-style-type: none"> All Australian citizens and permanent residents are entitled to access subsidised medicines through the PBS. The PBS promotes access to essential medicines for low income earners by including a concessional co-payment amount. 	<ul style="list-style-type: none"> The NDIS improves access to health services for people with significant, life-long disabilities. The NDIS has been rolled out in every region of Australia, improving access for those living outside major cities. 	<ul style="list-style-type: none"> The federal government's private health insurance rebate increases access to private health insurance for those on lower incomes. Private health insurance can increase access to health services that may have otherwise been too expensive for patients to afford.

As explored earlier, an increase in medical practitioners per 100 000 population in Australia indicates an overall increase in the ability to access healthcare when required, but access is not the same for people in all regions. Although rates of general practitioners are similar for all regions, those in major cities have greater access to a wider range of health professionals, including specialists (see **FIGURE 6.27**).

FIGURE 6.27 Employed health professionals — FTE per 100 000 population: by selected areas of practice and remoteness area, 2017



Source: Department of Health 2019

Governments and non-government organisations work to increase access in all geographical areas through a range of interventions including:

- Royal Flying Doctor Service — a non-government organisation that provides healthcare to thousands of Australians living outside of major cities. The Royal Flying Doctor Service receives funding from the federal and state/territory governments to maintain its fleet of air and road vehicles and reach and treat those in need.
- Workforce Incentive Program — a federal government strategy that aims to provide financial incentives for doctors who work in rural and remote areas. It increases access to healthcare for those living outside Australia's major cities.

Access to culturally appropriate healthcare is also a consideration in Australia, especially for Aboriginal and Torres Strait Islander peoples. The federal and state/territory governments have developed the Indigenous Health Incentive, which provides financial incentives to medical practices to provide culturally appropriate healthcare for Aboriginal and Torres Strait Islander peoples. Through the Close the Gap initiative, governments have invested in other strategies as a part of the National Aboriginal and Torres Strait Islander Health Plan 2013–2023, which includes further training for Aboriginal and Torres Strait Islander health workers and working with Aboriginal and Torres Strait Islander groups and leaders to plan service delivery. While these initiatives have succeeded in increasing access to culturally appropriate healthcare, many Aboriginal and Torres Strait Islander people still lack such access and this contributes to the variations in health status between Aboriginal and Torres Strait Islander peoples and other Australians.

FIGURE 6.28 For Aboriginal and Torres Strait Islander peoples, culturally appropriate healthcare often involves Indigenous practitioners.



6.6.2 Equity

As already discussed, all Australians should be able to access healthcare when required. Achieving equality in access is important, as some people — such as Aboriginal and Torres Strait Islander peoples and those living outside of major cities — do not have the same access to health services as others. Equal access, however, does not necessarily mean the system is equitable. As Australians have different healthcare needs; the health system must take these differences into account if it is to be equitable and fair for all people.

A range of factors contribute to disadvantage in using the health system including chronic illness, poverty, discrimination and access to goods and services. An equitable health system must recognise and respond to those with special needs.

Equity relating to Medicare, the PBS, the NDIS and private health insurance contribute to improved health outcomes in Australia as shown in **TABLE 6.9**.

TABLE 6.9 Equity within the health system contributes to improved health outcomes in Australia

Medicare	The PBS	The NDIS	Private health insurance
<ul style="list-style-type: none"> • Medicare Safety Net — people who require frequent services covered by Medicare, such as doctor's visits and tests, receive additional financial support • Mental Health Treatment Plans — those with mental health disorders are eligible for 10 individual and 10 group therapy sessions per calendar year with the cost covered by Medicare 	<ul style="list-style-type: none"> • PBS Safety Net — further protects individuals and families from large overall expenses for PBS-listed medicines • The concessional co-payment amount provides greater assistance to those who are unemployed or on low incomes. • Many Aboriginal and Torres Strait Islander peoples can qualify for reduced PBS co-payment amounts under the Closing the Gap initiative. 	<ul style="list-style-type: none"> • The individualised plan developed as a part of the NDIS ensures that those with more significant needs receive more assistance. • Those who require the NDIS do not have to pay more towards funding it than those who don't. 	<ul style="list-style-type: none"> • Those on lower incomes receive more financial assistance through the private health insurance rebate. • Those aged 65 and over (who often have lower incomes) receive a greater rebate from the government if they have private health insurance. • People who use their private health insurance more often than others do not have to pay a higher premium.

Other interventions designed to promote equity include:

- interventions to increase access (discussed earlier) for those of low socioeconomic status, those living outside of major cities and Aboriginal and Torres Strait Islander peoples
- public dental health services — the Victorian Government funds the Royal Dental Hospital of Melbourne and more than 80 dental clinics in metropolitan and regional Victoria to provide dental treatment that is generally fee-free for vulnerable groups including:
 - young people aged 13–17 years who are healthcare or pensioner concession cardholders or dependents of concession cardholders
 - all youth justice clients in custodial care, up to 18 years of age
 - all refugees and asylum seekers
 - Aboriginal and Torres Strait Islander peoples.
- Continuity between healthcare providers — continuity aims to increase the level of communication and care planning between different health professionals, making the process of care more manageable for any patient with multiple healthcare needs. For example, a cancer patient may be under the care of a general practitioner and numerous specialists. Communication between these health professionals promotes equity for people with serious illness by coordinating care on behalf of the patient.

These interventions help to meet the specific needs of many Australians, thereby helping achieve equity in use of the health system. This in turn promotes the health and wellbeing of vulnerable populations.

6.6 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

6.6 Quick quiz



6.6 Exercise

6.6 Exam questions

Learning pathways

■ LEVEL 1

1, 5

■ LEVEL 2

2, 3, 4

■ LEVEL 3

6, 7

Test your knowledge

1. Explain what is meant by 'access' in Australia's health system.
2. Outline three ways that access to the health system has been promoted for low socioeconomic status groups in Australia.
3. Outline two ways that access to the health system has been promoted for those living outside of major cities in Australia.
4. Explain three interventions that have been implemented to promote equity in the health system in Australia.

Apply your knowledge

5. Complete the following table by explaining how each of the following can promote health outcomes in relation to access and equity:

	Access	Equity
Medicare		
The PBS		
The NDIS		
Private health insurance		

6. a. Outline the difference in the rate of employed medical practitioners between major cities and other areas in Australia according to **FIGURE 6.27**.
b. Explain how this may contribute to variations in health status between those living within and outside of major cities in Australia.
7. Outline two ways that culturally appropriate healthcare can be promoted for Aboriginal and Torres Strait Islander peoples.

6.6 Quick quiz



6.6 Exercise

6.6 Exam questions

Question 1 (4 marks)

Source: VCE 2019, Health and Human Development Exam, Q.10; © VCAA

Analyse how the PBS demonstrates sustainability and equity.

Question 2 (3 marks)

Outline three interventions/actions introduced by the government that improve access to healthcare in Australia.

Question 3 (4 marks)

Briefly **explain** the role of the health system in promoting health status in relation to:

- a. funding
- b. equity.

2 marks
2 marks

More exam questions are available in your learnON title.

6.7 KEY SKILLS

6.7.1 Analyse the role of Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme in promoting Australia's health

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KEY SKILL Analyse the role of Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme in promoting Australia's health

Tell me

This skill requires a detailed understanding of the key components of Australia's health system including:

- Medicare
- the Pharmaceutical Benefits Scheme
- the National Disability Insurance Scheme
- private health insurance.

Detailed knowledge of the various aspects of each component of the health system as listed is important in explaining the role each plays in promoting health and wellbeing and health status in Australia. This includes:

- the services covered by Medicare
- the services not covered by Medicare
- how Medicare is funded
- the contribution private health insurance makes to the health system
- the options available to an individual with private health insurance
- the incentives used to encourage people to take out private health insurance
- the function of the Pharmaceutical Benefits Scheme
- the support provided by the National Disability Insurance Scheme
- how funding, sustainability, access and equity apply to the health system and are reflected by each component of the health system
- making links between each component of the health system and improved health and wellbeing and health status.

Show me

An example of this skill could be explaining the role that Medicare plays in improving health outcomes in Australia in relation to funding and equity. A possible response could be as follows.

Medicare is Australia's universal health insurance scheme and contributes a significant amount of funding for doctors' consultations and treatment in public hospitals.¹ This means that Australians with medical problems can have them checked and treated if necessary, treating symptoms of disease and substantially reducing the risk of premature death and improving mortality rates.² The Medicare Safety Net provides additional subsidies for services such as specialists' consultations once a set amount has been paid in relation to Medicare funded services in a calendar year.³ This promotes equity for those with chronic or ongoing medical issues requiring treatment by reducing the cost of treatment and promotes mental health and wellbeing by reducing the level of stress associated with paying for healthcare.⁴

1 How Medicare contributes to funding of the health system is specified.

2 This statement outlines how Medicare promotes health status in relation to funding.

3 How Medicare contributes to equity in the health system is identified.

4 This statement explains how Medicare promotes health and wellbeing in relation to equity.

Practise the key skill

1. What is Australia's universal health insurance scheme called?
2. Discuss the contribution private health insurance makes to Australia's health system.
3. Outline two ways the National Disability Insurance Scheme promotes health and wellbeing in Australia.
4. Explain how Medicare, the Pharmaceutical Benefits Scheme and private health insurance can promote the health and wellbeing of an individual with cancer.
5. Create a table like the following that includes the four key components of the Australian healthcare system, a brief description of each and how it promotes health in relation to funding, sustainability, access and equity.

		How it promotes health in relation to:			
Component of the health system	Description	Funding	Sustainability	Access	Equity
Medicare					
PBS					
NDIS					
Private health insurance					

6.8 Review

6.8.1 Topic summary

6.2 Medicare

- Australia's health system is made up of public and private providers.
- Public healthcare includes public hospitals, Medicare, the Pharmaceutical Benefits Scheme and National Disability Insurance Scheme.
- Private healthcare includes private health insurance, private hospitals and medical practitioners in private practices.
- Medicare is Australia's universal health insurance scheme. It provides necessary treatment and hospital care in public hospitals for all Australians.
- Medicare is funded through three sources of income: the Medicare levy, the Medicare levy surcharge, and general taxation.

6.3 The Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme

- The Pharmaceutical Benefits Scheme (PBS) subsidises more than 5000 essential medications, with individuals responsible for making a patient co-payment.
- Medicare and the PBS have safety nets in place to provide further support for those with extensive medical bills.
- The National Disability Insurance Scheme (NDIS) is a national insurance scheme that provides services and support for people with permanent, significant disabilities, and their families and carers.

6.4 Private health insurance

- Private health insurance companies play an important role in healthcare in Australia. They give people wider choice and assist in funding the health system.
- To encourage Australians to take out private health insurance, four incentives were created by the federal government: the private health insurance rebate, Lifetime Health Cover, the Medicare levy surcharge and the age-based discount.

6.5 Funding and sustainability and the role of Australia's health system

- Funding the health system increases access for all people by reducing the costs the individual must contribute for required treatment.
- Australia's health system operates with the combined funding from the federal and state/territory governments, private health insurance, other forms of insurance funds and individuals.
- Health costs have increased over time, and funding is an important consideration moving into the future.
- The sustainability of the Australian health system relates to the capacity to provide a workforce and infrastructure such as facilities and equipment, and to be innovative and responsive to emerging needs through interventions such as research and monitoring.
- Sustainability is promoted by adequate funding and regulation to increase the efficiency of the health system. Preventing disease and carrying out research and monitoring are also important considerations for sustainability.

6.6 Access and equity and the role of Australia's health system

- An accessible health system is one that can provide all people with timely access to quality health services based on their needs, not ability to pay, regardless of where they live in the country.
- Government support in the form of subsidised healthcare and medicines, fee-free treatment in public hospitals, and support provided through the NDIS, increase accessibility.
- All Australians have different healthcare needs so an equitable system provides more support for those who need it, such as the Medicare and PBS safety nets.

6.8.2 Key terms

Allied health services health services provided by trained health professionals who are not doctors, dentists or nurses. Examples include services provided by physiotherapists, psychologists and occupational therapists.

Assistive technology a device, system or design that allows an individual to perform a task that they would otherwise be unable to do, or increase the ease and safety with which a task can be performed

Bulk billing when the doctor charges only the schedule fee. The payment is claimed directly from Medicare so there are no out-of-pocket expenses for the patient.

Income test a determination of whether an individual or family is eligible for government assistance based on their level of income

Patient co-payments the payment made by the consumer for health products or services in addition to the amount paid by the government

Premium the amount paid for insurance

Protected Special Category visa these visas are held by some people who arrived in Australia on a New Zealand passport and meet other specific criteria

Schedule fee the amount that Medicare contributes towards certain consultations and treatments. The government decides what each item is worth and that's what Medicare pays. Doctors and private hospitals may choose to charge more than the schedule fee.



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6.8.3 Extended response: build your exam skills

Discuss, including showing your own knowledge

In previous subtopics, the requirements of questions, interpreting stimulus material and finding links between the information provided has been addressed. In this section, you will practise those skills but also learn how to incorporate your own knowledge to answer extended response questions to a high standard.

Extended response questions often require detailed analysis. When answering questions that require analysis, high level responses include connections between the information provided and other information that demonstrates a broad understanding of the concepts being assessed. This can mean showing links or connections between your own knowledge and the information presented in the stimulus material, to explain the potential reasons and/or impacts of particular scenarios. It may also involve discussing the strengths and limitations, or potential positive and negative impacts, of the scenario/s in question.

Consider the following question:

Using the information provided and your own understanding, analyse how the health system promotes health status and health and wellbeing in relation to equity and sustainability. **10 marks**

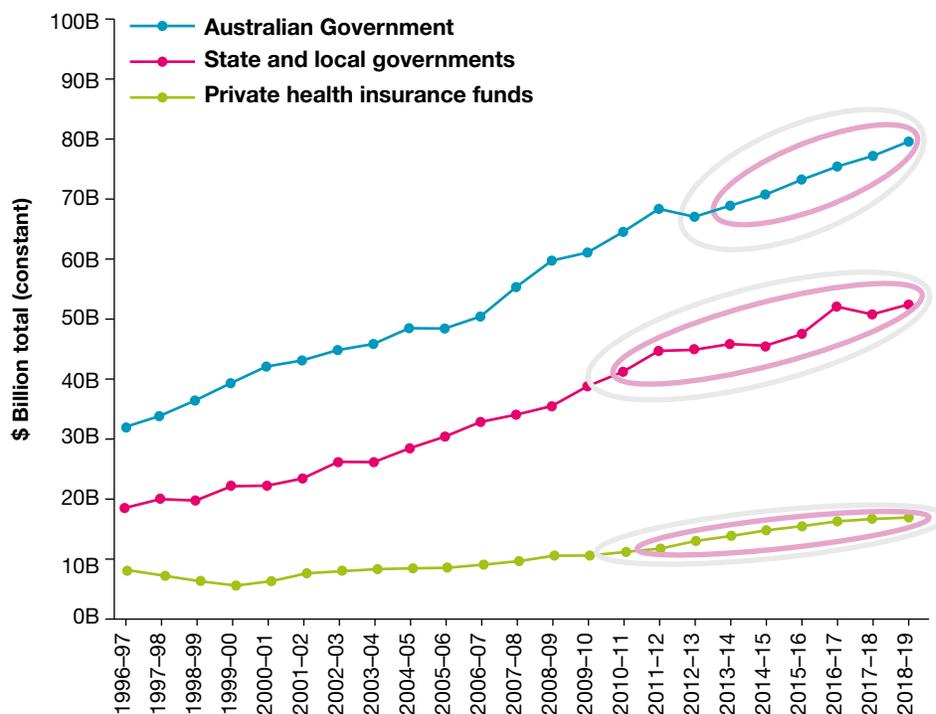
Step 1: As suggested in the previous topic, the first step is colour coding the different aspects of the question so that it is easier to identify the information in the stimulus material that may be relevant.

- Use the information provided
- Use your own understanding
- Analyse how the health system promotes health status in relation to equity and sustainability
- Analyse how the health system promotes health and wellbeing in relation to equity and sustainability.

Step 2: Next, read each part of the stimulus material and highlight in the relevant colour any information that relates to a component of the question. This will also allow you to consider the additional information that you can add from your own knowledge by looking for gaps not provided in the stimulus. This is shown in the following sources.

Source 1

Sources of health system funding over time, constant prices. Constant prices take inflation into account so expenditure in different years can be compared fairly.



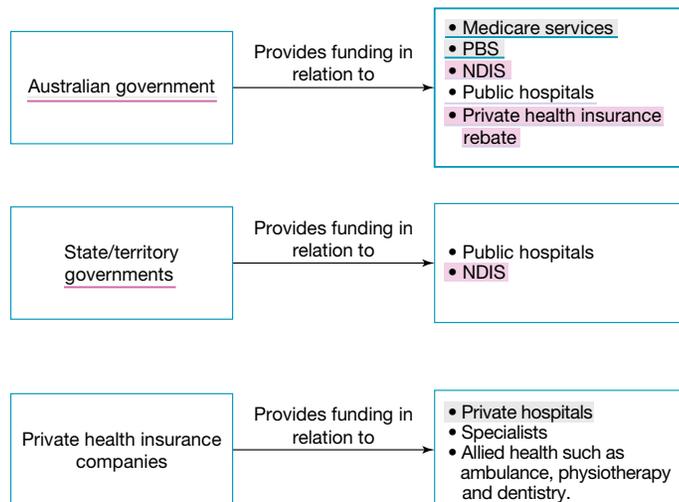
Source: <https://www.aihw.gov.au/reports/health-welfare-expenditure/health-expenditure-australia-2018-19/contents/data-visualisation>

Source 2

Sunny is 31 years of age and is a qualified librarian. Last year, he took out private health insurance for the first time. Six months ago, Sunny sustained a significant, permanent disability when he was paralysed after falling while painting the roof of his house. He hasn't been able to work since the accident and has been receiving a government pension. Sunny will require ongoing healthcare but with adequate support he will be able to maintain his social life, continue to live independently and return to his job where he earns \$80 000 a year.

Source 3

The following diagram shows ways that the Australian government, state and territory governments and private health insurance companies contribute funds to the health system.



You will see that **SOURCES 1, 2 and 3** each relate to more than one aspect of the question. This means you can discuss the connections to the stimulus material when you are addressing each of the components of the question.

According to Source 1¹, the amount of money spent by the Australian and state/territory governments has increased over time. This can mean that there is more support for people like Sunny (Source 2) through Medicare services² such as public hospital treatments and doctors' and specialists' consultations (Source 3). Sunny will also be eligible for the private health insurance rebate, which makes his premiums cheaper³ and reflects equity. By being able to access services covered under private health insurance, such as rehabilitation services, Sunny may be able to learn ways to live with his injury so he can continue to work, which can provide him with a sense of purpose in life and enhances his spiritual health and wellbeing.⁴ The private health insurance rebate makes private cover more affordable for lower income earners, meaning that they can skip public hospital waiting lists for elective surgery, reducing rates of morbidity and mortality.⁵

An increase in funding through private health insurance providers can mean that more money is being provided to public hospitals. This is cheaper for the government as Medicare pays 75 per cent of the schedule fee, instead of 100 per cent.⁶ This means more money is preserved for other areas such as the NDIS (Source 3), which promotes sustainability.⁷ The NDIS provides recipients with an individualised plan, which means that only necessary funding is provided and reflects sustainability as there will be more money to spend in the future. When people like Sunny can access support through the NDIS, they are more likely to be able to spend time with friends, which enhances social health and wellbeing.⁸ It also means that people are able to lead an ordinary life⁹ by attending work and spending time with family members. As a result, they are less likely to experience mental health issues as a result of their injury, which can decrease the prevalence of depression.¹⁰

Increased federal government funding may mean that more medicines are being funded through the PBS. The concessional¹¹ patient co-payment amount reflects equity as those with concession cards, like Sunny, don't have to pay as much as others. This provides disadvantaged people with greater access to essential medicines, which can enhance health status by managing chronic conditions, meaning they are less likely to contribute to premature death, which increases life expectancy.¹² The PBS can enhance Sunny's physical health and wellbeing as he can receive treatment for pain management. The PBS reflects sustainability as not every drug is subsidised, so money is preserved for the future. This can mean that Sunny may not be able to access the drugs he needs, which may contribute to increased levels of stress and anxiety,¹³ impacting his mental health and wellbeing. It can also mean that people with life-threatening conditions such as cancer may not be able to access certain medicines, which can increase mortality rates and contribute to lower life expectancy.

1 Referencing each source as they are used can assist in ensuring all are included at some stage in the response.

2 Links are made between all three sources.

3 Knowledge of the private health insurance rebate that is not included in the stimulus material is provided.

4 A specific link is made to a dimension of health and wellbeing.

5 A specific link to health status is included.

6 A deep understanding of Medicare is included.

7 An understanding of the concept of sustainability is provided by showing knowledge of the NDIS.

8 A link between the NDIS and social health and wellbeing is provided, using information provided in source 2.

9 Further understanding of the NDIS is included.

10 Specific aspects of the NDIS are linked to health status.

11 Own knowledge of the PBS is included and used to show an understanding of equity.

12 A specific link to health status is included.

13 Potential negative impacts on both health and wellbeing and health status are included.

Practise this skill

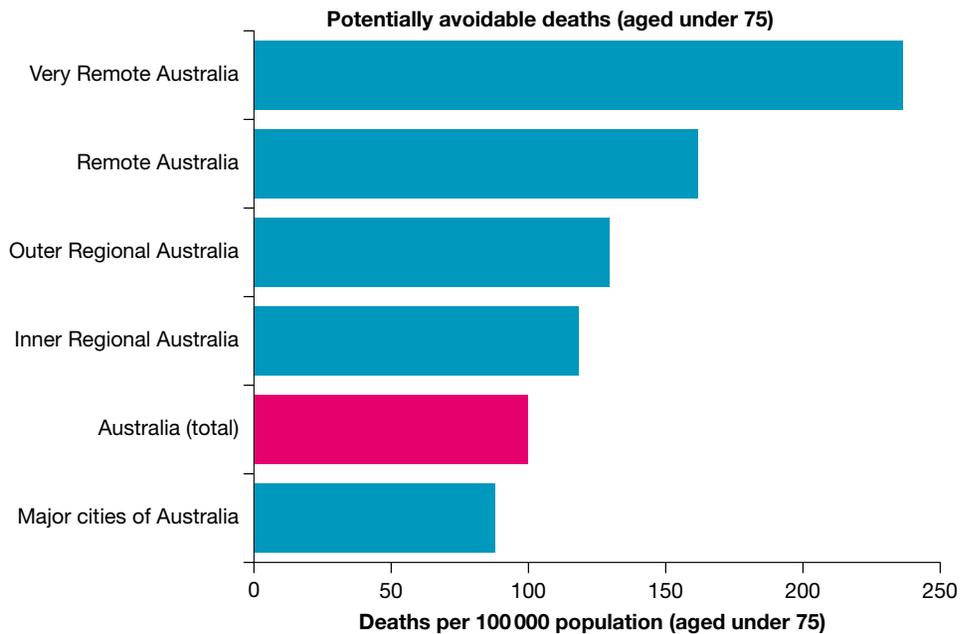
Source 1

The following table shows the proportion of the population with and without private health insurance by remoteness, 2019–20.

	Major cities of Australia	Inner Regional Australia	Outer Regional/ Remote/Very Remote Australia
Does not have private health insurance	41.0	49.4	51.7
Has private health insurance	59.0	50.6	48.3

Source: ABS 2020, *Patient Experiences in Australia: Summary of Findings, 2019–20*.

Source 2



Source: Adapted from: <https://www.aihw.gov.au/reports/rural-health/rural-remote-health/data>

Source 3

Jim is a 25-year-old man living in a remote area of South Australia. He is a qualified builder, but regularly struggles to get enough work to be classified as full-time. As a result, he often receives financial support from the government. Jim recently experienced a serious fracture in his leg while playing soccer with some friends in the area. As a result, he will be unable to drive for two months, which will make leaving his home difficult. He may also be required to undergo rehabilitation to get full movement back in his leg, once the plaster is removed.

Using the information provided and your own knowledge, discuss the potential of the health system to improve health outcomes for those living outside major cities compared to those living inside major cities. In your response, include references to access and funding within the health system. **10 marks**

6.8 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

6.8 Exam questions

6.8 Exam questions

Question 1 (12 marks)

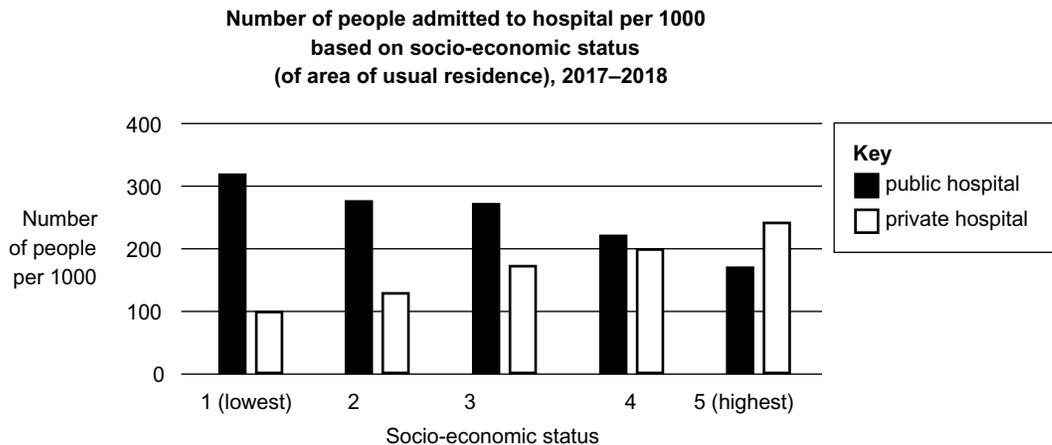
Source: VCE 2020, *Health and Human Development*, Q.2; © VCAA

Stewart is a 58-year-old father of three. Stewart and his wife own and manage a cafe. He spends his spare time with his children and close network of friends. Stewart has recently experienced depression and has had to take some time off work to focus on his condition and receive medical care. This has had significant impacts on his mental, social and emotional health and wellbeing. He has experienced depression in the past and has a number of strategies to assist with the recovery process. Stewart and his family have private health insurance (hospital and extras).

- Other than treatment in a public or private hospital, **list** one health service that Stewart could access that is covered by Medicare and one health service that could be accessed through private health insurance. **2 marks**
- Identify** two advantages and two disadvantages of private health insurance. **4 marks**
- Explain** how Stewart's current situation may have an impact on his emotional health and wellbeing. **2 marks**
- Explain** how Stewart's emotional health and wellbeing could have an impact on his social and spiritual health and wellbeing. **4 marks**

Question 2 (11 marks)

Source: VCE 2020, *Health and Human Development*, Q.7; © VCAA



- Outline** one relationship between socio-economic status (SES) and the use of private and public hospitals that is evident in the graph above. **2 marks**
- Explain** the benefits of private hospital use to Australia's health system in relation to sustainability and access. **4 marks**
- Identify** two differences in health status between high and low SES groups. **2 marks**
- Identify** one environmental factor and explain how it might contribute to one difference identified in part c. **3 marks**

Question 3 (2 marks)

Source: VCE 2013, *Health and Human Development*, Section A, Q.8; © VCAA

Outline two examples of how Medicare is different from private health insurance.

Question 4 (7 marks)

Medicare is Australia's universal health insurance scheme.

- a. Briefly **explain** how Medicare is funded.
- b. **Identify** two services covered by Medicare.
- c. **Outline** two differences between Medicare and private health insurance.

3 marks

2 marks

2 marks

Question 5 (4 marks)

Explain two ways the NDIS can promote the health and wellbeing of individuals.

Resources

	Digital document	Key terms glossary (doc-36128)
	Exam question booklet	Topic 6 Exam question booklet (eqb-0060)
	Interactivities	Crossword (int-6889) Definitions (int-6890)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 6 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 6.1 Key terms glossary (doc-36128)
- 6.2 Medicare worksheet (doc-32205)
- 6.3 NDIS worksheet (doc-32202)
- 6.5 My Health Record worksheet (doc-32203)
PBS worksheet (doc-32204)
- 6.8 Summary (doc-36141)
Key terms glossary (doc-36128)

Exam question booklets

- 6.1 Topic 6 exam question booklet (eqb-0060)
- 6.8 Topic 6 exam question booklet (eqb-0060)

Teacher-led videos

- 6.7 Key skill: Analyse the role of Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme in promoting Australia's health (tlvd-1917)
- 6.8 Extended response: build your exam skills (tlvd-2881)

Weblinks

- 6.2 Medicare
- 6.3 NDIS
- 6.5 My Health Record
PBS

Interactivities

- 6.2 Australia's health system is made up of the public and private sectors and the respective components (int-8502)
- 6.5 Recurrent health expenditure by area of expenditure and source of funds, 2018–19 (int-8503)
- 6.6 Employed health professionals — FTE per 100 000 population: by selected areas of practice and remoteness area, 2017 (int-8504)
- 6.8 Crossword (int-6889)
Definitions (int-6890)

To access these online resources, log on to www.jacplus.com.au.

7 Targets of health promotion in Australia

LEARNING SEQUENCE

7.1 Overview	343
7.2 Smoking and the role of health promotion in improving population health.....	344
7.3 Road safety and the role of health promotion in improving population health	354
7.4 Skin cancer and the role of health promotion in improving population health.....	365
7.5 Initiatives to address Indigenous health and wellbeing.....	375
7.6 The Australian Dietary Guidelines	383
7.7 The work of Nutrition Australia.....	396
7.8 The challenges in bringing about dietary change	405
7.9 KEY SKILLS	414
7.10 Review	420



7.1 Overview

Key knowledge	Key skills
The role of health promotion in improving population health, focusing on one of: smoking, road safety or skin cancer, including: <ul style="list-style-type: none">• why it was/is targeted• effectiveness of the health promotion in improving population health• how the role of health promotion reflects the action areas of the Ottawa Charter for Health Promotion	Apply the action areas of the Ottawa Charter for Health Promotion to a range of data and case studies
Initiatives introduced to bring about improvements in Indigenous health and wellbeing in Australia and how they reflect the action areas of the Ottawa Charter for Health Promotion	Apply the action areas of the Ottawa Charter for Health Promotion to a range of data and case studies Evaluate initiatives in terms of their capacity to improve Indigenous health and wellbeing
Initiatives to promote healthy eating in Australia including Australian Dietary Guidelines and the work of Nutrition Australia, and the challenges in bringing about dietary change	Draw conclusions as to why dietary improvements are difficult to achieve in Australia

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Energy balance

Legislation

Health promotion

Population health

Exam terminology

Apply Use your knowledge in the given case study/scenario

Evaluate Make a judgement, weigh up the pros and cons

Draw conclusions Make reasoned decisions or judgement

Resources



Digital document

Key terms glossary (doc-36129)



Exam question booklet

Topic 7 exam question booklet (eqb-0061)

7.2 Smoking and the role of health promotion in improving population health

KEY CONCEPT Exploring the role of health promotion in improving population health in relation to smoking

As explored in topic 3, smoking is a major health concern in Australia. Smoking is linked to an increased risk of a range of conditions, including cardiovascular disease, many cancers and respiratory disease, and is responsible for 9 per cent of the total burden of disease in Australia, largely through premature death.

7.2.1 Why is smoking targeted?

According to the Department of Health, smoking kills more than 20 000 Australians and costs Australia \$31.5 billion in social (including health) and economic costs each year. As explored in subtopic 3.2, smoking is the leading preventable risk factor in Australia and contributes significantly to the overall burden of disease by increasing the risk of a number of conditions. Smoking is a preventable risk factor, so all smoking-related diseases and impacts are considered to be avoidable.

Smoking affects vulnerable population groups disproportionately, with people living outside major cities and people from Aboriginal and Torres Strait Islander and low socioeconomic backgrounds being more likely to smoke tobacco, contributing to the lower levels of health and wellbeing experienced by these groups:

- Some 10 per cent of those in major cities were smokers compared to around 18 per cent of those in outer regional and remote areas.
- 27 per cent of Aboriginal and Torres Strait Islander people were daily smokers, which was two and a half times the rate of other Australians.
- Those in the lowest socioeconomic group smoked at a rate almost four times higher than the highest socioeconomic group (19 per cent compared to 5.1 per cent in 2019).

Tragically, half of all long-term smokers will die prematurely due to smoking.

Exposure to environmental tobacco smoke also causes disease and premature death in adults and children who do not smoke.

As a result of smoking being preventable, and its impacts on health and wellbeing and the economy, numerous health promotion initiatives have been implemented to change behaviours and reduce the impact of smoking.

7.2.2 Effectiveness of health promotion in promoting population health – smoking

In this section, a range of health promotion activities that have been implemented to reduce the burden associated with smoking are explored and their effectiveness evaluated.

Health promotion activities in relation to smoking have been particularly successful, seeing smoking rates decline from around 44 per cent for males and 33 per cent for females in 1976 to 16.5 per cent for males and 11.1 per cent for females in 2017–18.

Australia's relatively low smoking rate is the result of ongoing, focused health promotion efforts from all levels of government and action from public health organisations.

EXAM TIP

This study design dot point makes reference to ‘effectiveness of the health promotion in improving population health’. Population health can relate to health and wellbeing or health status, but it should be noted that responses need to go further than the health and wellbeing or health status of an individual. Population health needs to refer to the health and wellbeing or health status of a group or groups of people (for example, the mental health and wellbeing of youth, incidence of cancer among males, or people of low socioeconomic status, etc.).

A range of health promotion interventions have been particularly successful at promoting health and wellbeing in relation to smoking, including government laws and policies, National Tobacco Campaigns and state and territory QUIT campaigns.

The Ottawa Charter for Health Promotion is increasingly used to guide the development of health promotion interventions and, as a result, the action areas of the Ottawa Charter will be used to identify key aspects of each strategy:

- Build healthy public policy
- Create supportive environments
- Strengthen community action
- Develop personal skills
- Reorient health services.

There are many factors that contribute to people smoking and, as a result, multiple action areas of the Ottawa Charter must be targeted to achieve the most significant improvements possible.

FIGURE 7.1 Environmental tobacco smoke can affect people who choose not to smoke.



Legislation relating to a law or set of laws

EXAM TIP

Behaviours such as smoking are often the product of a range of influences and, as a result, there is no single solution to bringing about behaviour change. Although very few health promotion initiatives focus on each of the five action areas of the Ottawa Charter, the greatest gains are achieved when all action areas are addressed. You should know a range of health promotion initiatives so that examples of interventions relating to each action area can be discussed.

Government laws and policies

Many of the most successful health promotion activities regarding smoking relate to the introduction of smoking-related laws and policies. Laws on advertising, packaging, smoke-free environments and tobacco taxes that work to increase the price of tobacco have been used since 1973 to reduce smoking rates. Some of the findings relating to **legislation** include:

- Increased taxation on tobacco and the resulting higher price of tobacco is associated with lower prevalence of smoking among all population groups.
- A 10 per cent rise in price resulted in a 3.2 per cent decline in prevalence among low-income smokers.
- Laws banning smoking in pubs and clubs have been shown to have a bigger impact on lower socioeconomic status (SES) populations, with reductions in consumption reported by 40 per cent of smokers.

FIGURE 7.2 Smoking bans in dining areas have contributed to reduced rates of smoking in Australia.



All levels of government implement laws relating to smoking. Federal law bans smoking in all Australian Commonwealth Government buildings, on public transport, in airports and on all international and domestic flights.

Further bans are in place but are governed by individual states and territories. All Australian states and territories have banned smoking in enclosed public places, particularly workplaces and restaurants.

Examples of Victorian legislation include:

- From 1 April 2014, smoking was banned at areas commonly used by children and young people for recreational and sporting activities.
- The bans complement those implemented in December 2012, which prohibit smoking at all Victorian patrolled beaches.
- Since January 2010, it has been an offence to smoke in a vehicle where there is a person under the age of 18 present. The ban applies regardless of whether the car is moving or not, whether the windows are open or closed, or whether the roof is down or not.
- A ban on smoking in government school grounds became effective in July 2009.
- A restriction on smoking in enclosed public places has been in effect since July 2007.
- In 2006, smoking was banned in covered areas of train station platforms, tram stops and bus stops.

Some local governments have also introduced laws that prohibit smoking in public outdoor places, including in parks and beach areas.

Reducing the risk of exposure to environmental tobacco smoke is an example of *creating a supportive physical environment* for those who choose not to smoke.

Anti-smoking laws are examples of *healthy public policies* that work to make *not* smoking the easier and healthier choice.

National Tobacco Campaigns

A number of National Tobacco Campaigns have been implemented in Australia since the 1970s, contributing to the decrease in smoking rates. These campaigns are developed by the national and state/territory governments to work together with the private sector to reduce smoking rates and associated consequences in Australia. A number of interventions make up these campaigns and have been shown to be successful in a number of ways:

Anti-smoking media campaigns

These campaigns work to *develop personal skills* by educating the population on the dangers and consequences of smoking. A recent campaign is 'Don't make smokes your story'. These campaigns also *create supportive environments* by providing information on how to access resources to assist in quitting. Research relating to media campaigns has shown:

- Highly emotional anti-smoking advertisements are remembered more by survey participants and are perceived as being more effective. They influence smoking beliefs and increase quit attempts.
- People in low SES groups are particularly responsive to emotional or personal testimonial advertisements.
- Greater exposure to these advertisements is associated with a greater likelihood of quitting. For each ten additional exposures, the odds ratio of quitting is 1.15 times as high.

How to quit smoking website

The How to quit smoking website is a website of the National Tobacco Campaign. The website *strengthens community action* by providing links to a range of community support services such as Quitline and QuitCoach. The website *develops personal skills* by producing a range of fact sheets and resources including those relating to:

FIGURE 7.3 Smoking bans in parks and gardens create a supportive physical environment.



- Why quit smoking — this section outlines the physical and social impacts of smoking and the benefits that occur when a smoker quits.
- Quitting methods — users are supported by advice for preparing to quit, different methods of quitting and the support services available.
- Make a quit plan — online tools and templates are provided to assist smokers in preparing a plan to quit smoking.
- Coping with quitting and staying smoke-free — this section provides advice on overcoming setbacks, ways to cope with cravings and how to plan another quit attempt if one fails.

My QuitBuddy

Developed as part of the National Tobacco Campaign, the My QuitBuddy free smartphone app was created to assist Australian smokers of any age, gender and socioeconomic status to quit smoking.

The app provides feedback to users enabling them to track how many cigarettes they haven't smoked, how many grams of tar they've not inhaled, how much money they've saved each day and how many days they've been smoke free. This assists in developing personal skills by providing information that can assist in reducing the risk of smoking-related diseases.

My QuitBuddy *creates a supportive environment* by allowing users to:

- record personal goals and motivation using pictures, words and audio messages. There is a community board where users can gain motivation and support from thousands of other people also quitting.
- to program danger times at which the app will send reminders of the health and wellbeing benefits of quitting, and games are provided to play during times of craving to provide a distraction.
- to share their quit journey and success stories with others on Facebook and Twitter.

Quit for You, Quit for Two app

Developed as part of the National Tobacco Campaign, the Quit for You, Quit for Two free smartphone app was created to assist Australian smokers who are pregnant, or planning to be, to quit smoking.

The app *creates a supportive environment* by including fun exercises and games to keep the user's hands busy to help beat cravings.

The app can be personalised to give the user daily reminders and words of encouragement. By entering the baby's due date, the app will automatically send messages detailing the baby's growth and development.

It *develops personal skills* by providing practical quit tips and advice to quit smoking. The app also provides a running tally of how much money has been saved by not smoking and what items could be purchased with that money. It also includes facts about the baby's development to provide more reasons to resist any urges to smoke.

FIGURE 7.4 My QuitBuddy is an app that assists individuals wanting to quit smoking.

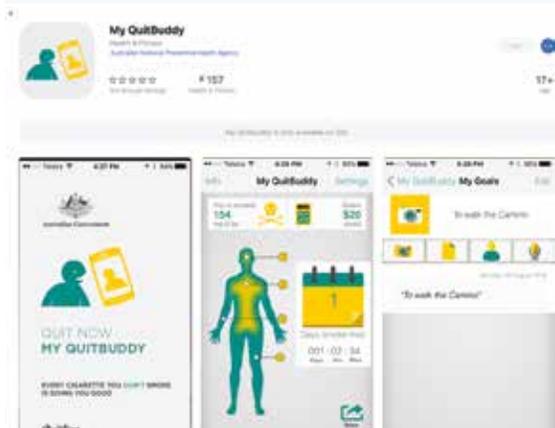
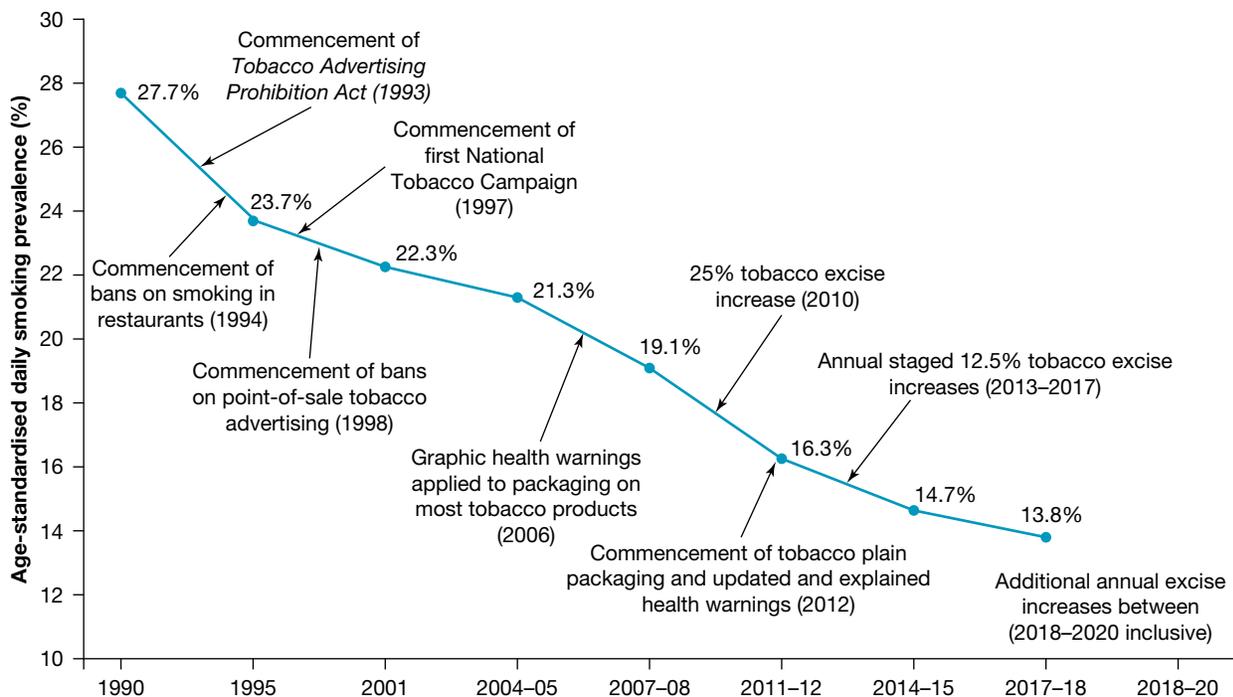


FIGURE 7.5 The Quit for You, Quit for Two app



FIGURE 7.6 summarises the range of government interventions and the corresponding smoking rates over time in Australia.

FIGURE 7.6 A number of interventions have contributed to decreased smoking rates in Australia.



Source: National Health Survey results: 1990, 1995, 2001, 2004-05, 2007-08, 2011-12 and 2014-15.

Quit campaigns

Quit campaigns are run in each state and territory, sometimes as a joint venture between the state or territory government and the Cancer Council for the respective state or territory, although other organisations may be involved. This section focuses on the actions of Quit Victoria.

Quit Victoria is a program of the Cancer Council Victoria, which is funded by the Victorian Government and VicHealth, and is an example of *strengthening community action*. Quit Victoria aims to decrease the prevalence of smoking by assisting smokers to quit and preventing the uptake of smoking in non-smokers. To achieve their aims, Quit employs a range of actions.

Quit *develops personal skills* by providing information regarding tobacco smoking and the benefits associated with not smoking. This is achieved through public education using mass media advertising campaigns, public relations and downloadable information on its website.

Funded by state and territory governments and implemented by Quit-like organisations around Australia, Quitline is a telephone service that people can use to receive advice and behaviour change support to quit smoking. Quitline is a clinical service, staffed by highly trained specialists. It:

- *creates a supportive environment* by providing support throughout the quitting process
- *develops personal skills* by providing advice and practical strategies for quitting.

Several evaluations have been carried out in relation to Quitline run by Quit Victoria, with the results being positive. In one evaluation, callers rated Quitline positively: 97 per cent said it was either very or somewhat friendly, 86 per cent said it was helpful, and 82 per cent said

FIGURE 7.7 The Quit logo



they would recommend it to friends. When callers were followed up at 6 months, 17 per cent had stopped smoking.

Aboriginal Quitline is a telephone helpline service that provides advice and behaviour change support for Aboriginal and Torres Strait Islander people who would like to quit smoking. Quit Victoria's Aboriginal Quitline:

- *strengthens community action* by using Aboriginal and Torres Strait Islander quit specialists with additional training to assist people with smoking cessation in a culturally appropriate way.

Quitline specialists provide callers with a plan for quitting that is tailored to their individual needs, as well as information on different quitting methods and products, and written and other resources. Advisers can also link callers up with local support groups if requested.

Currently there is an Aboriginal Quitline service for New South Wales, Victoria and Queensland, but all Quitline services in Australia are funded to provide culturally sensitive services to Aboriginal and Torres Strait Islander peoples.

Online support is also available in Victoria through QuitCoach and QuitTxt on the Quit website. Both QuitTxt and QuitCoach are provided free-of-charge to Victorians, while Quitline is available for the cost of a telephone call (or free if referred by a health professional) and are therefore available to all Australians regardless of socioeconomic status or geographical location. In addition to Quitline, QuitCoach and QuitTxt, the Quit Victoria website provides a range of materials to assist smokers in recognising reasons to quit, preparing to quit, staying smoke-free and managing setbacks. These promote knowledge by providing easy-to-follow steps that work to *develop personal skills*.

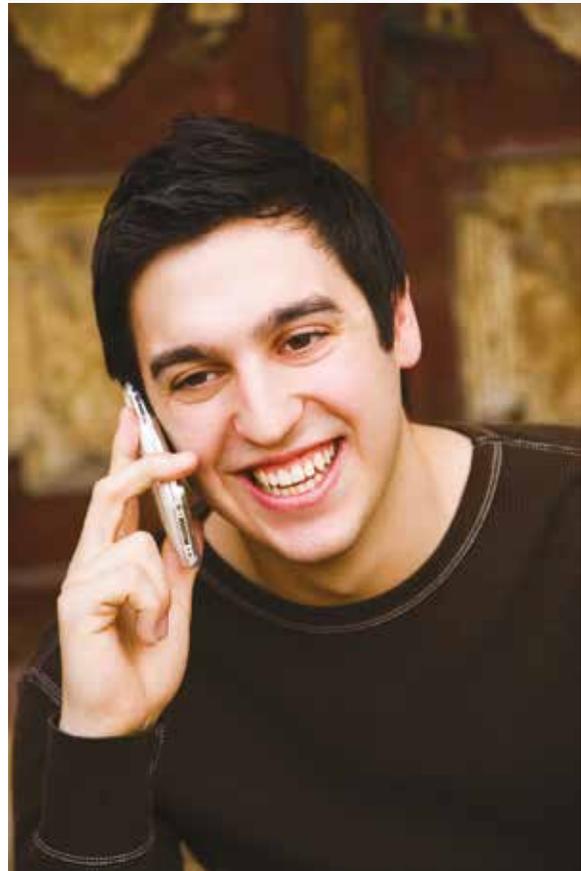
Quit *strengthens community action* by assisting health professionals, community groups and various population groups to create environments that support quitting. It does this by providing specialist training for health professionals to undertake proven 'brief interventions' and referrals to Quitline, and by working with community and population groups to create public education materials, health information and treatment pathways for groups that still have high smoking rates, including Aboriginal and Torres Strait Islander peoples, those experiencing mental disorders, and those with alcohol and other drug disorders.

Quit undertakes research and provides advice to the state government to implement *healthy public policies*. Examples of policies include laws relating to smoking in public places, tobacco advertising and the display of cigarettes in retail outlets. Quit also provides advice to the federal government to inform the development of health policies such as tobacco packaging and tobacco taxes.

Quit provides a free online learning training program for health professionals that assists in *reorienting health services*. Quit Victoria's Smoking Cessation Essentials course and Smoking Cessation Brief Intervention videos provide health professionals with knowledge and skills to:

- highlight the important role of health professionals and the effectiveness of smoking cessation interventions

FIGURE 7.8 Quitline provides telephone counselling for those wanting to quit smoking.



- inform of the effects of smoking and the benefits to patients/clients in quitting
- provide an understanding of smoking behaviour
- help health professionals carry out brief smoking cessation interventions and assist them to help smokers quit in individual settings
- provide information about Quit Victoria’s support services for smokers and how Quit can support the health professionals in assisting their patients/clients.

TABLE 7.1 Examples of smoking-related health promotion with regards to each of the five action areas of the Ottawa Charter

Action area	Examples relating to smoking	
Build healthy public policy	Anti-smoking laws and taxes work to make not smoking the easier and healthier choice.	Quit provides advice to the state government to implement legislation related to smoking. Examples of policies include laws relating to smoking in public places, tobacco advertising, the display of cigarettes in retail outlets, tobacco packaging and tobacco taxes.
Create supportive environments	National Tobacco Campaigns provide information on how to access resources to assist in quitting at no cost.	My QuitBuddy allows users to record personal goals and motivation using pictures, words and audio messages. There is a community board where users can gain motivation and support from thousands of other people quitting.
Strengthen community action	Aboriginal Quitline strengthens community action by using Aboriginal quit specialists with additional training to assist people with smoking cessation in a culturally appropriate way.	Quit Victoria is a joint venture between the Victorian Government, VicHealth, the Heart Foundation and the Cancer Council.
Develop personal skills	National Tobacco Campaigns work to educate the population on the dangers and consequences of smoking. A recent campaign is the ‘Don’t make smokes your story’.	Quit provides information regarding tobacco smoking and the benefits associated with not smoking. This is achieved through a mass advertising campaign and via downloadable information on its website.
Reorient health services	Quit invests millions of dollars in smoking prevention research. This research then provides best practice techniques for health professionals in assisting preventing people from starting smoking and assisting smokers to quit.	Quit provides a free online learning training program for health professionals. Quit Victoria’s Smoking Cessation Essentials course and Smoking Cessation Brief Intervention videos provide health professionals with knowledge and skills relating to assisting smokers to quit.

CASE STUDY

30 years of Quit saves half a million Victorians

Smoking was so common when Quit Victoria was established 30 years ago that people would light up on aeroplanes, inside restaurants, at their desks at work and even in hospitals.

Tobacco advertising could be seen in newspapers, at the cinema and on billboards, featuring healthy young actors smiling with friends as they enjoyed a cigarette. In fact, Melbourne television viewers saw — on average — one advertisement for cigarettes every eight minutes.

A small printed warning on tobacco packs stated that smoking was a health hazard, although this was vigorously denied by the tobacco industry.

Quit Victoria’s work has helped turn the tide — and its sustained efforts to encourage smokers to quit and deter others from taking up the habit have delivered results.

In 1985, 32 per cent of Victorians were regular smokers. By 2012, this had fallen by more than half, with just 13 per cent of Victorians smoking regularly.

On the organisation's 30th birthday, Quit Victoria Director Dr Sarah White said it was frightening to imagine a Victoria in which smoking rates remained unchanged.

'If we hadn't achieved this reduction, and our smoking rate remained at 32 per cent, we would have seen a whopping 1.4 million regular smokers in Victoria in 2012,' Dr White said.

'There are more than 800000 Victorians who are not smoking today, which means more than half a million Victorians have or will be saved from premature death thanks to Quit Victoria's work and the leadership of VicHealth, Cancer Council Victoria and federal and state governments.'

Cancer Council Victoria chief executive Todd Harper said anti-smoking advertisements, smoke-free areas and increased cigarette prices were vital to the success of anti-smoking campaigns.

'We know that these are the key measures that motivate smokers to quit and discourage young people from taking up the habit,' Mr Harper said.

'As we reflect on how far we've come, young Victorians might be shocked to know that you once came home from the pub with your clothes reeking of smoke, or were likely to find yourself breathing in someone else's secondhand smoke on a bus.'

Minister for Health Jill Hennessy congratulated Quit Victoria on its 30 years of success.

'Quit has been — and continues to be — a strong voice in the campaign against smoking.'

'I look forward to working with Quit Victoria and the Cancer Council to identify what more can be done to reduce the harm caused by smoking,' Ms Hennessy said.

Dr White said that although Victoria has come a long way in reducing the harms caused by smoking, it remained the state's leading cause of preventable disease and death, killing about 4500 Victorians in 2013.

'Quit and the Cancer Council Victoria have enjoyed broad political support for tobacco control over 30 years because our politicians — no matter their era or their party — recognise both the tragedy of the human toll and the incredible cost to Victoria's economy.'

'Smoking still kills 11 Victorians every day, and for every death it's estimated there are another 30 people being treated for a smoking-related illness. More than 4000 Victorian teenagers are still taking up smoking every year.'

To celebrate Quit Victoria's 30th birthday, we've dug into the archives and found some of our favourite television campaigns.

Among the highlights:

- Pat Cash told us in a 1988 advertisement that he had a few tennis tips — 'but I'll give you one tip that I reckon's the best of the lot — don't smoke'.
- John Clarke, moonlighting as 'head honcho' of a tobacco company in 2002, announced a product recall over health concerns linked to his product — before breaking into raucous laughter.
- Footballer Paul Roos, then with Fitzroy, told us in the 'winners' advertisement in 1988: 'I don't smoke — it's the only way to stay ahead of the game'.

Source: VicHealth/Cancer Council Victoria press release, 21 May 2015.

FIGURE 7.9 Quit Victoria has helped reduce the number of regular smokers in Victoria from 32 per cent in 1985 to just 12 per cent in 2016.



CASE STUDY REVIEW

1. In which places could people smoke when Quit Victoria was established?
2. Discuss the use of advertising to promote tobacco use when Quit was established.
3. Using examples from the case study, discuss the effectiveness of the Quit campaign. How many Victorians die from smoking each year?
4. Discuss how the health and wellbeing of the Victorian population may have been influenced by Quit Victoria.
5. Outline how examples from the case study relate to the action areas of the Ottawa Charter.

7.2 Activities

1. Access the **Smoking health promotion** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **My QuitBuddy** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital documents** Smoking health promotion worksheet (doc-32206)
My QuitBuddy worksheet (doc-32207)
-  **Weblinks** Quitnow
Smoking health promotion
My QuitBuddy

7.2 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

7.2 Quick quiz

on

7.2 Exercise

7.2 Exam questions

Select your pathway

■ LEVEL 1

1, 4, 5

■ LEVEL 2

2, 3, 6, 7

■ LEVEL 3

8, 9

Test your knowledge

1. Outline three reasons why smoking is targeted by health promotion programs.
2. **a.** Which population groups are more likely to smoke when compared to the rest of the population?
b. Explain how this could contribute to variations in burden of disease.
3. Which level of government is responsible for implementing smoking laws? Explain.
4. Identify three laws that have been created to address smoking.
5. Briefly describe the My QuitBuddy app.

Apply your knowledge

6. Briefly discuss how the action areas of the Ottawa Charter are evident in health promotion initiatives to address smoking.
7. Briefly explain how initiatives to address smoking can promote health in Australia.
8. Which intervention do you think has been the most successful in reducing smoking rates in Australia? Justify your choice.
9. **a.** Explain how high-risk groups for smoking could be further targeted to reduce smoking rates in Australia.
b. Which action areas of the Ottawa Charter do your ideas reflect?

Question 1 (6 marks)

Source: VCE 2019, Health and Human Development Exam, Q.16 (adapted); © VCAA

Use the following target area for health promotion: smoking.

- a. **Explain** why health promotion was used to target this area. **2 marks**
 b. **Identify** a health promotion program that focuses on the selected target area. **2 marks**

Health promotion program _____

- c. **Describe** how the implementation of this health promotion program reflects two action areas of the Ottawa Charter for Health Promotion. **2 marks**

Question 2 (4 marks)

My QuitBuddy is an app personalised to help individuals quit smoking, on their terms. The app is available from the Quit website free of charge. It is designed to assist smokers who want to quit smoking. The app allows individuals to choose when to quit. Individuals set their own goals, state the reasons why they are quitting and can include photos and recordings of loved ones to help motivate them to quit. One of the most popular features of the app is the community forum, which allows quitters to share success stories and distraction tips, and celebrate milestones. The latest version of the app has an added 'check in' feature. Every evening, for the first three weeks, My QuitBuddy 'checks in' to make sure individuals are sticking to their quitting goals.

My QuitBuddy also allows individuals to program danger times for when a craving might strike. At danger times, My QuitBuddy provides a reminder of why an individual chose to quit, offers games to distract or can connect individuals to the Quitline to make sure they stay on track.

Source: Adapted from www.quitnow.gov.au

Identify two action areas of the Ottawa Charter and describe how they are evident in the My QuitBuddy app.

Question 3 (2 marks)

Using information in the table, **draw a conclusion** about the effectiveness of health promotion that targets smoking.

Comparison of adult daily smoking rates, 18 years and older, from 2001 to 2011–12

	2001*	2004–05*	2007–08*	2011–12*
Males	27.2	26.2	23.0	18.3
Females	21.2	20.3	19.0	14.1
Total%	22.3	21.3	19.1	16.3

*Age-standardised to the 2001 Australian population

Source: www.health.gov.au

Question 4 (2 marks)

Cigarette smoking has been a focus of health promotion since the late 1970s. **Outline** two reasons why cigarette smoking is a target for health promotion.

Question 5 (1 mark)

Quit is a joint initiative of Cancer Council Victoria, the Department of Health, the National Heart Foundation and VicHealth.

Identify which action area of the Ottawa Charter this demonstrates.

More exam questions are available in your learnON title.

7.3 Road safety and the role of health promotion in improving population health

KEY CONCEPT Exploring the role of health promotion in improving population health in relation to road safety

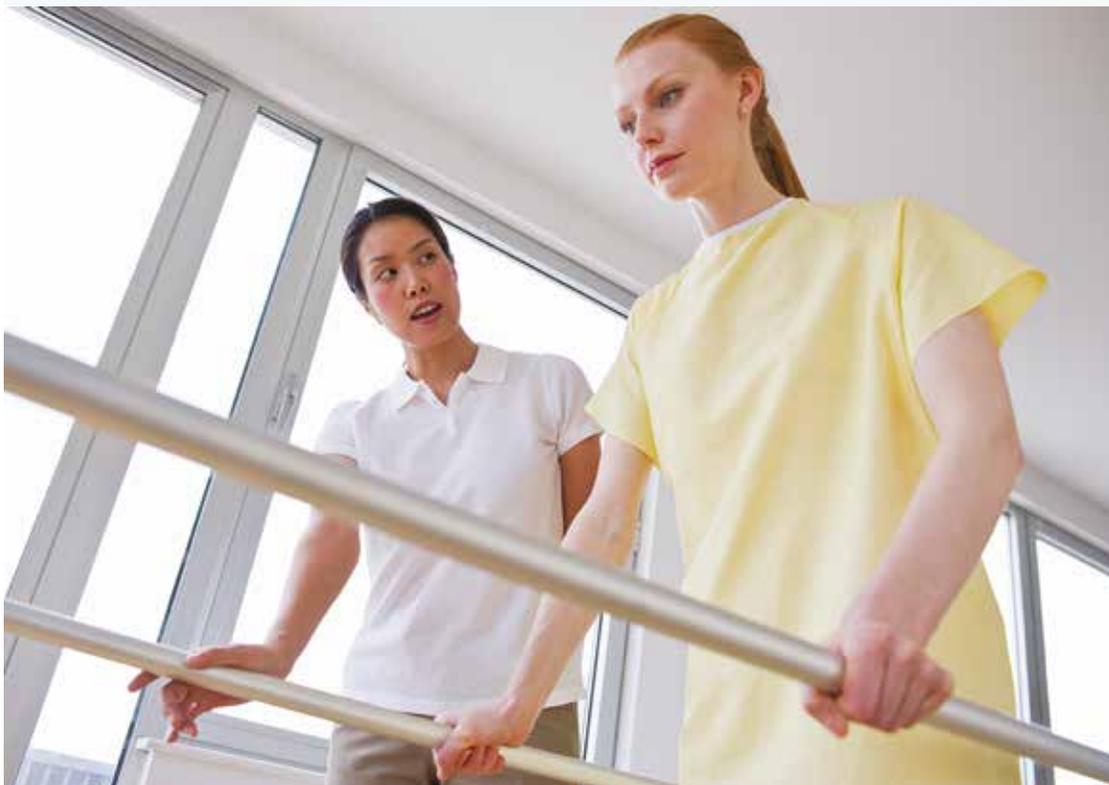
Road safety relates to interventions put in place to reduce the risk of crashes, death and injury caused to individuals as a result of using roads. Road users include pedestrians, cyclists, motorcyclists, and drivers and occupants of cars, trucks and public transport vehicles including trams and buses.

7.3.1 Why is road safety targeted?

Since recordkeeping commenced in 1925, there have been more than 190 000 deaths on Australia's roads. Road-related deaths and injuries affect some population groups disproportionately, including the following inequalities in mortality reported by the Australian Institute of Health and Welfare (AIHW):

- Males — are almost three times more likely to die on the road than females.
- Aboriginal and Torres Strait Islander peoples — the death rate for Indigenous males due to transport accidents was more than double the rate for non-Indigenous males.
- People living outside Australia's major cities — rates were more than four times higher for those in remote areas compared to those living in major cities.
- Low socioeconomic groups — those in the lowest socioeconomic group experienced a death rate 2.2 times higher than that for the highest socioeconomic group.
- Young people — in 2020, 208 drivers aged 17–25 years were killed in road crashes. People in this age group account for 19 per cent of drivers killed on Australia's roads yet represent only 16 per cent of the adult population.

FIGURE 7.10 The effects of road trauma can last for extended periods of time.



Every day, an average of three people are killed and 90 are seriously injured as a result of using Australia's roads. All road crashes are deemed to be preventable because the causes can be identified and targeted by health promotion activities, including:

- driver fatigue, distraction and error
- non-compliance with road laws such as alcohol and drug use, speeding and failure to use adequate restraints
- infrastructure including road quality, barriers and lighting
- vehicle quality.

As well as being a leading cause of death for some population groups, the economic and social impacts of road trauma are significant.

According to the Australian government, the economic impact of road crashes in Australia is estimated to be at least \$27 billion per year as a result of lost productivity and taxation revenue; healthcare, rehabilitation, long-term care and insurance costs; and social security payments.

Deaths and injuries from road trauma cause significant emotional impacts on family, friends and other community members, especially as injuries are unforeseeable and cause a significant degree of shock. A person who is permanently disabled may experience frustration as they relearn tasks they could once do easily. They may also have to adjust to living without a limb or without the use of limbs.

Compared to the situation in Australia, though, the impact of road trauma is greater in most other countries — more than 3500 people die each day from road accidents worldwide, equalling over 1.35 million deaths and 50 million injuries per year. The interventions put in place in Australia provide a reference point for many other countries in their attempt to decrease their own road toll.

CASE STUDY

Victoria records lowest road toll ever, but is it really possible to get to zero?

Victoria has recorded its lowest annual road toll since records began, but experts agree the total of 214 lives lost last year can be reduced further.

The state's Transport Accident Commission (TAC) is working towards a goal of zero road deaths but is that a realistic aim?

Behavioural change expert Peter Bragge from Monash University said it would be 'a huge challenge' but was possible.

'The language of road toll implies that there's a price that we're happy to pay,' he told *ABC Radio Melbourne*.

'What we've decided in Victoria and around the nation, and in fact around the world, is that actually zero is the number that we should be aiming for.

'If we believe that it is possible, and there is evidence emerging now both in Australia and around the world that it is possible, then that can help us redouble our efforts to change our behaviour.'

Strategies having an effect

TAC road safety director Samantha Cockfield said the record low road toll showed that police, government and community interventions were working.

The number of deaths could continue to fall by looking at the evidence and targeting high-risk regions and demographics, she said.

'One of the key things we did when we launched the new Towards Zero Road Safety Strategy and Action Plan was recognise that in country Victoria, those travelling on high-speed rural roads were at really high risk.'

‘[Road users are] four to five times more likely to be killed on country roads than on metro roads, so we’ve done a lot of work in those areas.’

Ms Cockfield said the installation of 1500 kilometres of flexible barriers, including on roads such as the Hume Freeway, had reduced serious crashes.

The barriers prevent drivers veering into trees or oncoming traffic.

‘Three or four years ago you would have been seeing reports coming in every month or so of somebody being killed on the Hume, so that barrier system is really working for us.’

More education for young motorists and stricter rules around getting enough practice hours as a learner had also reduced road deaths among young drivers, she said.

Breaking the mobile phone habit

Professor Bragge said reaching a road toll of zero relied on creating long-term behavioural change which was notoriously difficult to achieve.

The next big shift needed to be around using mobile phones while driving, he said.

‘The things about mobile phones is they’re very cleverly manufactured to become addictive.’

‘There are pings, there are likes — we tend to want to read a message as soon as we get it, and when we do that, we get a little spurt of dopamine in our brains and that makes us feel good.’

‘For some people they become addicted to that feeling and they become glued to their phones and that extends into the time that they spend in the car.’

FIGURE 7.11 The use of mobile phones while driving is a considerable issue in Australia.



You definitely can't multi-task

Despite what people might think, neuroscience had proven multitasking was a myth, he added.

‘The brain cannot pay attention to two things at a time, that’s actually impossible.’

‘People who think they’re multitasking are actually doing a thing called rapid attention switching.’

‘For the time that you’re engaging with the phone, if you are in control of a car, you are not engaging with the road. That’s why mobile phone use contributes to so many deaths and accidents on the road.’

No letting up

Victoria Police Superintendent John Fitzpatrick said the record low toll was encouraging but more needed to be done.

‘One life lost is one too many,’ he said.

‘Police and our road safety partners are determined to prevent and reduce road trauma, which is why we put so much effort into enforcing the law and educating people about the risks of unsafe behaviour.’

Source: ‘Victoria records lowest road toll ever, but is it really possible to get to zero?’, Nicole Mills, 3 January 2019, <https://www.abc.net.au/news/2019-01-03/road-toll-is-it-possible-to-achieve-zero-road-deaths/10678650>

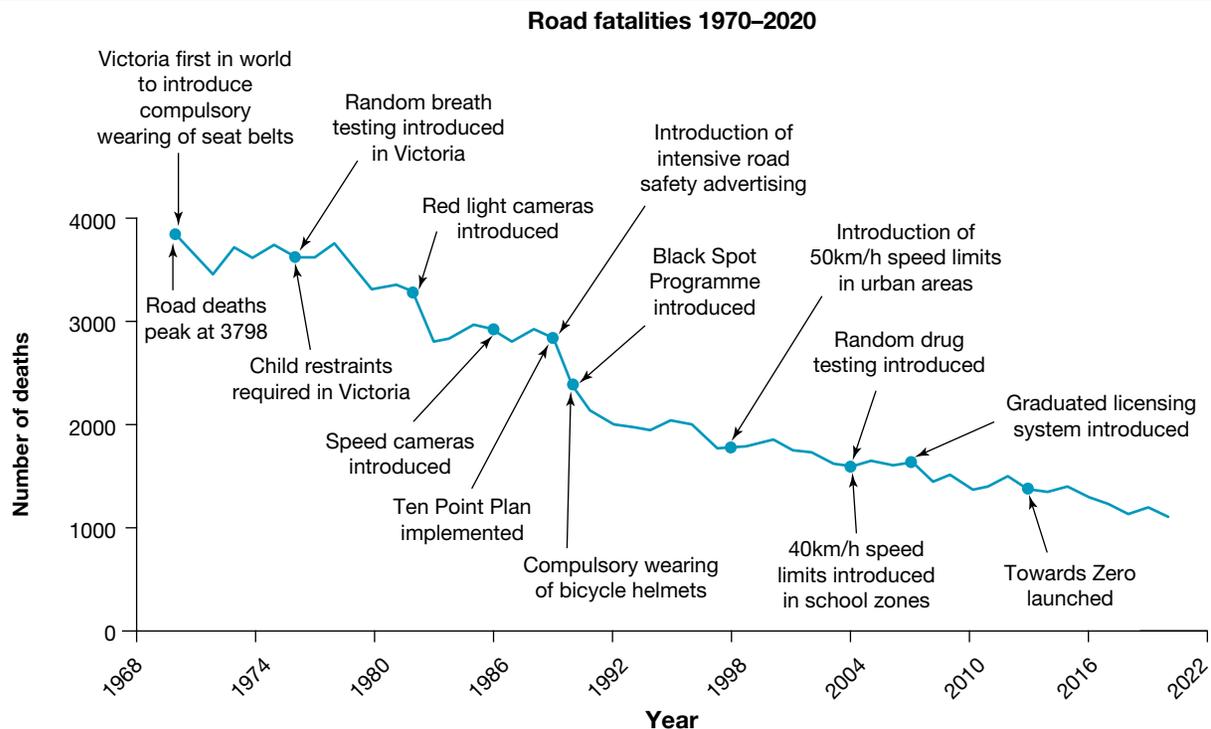
CASE STUDY REVIEW

- Which interventions have contributed to a reduction in deaths on Australia’s roads according to the article?
 - Which action area of the Ottawa Charter do these interventions reflect?
- Use the action areas of the Ottawa Charter to brainstorm ways that mobile phone use can be targeted among road users.

7.3.2 Effectiveness of health promotion in promoting population health – road safety

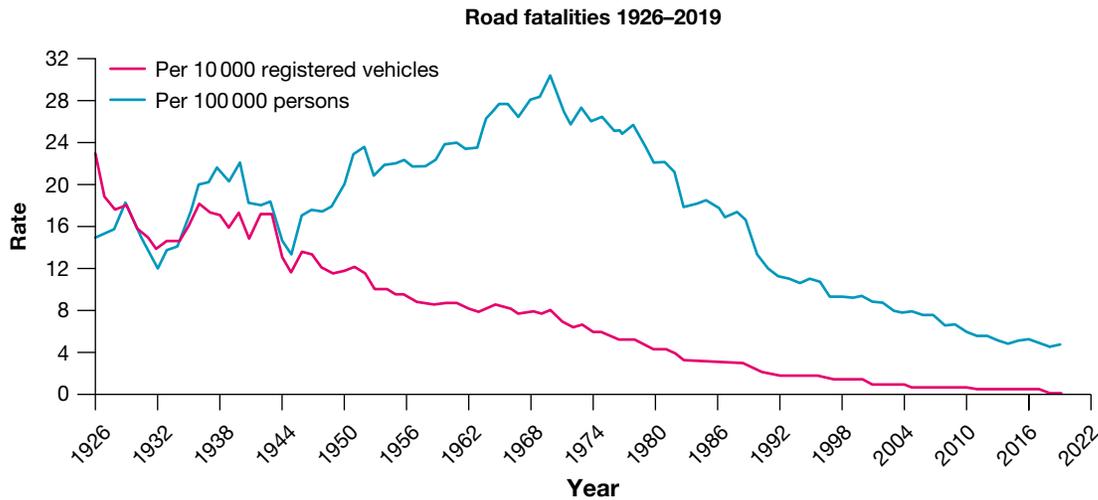
Although Australia still experiences road deaths and injuries, the impact of health promotion interventions has been significant. As a result of these interventions, road trauma levels have declined substantially over the last four decades, despite considerable population growth and a threefold increase in registered motor vehicles. During this period, the number of road deaths per year has fallen from 3798 deaths in 1970 to 1105 deaths in 2020 (see **FIGURES 7.12** and **7.13**).

FIGURE 7.12 Road fatalities over time in Australia with health promotion interventions



Source: Graph from ABS Year Book Australia, 2012 supplemented with data for 2011–20 from Australian Government, Bureau of Infrastructure, Transport and Regional Economics (BITRE), Road Trauma Australia – Annual Summaries, 2020 and https://infrastructure.gov.au/roads/safety/publications/2004/pdf/Safety_Aust.pdf

FIGURE 7.13 Road fatality rates over time in Australia



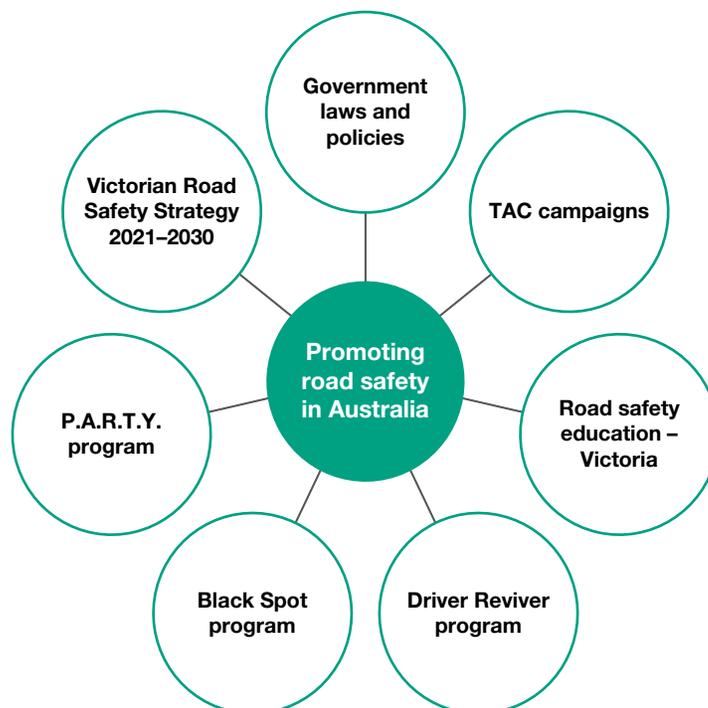
Source: Graph from ABS Year Book Australia, 2012 supplemented with data for 2011–19 from Australian Government, Bureau of Infrastructure, Transport and Regional Economics (BITRE), Road Trauma Australia — Annual Summaries, 2020.

EXAM TIP

This study design dot point makes reference to ‘effectiveness of the health promotion in improving population health’. Population health can relate to health and wellbeing or health status, but it should be noted that responses need to go further than the health and wellbeing or health status of an individual. Population health needs to refer to the health and wellbeing or health status of a group or groups of people (for example, the mental health and wellbeing of youth, incidence of injuries among males, or people of low socioeconomic status, etc.).

A number of health promotion interventions have contributed to the success experienced in relation to improving road safety, including those shown in **FIGURE 7.14**.

FIGURE 7.14 Examples of interventions that have promoted road safety in Australia



The Ottawa Charter for Health Promotion is increasingly used to guide the development of health promotion interventions and, as a result, the action areas of the Ottawa Charter will be used to identify key aspects of each strategy:

- Build healthy public policy
- Create supportive environments
- Strengthen community action
- Develop personal skills
- Reorient health services.

There are many factors that contribute to road trauma and, as a result, multiple action areas of the Ottawa Charter must be targeted to achieve the most significant improvements possible.

EXAM TIP

Road trauma is often the product of a range of influences and, as a result, there is no single solution to promoting road safety. Although very few health promotion initiatives focus on each of the five action areas of the Ottawa Charter, the greatest gains are achieved when all action areas are addressed. You should know a range of health promotion initiatives so that examples of interventions relating to each action area can be discussed.

Government laws and policies

Road rules reflect *healthy public policies*, and the development of rules and law enforcement have been a major contributor to the success achieved in reducing the road toll. A review of road safety measures in Australia found that the wearing of seatbelts, random breath testing and speed cameras explain almost all of the variation in mortality rates since the late 1960s (BITRE, 2010).

In 1969, the Australian Design Rules required all new vehicles to have seatbelts. In 1970, Victoria became the first jurisdiction in the world to mandate the wearing of seatbelts, marking the start of a significant decrease in road deaths.

The introduction of random breath testing began in the 1970s and contributed to a further decrease in road deaths. This intervention also *creates a supportive environment* by reducing the number of drivers on the road affected by alcohol or drugs.

In 1989, the Ten Point Plan was created. It saw the progressive implementation of a range of road-related laws that reflect *building healthy public policies*, including:

- a national 0.05 blood alcohol concentration limit
- national licensing of drivers of buses and heavy trucks
- national uniform speed limits so that no speed limits will exceed 110 km/h
- speed limiters for heavy vehicles
- zero blood alcohol limits for young drivers
- enforcement to ensure that one in four drivers is subjected to a random breath test each year.

Victoria introduced legislation for the compulsory wearing of bicycle helmets in 1990. By 1992, all Australian states and territories had adopted this legislation.

Red light and speed cameras were first used in Victoria in the 1980s. This intervention assisted in reducing average speeds and *created a supportive environment* for all road users.

TAC campaigns

Since 1989, the Transport Accident Commission (TAC) has played a large role in promoting road safety by focusing on a range of road safety issues to change public behaviour. Working with Victoria Police and VicRoads, the TAC addresses road safety by:

- providing resources to target speeding and drink-driving
- creating high-profile, hard-hitting mass media campaigns
- focusing on drink-driving, speeding, fatigue and young drivers
- providing public education programs to support police enforcement
- conducting road safety research.

The TAC takes a hard-hitting approach by addressing the key causes of road accidents — the attitudes and behaviours of road users.

Examples of TAC campaigns include:

- ‘If you drink, then drive, you’re a bloody idiot.’
- ‘Wipe off 5.’
- ‘Everybody hurts when you speed.’
- ‘Drinking. Driving. They’re better apart.’
- ‘Belt up, or suffer the pain.’
- ‘Take a break, fatigue kills.’
- ‘If’s you’re on your phone, you’re in blind.’
- ‘Start talking about the dangers of night driving. Before it’s too late.’
- ‘The lucky ones get caught’.

These campaigns work to *develop personal skills* relating to young drivers, fatigue, drug-driving, motorcycle safety, distractions, vehicle safety, speeding and drink-driving.

Through a partnership with the Road Trauma Support Services, the TAC assists in providing seminars to community groups, schools and businesses, to educate individuals about the risks associated with road use. Ambulance officers participate in this program, which is an example of *reorienting health services*.

Road safety education – Victoria

Road safety education is a program of educational activities about road safety that works to *develop the personal skills* of children and young people in formal and community education settings – such as early childhood services, primary and secondary schools.

Road safety education *strengthens community action* because all members of the school and general community are encouraged to share the responsibility for the safety of young people when they are travelling. Safe road-use behaviour develops over time and needs to be constantly practised and reinforced in a range of different scenarios as young people develop and learn to be responsible for themselves.

The road safety education website *creates a supportive environment* by helping Victorian teachers, early childhood professionals, students, parents and carers to better understand evidence-based road safety education and to easily locate road safety education resources and information.

FIGURE 7.15 Legislation such as drink-driving laws and random breath testing has made a significant impact on the road toll in Australia.



FIGURE 7.16 An anti-speeding advertisement produced by the Transport Accident Commission

Everybody hurts when you speed.

TAC TM

Driver Reviver program

For over 25 years, Driver Reviver has been a national program campaigning to reduce road collisions by addressing driver fatigue. Unlike other safety hazards, such as speeding and drink-driving, driver fatigue is not a criminal offense but can be just as deadly as those hazards. As it is difficult to address driver fatigue through legislation, the Driver Reviver program was established to *create a supportive environment* for drivers on long journeys.

Each holiday season, up to 220 Driver Reviver sites open across Australia to provide motorists with a safe place to stop and refresh. Throughout Australia, the program *strengthens community action* by involving a range of organisations such as State Emergency Services volunteers, rural and volunteer fire services, Lions Club and Apex members, State Police forces and the TAC. The sites offer a place to stop and rest, provide toilet facilities and offer free coffee, tea and biscuits.

The Driver Reviver program also *develops personal skills* by offering ‘holiday motoring tips’ on their website to assist drivers in operating their vehicles safely and by educating the public about the dangers of driving when fatigued.

FIGURE 7.17 The Driver Reviver program provides a supportive environment for drivers on long journeys.



Black Spot program

The Black Spot program is part of the commitment to reduce crashes on Australian roads. Black Spot projects target those road locations where crashes occur. By funding measures such as traffic signals and roundabouts at dangerous locations, the program *creates a supportive physical environment* and reduces the risk of crashes. Programs of this sort are very effective, saving the community many times the cost of the relatively minor road improvements that are implemented.

According to evaluation reports, crashes involving injury at Black Spot sites would have been 2.5 times higher if the interventions had not been applied.

P.A.R.T.Y. program

The Prevent Alcohol and Risk-related Trauma in Youth (P.A.R.T.Y.) program is a trauma prevention and health promotion initiative that seeks to *develop the personal skills* of young people by providing a real experience of a major trauma service.

Operating at the Royal Melbourne and Alfred hospitals, the program *reorients health services* by utilising the experiences of presenters including emergency services, doctors, nurses, allied health professionals and researchers.

FIGURE 7.18 The P.A.R.T.Y. program works by providing an experience of trauma services.



The program is aimed at 15–24 year olds who spend a day touring the trauma facilities and meeting with healthcare workers and patients. The initiative works to assist participants to make smart choices and think twice about taking risks to prevent harm to themselves and others.

Victorian Road Safety Strategy 2021–2030

The Victorian Road Safety Strategy 2021–2030 is a *healthy public policy* developed by Road Safety Victoria in collaboration with Victoria’s Road Safety Partners — the Transport Accident Commission, Victoria Police, the Department of Justice and Community Safety and the Department of Health and Human Services.

The strategy aims to halve the road toll by 2030 and to eliminate roads deaths by 2050. It works to do so by addressing the range of factors that contribute to road-related injuries, such as infrastructure, road laws, human behaviour and vehicle safety

The strategy *strengthens community action* by acknowledging road safety is complex, and that it takes a collective response across government agencies, industry partners and the Victorian community to deliver safer roads.

Under the strategy, the Victorian government is investing \$35 million to *create a supportive environment* by delivering a fleet of new generation AI-enabled camera systems, utilising high-resolution cameras with image processing and machine learning software that can detect illegal mobile phone use, the absence of seatbelts and other offences.

Healthy public policies in relation to new laws and penalties will be developed to remove risk-takers from the roads swiftly, thereby *creating a supportive environment* for other road users. Under the strategy, agencies will work to *develop personal skills* by supporting drivers to better understand the safest vehicle options in their price range, thereby maximising the benefits of the most advanced in-vehicle lifesaving and crash prevention technology.

The strategy will work to *create a supportive environment* by continuing the roll out of life-saving infrastructure such as rumble strips and wire rope barriers throughout regional Victoria.

Developing personal skills through education initiatives is a big part of the Victorian Road Safety Strategy 2021–2030 and is illustrated by the Road to Zero: Road Safety Experience at Melbourne Museum, which works to provide education to secondary school students.

ROAD TO ZERO: ROAD SAFETY EXPERIENCE

Part of the Victorian Government’s Road Safety Strategy, Road to Zero has been developed by the TAC in partnership with the Melbourne Museum.

Targeted at Year 9 and 10 students, Road to Zero aims to build knowledge and increase awareness in pre-learner drivers, to give them the skills to make safe decisions on the road. The program is built on decades of research from the TAC.

The program is built around the Road to Zero Experience Space and curriculum-linked programs.

The Road to Zero Experience Space allows students to explore an immersive gallery showcasing multi-sensory interactive technologies and curriculum-linked programs.

Highlights from the Road to Zero Experience Space include:

- a 3-minute virtual reality experience where students travel in a car from 1970 to 2055
- an elevator simulation where students experience a dramatic 'drop' from the 11th floor of the Royal Exhibition Building
- a digital exploration of TAC's well-known Graham sculpture.

FIGURE 7.19 The TAC's 'Graham: the only person designed to survive on our roads' features in the Road to Zero: Road Safety Experience.



Source: <https://www.tac.vic.gov.au/about-the-tac/media-room/news-and-events/2016/introducing-graham>

TABLE 7.2 Examples of road safety-related health promotion with regards to each of the five action areas of the Ottawa Charter

Action area	Examples relating to road safety	
Build healthy public policy	Road laws such as seatbelts, speed limits and drink-driving laws.	The Ten Point Plan saw the progressive implementation of a range of road-related laws.
Create supportive environments	Random breath testing reduces the number of drivers on the road affected by alcohol or drugs, making it safer for all road users.	Road safety education Victoria provides a variety of teaching and learning activities organised into modules.
Strengthen community action	The Driver Reviver program involves a range of organisations such as State Emergency Services volunteers, rural and volunteer fire services, Lions Club and Apex members, State Police forces and the TAC.	Road safety education Victoria encourages all members of the school and general community to share the responsibility for the safety of children when they are travelling.
Develop personal skills	TAC campaigns work to provide education relating to young drivers, fatigue, drug-driving, motorcycle safety, distractions, vehicle safety, speeding and drink-driving.	The P.A.R.T.Y. program seeks to educate young people by providing a real experience of a major trauma service.
Reorient health services	Through the TAC, ambulance officers assist in presenting seminars to community groups, schools and businesses, to educate individuals about the risks associated with road use.	The P.A.R.T.Y. program utilises the experiences of presenters including emergency services, doctors, nurses, allied health professionals and researchers.

7.3 Activity

Access the **Road safety health promotion** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital document** Road safety health promotion worksheet (doc-32208)
-  **Weblink** Road safety health promotion

7.3 Exercises

learn **on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

7.3 Quick quiz

on

7.3 Exercise

7.3 Exam questions

Select your pathway

■ LEVEL 1
1, 2, 7

■ LEVEL 2
3, 4, 5, 6

■ LEVEL 3
8, 9

Test your knowledge

1. Outline three reasons why road safety is targeted by health promotion programs.
2. Which population groups are more likely to be injured or killed on the roads when compared to the rest of the population?
3. Approximately how many people were killed on Australia roads in 2020?
4. Using data, outline the trend in relation to road deaths in **FIGURE 7.12**.
5. Identify the three interventions that account for almost all of the reduction in mortality rates since the 1960s due to road accidents.

Apply your knowledge

6. Briefly discuss how the action areas of the Ottawa Charter are evident in initiatives to promote road safety.
7. Briefly explain how improving road safety can promote health in Australia.
8. Which intervention do you think has been the most successful in promoting road safety in Australia? Justify your choice.
9. **a.** Explain how high-risk groups for road accidents could be further targeted to promote road safety in Australia.
b. Which action areas of the Ottawa Charter do your ideas reflect?

7.3 Quick quiz

on

7.3 Exercise

7.3 Exam questions

Question 1 (6 marks)

Source: VCE 2019, Health and Human Development Exam, Q.16 (adapted); © VCAA

Use the following target area for health promotion: road safety.

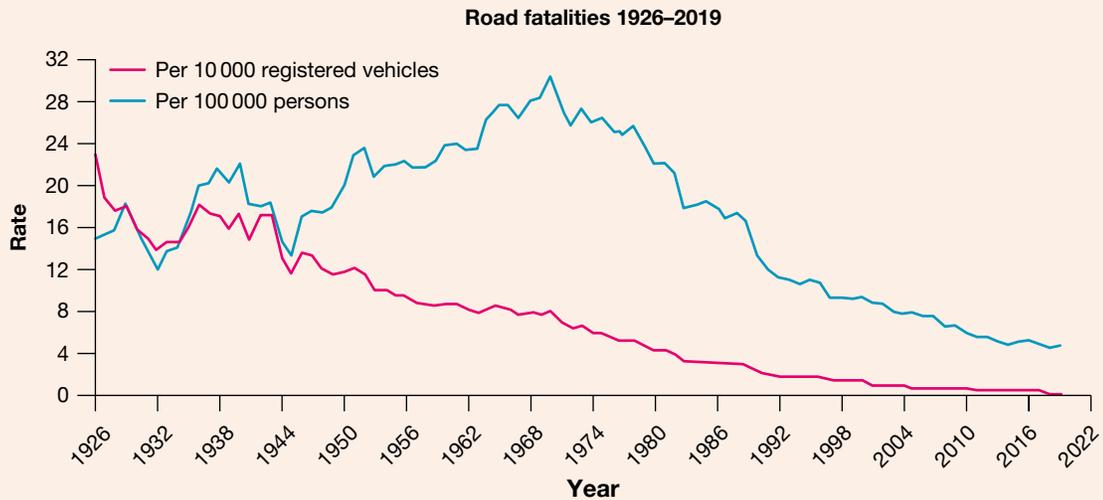
- a. Explain** why health promotion was used to target this area. **2 marks**
- b. Identify** a health promotion program that focuses on the selected target area. **2 marks**

Health promotion program _____

- c. Describe** how the implementation of this health promotion program reflects two action areas of the Ottawa Charter for Health Promotion. **2 marks**

Question 2 (2 marks)

Using information in the graph, **draw a conclusion** about the effectiveness of health promotion that targets road safety.



Source: www.bitre.gov.au

Question 3 (4 marks)

Identify and **describe** how two action areas of the Ottawa Charter could be used to reduce deaths from road trauma.

Question 4 (2 marks)

Outline two reasons why road safety is a target for health promotion.

Question 5 (1 mark)

The Driver Reviver campaign has been operating for 26 years with one objective: to reduce road collisions by alleviating driver fatigue. State Emergency Services (SES) and Lions volunteers contribute thousands of hours each year towards providing Driver Reviver as a way to reduce driver fatigue and resulting car crashes.

The above information about the Driver Reviver campaign reflects which action area of the Ottawa Charter?

More exam questions are available in your learnON title.

7.4 Skin cancer and the role of health promotion in improving population health

KEY CONCEPT Exploring the role of health promotion in improving population health in relation to skin cancer

There are many types of skin cancer. Most are non-melanoma skin cancers, which can usually be treated reasonably effectively. Melanoma, on the other hand, is an extremely dangerous type of skin cancer and can cause death if left undiagnosed and untreated. Fair and freckly-skinned people are at greater risk of skin cancer. The risk also increases with age and UV exposure.

Melanoma is cancer of the melanocytes (see **FIGURE 7.20**). Melanocytes are the cells in the skin that are responsible for making melanin, which is a pigment in the skin that gives the skin its colour and also protects it from harmful UV rays. When a person spends extended time in the sun without using adequate skin protection, more melanin is made to protect the skin. This is why the skin turns darker after exposure

to the sun. Too much UV exposure can cause the melanocytes to grow abnormally and become **malignant**. If not diagnosed and treated in the early stages, the cancerous cells can grow deeper into the skin and eventually **metastasise**. If this occurs, the risk to health and wellbeing is serious.

Exposure to UV radiation, which is present in sunlight and **solariums**, is the biggest risk factor for skin cancer. The cancer usually appears as a spot that changes over time. Some moles can turn cancerous and should be monitored by a doctor.

7.4.1 Why is skin cancer targeted?

Australia has the highest rate of skin cancer in the world. More than 2000 Australians die from skin cancer each year, and around two in three Australians are diagnosed with skin cancer before the age of 70.

Non-melanoma skin cancers are the most common skin cancers in Australia, but exact numbers are not known as these cancers do not have to be reported to cancer registries. Excluding non-melanoma skin cancer, melanoma is the third most common cancer in Australian women and the second most common cancer in men. In 2020, there were estimated to be 16 221 Australians diagnosed with melanoma. Overall, skin cancers account for around 80 per cent of all newly diagnosed cancers in Australia.

According to the AIHW (2020), in 2015 melanoma skin cancers were responsible for 32 524 of years of life lost (YLL) or 1.4 per cent of the total fatal burden, and 0.8 per cent of the total burden in Australia was attributed to sun exposure.

Like most public health issues, skin cancer affects some population groups more than others:

- Males — non-melanoma skin cancer is more common in males, with almost double the incidence compared to females. Males are also more likely to die from skin cancer, with 891 males estimated to die from skin cancer in 2020 compared to 484 females.
- Those working outdoors — approximately 200 melanomas and 34 000 other skin cancer types per year are estimated to be caused by occupational exposures in Australia. According to one study, outdoor workers exposed to solar UV radiation were more likely to be males and those residing in lower socioeconomic and regional areas. The occupations with the highest percentage of outdoor workers were farming, painting and plumbing (Carey et al. 2014, 'Occupational exposure to solar radiation in Australia: who is exposed and what protection do they use?', *Australian and New Zealand Journal of Public Health*, 38(1), pp. 54–9).

FIGURE 7.20 The anatomy of skin and the location of melanocytes

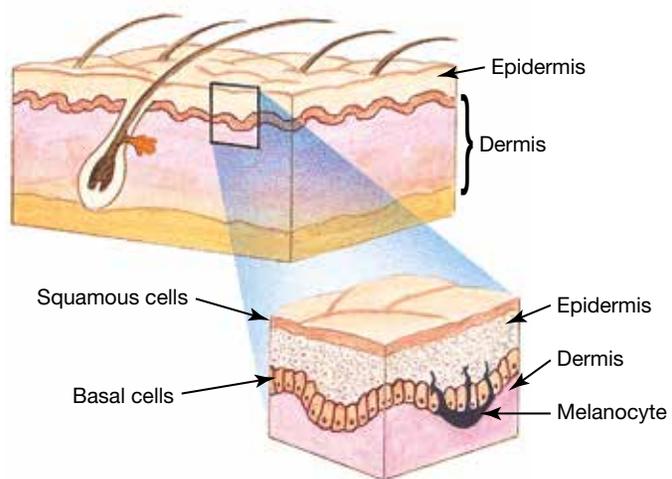


FIGURE 7.21 Sunburn is a major risk factor for skin cancer.



Malignant abnormal cells that invade and destroy nearby healthy tissue

Metastasis when cancer has spread from one site to another

Solarium a unit that uses UV radiation to create a tan

In addition to the impacts on health and wellbeing, the economic costs of skin cancer are substantial in Australia:

- Medicare records show there were over a million treatments for squamous and basal cell carcinoma skin cancers in 2018, or more than 100 skin cancer treatments every hour.
- Non-melanoma skin cancers accounted for almost one-quarter of all cancer-related hospitalisations in 2016–17. The cost to the health system in 2015–16 of these skin cancers alone is estimated at over \$1 billion.
- Lost productivity and premature mortality that contribute to other costs associated with skin cancers in Australia cost over \$100 million each year.

FIGURE 7.22 Sun protection behaviours such as using sunscreen and wearing a hat can reduce the risk of developing skin cancer.



The emotional and mental health and wellbeing impacts of skin cancer are also considerable:

- Surgery can alter a person's appearance as large amounts of surrounding tissue are often removed, which can contribute to higher levels of depression and anxiety among sufferers.
- Those diagnosed with melanoma may experience high levels of stress as they undergo treatment.
- Premature death of an individual causes immense distress among family and friends, which increases the level of grief in the community.

The Cancer Council estimates that between 95 and 99 per cent of skin cancers are caused by exposure to the sun. Therefore, health promotion activities have significant potential to reduce the impact of skin cancer in Australia by implementing activities that act to reduce overexposure to UV radiation.

It is estimated that in Australia 17 per cent of adults, 26 per cent of teenagers and 8 per cent of children are sunburnt on an average summer weekend. Many people get sunburnt when they are taking part in water sports and other activities at the beach or a pool, or when gardening or having a barbeque.

7.4.2 Effectiveness of health promotion in promoting population health — skin cancer

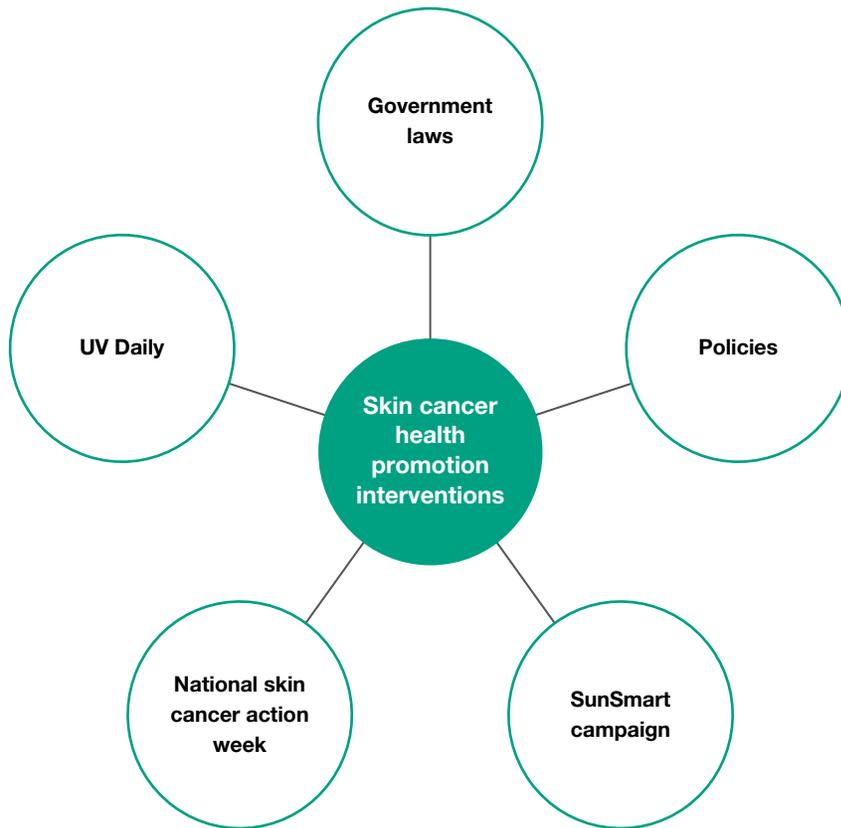
Health promotion activities relating to skin cancer have been in place in Australia since the 1980s and have achieved great success overall.

While melanoma incidence in Victoria continues to rise among those aged over 45 years, the rate of increase has slowed. In addition, melanoma incidence is falling in those under the age of 45. This suggests that health promotion is having a positive effect on generations who have grown up with skin cancer interventions (see **FIGURE 7.23**).

EXAM TIP

This study design dot point makes reference to 'effectiveness of the health promotion in improving population health'. Population health can relate to health and wellbeing or health status, but it should be noted that responses need to go further than the health and wellbeing or health status of an individual. Population health needs to refer to the health and wellbeing or health status of a group or groups of people (for example, the physical health and wellbeing of youth, incidence of skin cancer among males, or those working outdoors).

FIGURE 7.23 Interventions put in place to reduce the risk of skin cancer



The Ottawa Charter for Health Promotion is increasingly used to guide the development of health promotion interventions and, as a result, the action areas of the Ottawa Charter will be used to identify key aspects of each strategy:

- Build healthy public policy
- Create supportive environments
- Strengthen community action
- Develop personal skills
- Reorient health services.

There are many factors that contribute to people developing skin cancer and, as a result, multiple action areas of the Ottawa Charter must be targeted to achieve the most significant improvements possible.

EXAM TIP

Skin cancer is often the product of a range of influences and, as a result, there is no single solution to reducing rates of skin cancer. Although very few health promotion initiatives focus on each of the five action areas of the Ottawa Charter, the greatest gains are achieved when all action areas are addressed. You should know a range of health promotion initiatives so that examples of interventions relating to each action area can be discussed.

Government laws

Research published in 2008 found that 281 melanomas, 43 deaths and 2572 non-melanoma skin cancers were attributable to solarium use in Australia each year, at a cost to the health system of around \$3 million (SunSmart).

In 2015, the Victorian Government developed a *healthy public policy* that made it illegal to operate commercial solarium units in Victoria. The ban came as the result of ongoing campaigning led by Cancer Councils across Australia. The result of this policy is that many Victorians will be saved from the devastating effects that skin cancer has on patients and their families.

Commercial solarium operators have also been banned in New South Wales, South Australia, Tasmania, the Australian Capital Territory, Western Australia and Queensland. There are no commercial solariums operating in the Northern Territory.

FIGURE 7.24 Commercial solariums are now banned in most areas of Australia.



Policies

A range of *healthy public policies* relating to skin cancer and UV protection are implemented across community, education and employment settings:

- Many schools implement a ‘no hat, no play’ or ‘no hat, play in the shade’ policy to promote the wearing of hats during play times.
- Many local governments have implemented ‘shade policies’ to guide the development of sustainable shade options (natural and built) in public places such as playgrounds and sports facilities.
- As a part of their occupational health and safety policies, many workplaces eliminate, reduce or control overexposure to UV radiation through interventions such as providing:
 - free sunscreen to workers
 - long sleeve uniforms and hats
 - shade in areas where employees spend their time
 - training and education about sun exposure and protection methods.

SunSmart

SunSmart is an initiative of Cancer Council Victoria. It was launched in 1988 and is funded by Cancer Council Victoria and the Victorian Health Promotion Foundation (VicHealth). In 2004, SunSmart was appointed the World Health Organization’s Collaborating Centre for UV Radiation. It is a world leader in skin cancer prevention.

SunSmart has helped prevent more than 103000 skin cancers and more than 1000 deaths since 1988, but more improvements can be made. Australian youth still have the highest incidence of malignant melanoma in the world compared with youth in other countries. In young people aged 12–24 years in Australia, melanoma is the most common cancer, and accounts for more than one-quarter of all cancers in this age group.

One of the first campaigns developed to promote sun protection was Cancer Council Victoria’s 1980 ‘Slip, Slop, Slap’ campaign featuring Sid the Seagull (see **FIGURE 7.25**).

FIGURE 7.25 Sid the Seagull featured in one of the first sun-protection mass-advertising campaigns.



Today, SunSmart *develops personal skills* through mass advertising campaigns. These include paid and unpaid media strategies (television, radio, print, digital and public relations activities) that help people know when they need sun protection. Examples of media campaigns include:

- ‘Slip, Slop, Slap, Seek, Slide’ — during sun protection times (when the **UV index** reaches 3 or higher), SunSmart recommends using a combination of sun protection measures: *Slip* on covering clothing; *Slop* on SPF30 or higher, broad-spectrum, water-resistant sunscreen; *Slap* on a broad-brimmed hat; *Seek* shade; and *Slide* on sunglasses.
- ‘UV. It all adds up’ — this campaign raised awareness about the cumulative effect UV exposure can have over long periods of time.
- ‘There’s nothing healthy about a tan’ — this campaign highlights the fact that even one damaged melanocyte can lead to skin cancer and therefore tanning to any degree is dangerous.
- ‘How to remove a skin cancer’ — graphic footage was shown of skin cancer removal to act as a deterrent to spending too much time in the sun.
- ‘When you cover things, they last longer. Same goes for you.’ — targeting males, this campaign shows that protecting ‘things’ from the sun can make them last longer, including cars, decks and barbecues. It then reminds men that the same applies to their skin – at any age.

UV index a scale from 0–11+ that provides an indicator of how intense UV radiation will be. Sun protection methods are recommended for any UV index score of 3 and over

CASE STUDY

New SunSmart campaign urges men to give complacency the Slip, Slop, Slap

Thursday 21 January 2021

Twice as many men die from skin cancer than women

A new SunSmart campaign targeting men was unveiled today off the back of a study showing men are complacent about sun protection – despite knowing the dangers of sun exposure and their higher death rate from skin cancer compared to women.

Results of the 2019 Summer Sun Protection Survey (Life in Australia™) found 79 per cent of men surveyed agreed that if they regularly protect themselves from the sun, they can avoid skin cancer. 71 per cent of men were aware that melanoma, the deadliest form of skin cancer, kills more men than women each year.

However, less than half agreed that sun protection was part of their daily routine (49 per cent) and less than one in three used sunscreen (29 per cent) and stayed in the shade (30 per cent) on summer weekends.

Supporting data from the Victorian Cancer Registry reported 2841 melanomas were diagnosed in 2019 with 57 per cent of those in men (1633). Alarmingly, twice as many men than women died from the disease in the same year.

The results have prompted the launch of a new SunSmart campaign targeting men – *Same goes for you*. Funded by the Victorian Government, the campaign provides an important reminder of the dangers of ultraviolet (UV) radiation and how easy it is to reduce the risk of skin cancer.

The multichannel campaign shows a dad protecting household items he cares about such as the car, deck and barbeque from harmful UV. His young son then points out the irony that he’s forgotten to protect his own skin.

The key message is, if you cover something it lasts longer. The rule applies to your possessions and it also applies to your skin – at any age.

Craig Sinclair, Head of Prevention Division at Cancer Council Victoria, said with such high rates of skin cancer, the importance of the campaign can’t be understated.

‘Men simply can’t afford to be complacent when it comes to sun protection and are at higher risk because they typically spend more time outdoors than women. 95 per cent of skin cancers are caused by UV exposure which adds up over time to increase the risk.’

Mr Sinclair said the campaign was designed to be relatable for men and to help them see how ironic it is to protect your children and your ‘stuff’ from damaging effects of UV but not your own skin. In particular, he hopes the message that it’s never too late to protect your skin stands out. ‘Many men may not realise that sun protection is critical at any age, even if you think the damage was done early on in life. The risk of skin cancer being realised can be significantly reduced by protecting your skin at any age,’ Mr Sinclair said.

Minister for Health, The Hon. Martin Foley, said the Victorian Government investment in Same goes for you was vital in helping prevent skin cancer for Victorian men.

‘Skin cancer is highly prevalent and can be very harmful, but it’s also largely preventable. Given most skin cancers can be avoided by using good sun protection, it’s critical the public are reminded of how to reduce their risk, particularly as more people are socialising outdoors to help prevent the spread of COVID-19,’ Minister Foley said.

SunSmart ambassador Catherine Andrews said the campaign was also a reminder of how our sun protection attitudes and behaviours as adults impacts those around us.

‘The high number of deaths in men from melanoma is shocking, but that’s why being SunSmart is a big part of who I am. I’m the one at picnics and catch-ups constantly asking family and friends when they last applied sunscreen, looking for the shade and fetching hats and sunglasses. I must be pretty annoying, but it’s worth it to protect the men I love.

‘I support this new campaign 100 per cent – it’s on all of us to shift our thinking and make sun protection our priority and the new normal, for ourselves and every generation that follows,’ Mrs Andrews said.

The SunSmart Same goes for you campaign will run from January 24th through to the start of March.

SunSmart recommends protecting skin in five ways when the UV is 3 and above:

- Slip on loose protective clothing that covers as much skin as possible.
- Slop on SPF30 (or higher), broad spectrum, water resistant sunscreen 20 minutes before going outdoors. Reapply every two hours.
- Slap on a broad-brim, bucket or legionnaire hat that shades the face, neck and ears.
- Seek shade wherever possible outside.
- Slide on close-fitting, wrap-around sunglasses that cover as much of the eye area as possible and meet the Australian Standard

Source: SunSmart Cancer Council Vic.

CASE STUDY REVIEW

1. Briefly explain why males are the specific target of this campaign.
2. According to the article, males are slightly more likely to be diagnosed with melanoma than females (57 per cent of new cases were among males in 2019), yet twice as many men die from the disease than females. Suggest factors that may contribute to this variation. (You may need to review factors contributing to variations in health status between males and females in subtopic 4.6.)
3. Identify an action area of the Ottawa Charter that is evident in the case study and explain how it is reflected.
4. Explain two ways that the campaign may improve population health in Australia.

SunSmart works to *create supportive environments* by improving environmental protection strategies, such as providing information on options for built and natural shade, and promoting the SunSmart UV app, which includes sun protection times based on UV levels for the day.

SunSmart *strengthens community action* by running mass-media campaigns that raise awareness of the importance of using sun protection. SunSmart also assists various groups to reduce UV exposure. Targeted groups include early childhood centres schools and workplaces

SunSmart has developed a range of *healthy public policies* that can be adapted to individual childcare centres, kindergartens, schools and workplaces. The SunSmart Primary School and Secondary School programs encourage schools to implement a SunSmart policy that meets Cancer Council Victoria’s criteria. These include using a combination of sun protection measures during sun protection times. Sun protection measures include clothing, hats, sunscreen, shade and sunglasses. SunSmart also encourages SunSmart education within the school’s curriculum, which *develops personal skills*.

SunSmart assists in *reorienting health services* by providing support for community health workers, general practitioners and local governments in promoting awareness of UV exposure and early detection of skin cancer. This support includes advice on strategy development, making research available to health professionals, and making advertising and educational materials available for use by health professionals.

National Skin Cancer Action Week

Each year Cancer Council Australia and the Australasian College of Dermatologists work together to implement National Skin Cancer Action Week. This intervention is an example of *reorienting health services* as **dermatologists** are working to raise awareness of and prevent skin cancer.

During the designated week, the Cancer Council and the Australasian College of Dermatologists *develop personal skills* by reminding Australians of the importance of sun protection and early skin cancer detection.

The 2020 theme was ‘It’s still the same sun’. It reminded people that some things have changed since Sid the Seagull first made an appearance in the 1980s, but the sun is still the same and Australians need to make sure they use five forms of sun protection to reduce their skin cancer risk: slip on sun protective clothing; slop on SPF30 (or higher) broad-spectrum, water-resistant sunscreen; slap on a broad-brimmed hat; seek shade; and slide on sunglasses.

National Skin Cancer Action Week *strengthens community action* by encouraging people to get involved, including:

- putting posters up at work, home or at school to remind Australians of the importance of sun protection
- updating cover photos on individuals’ social media channels using the images provided on the Cancer Council website
- sharing photos showing five forms of sun protection and using the #SunSmart5 hashtag
- spreading the word by sharing National Skin Cancer Action Week social media posts during the week.

UV Daily

UV Daily is an intervention designed by the Cancer Council and aims to *develop personal skills* relating to sun safety among those working in outdoor trades.

The Australian Workplace Exposure Study found workers in the construction and agriculture industries had inadequate protection against the sun’s UV radiation, despite it being the most common cancer risk to which they were exposed. In the construction industry, 86 per cent of workers were exposed to UV radiation, but just 7 per cent were adequately protected. In agriculture, 99 per cent of workers were exposed to UV radiation, yet only 10 per cent were considered to be adequately protected with the use of shade, clothing, a hat and sunscreen.

FIGURE 7.26 Each year National Skin Cancer Action Week raises awareness of skin cancer and promotes preventative measures to reduce its incidence.



Dermatologist a medical doctor with specialist training relating to conditions of the skin

FIGURE 7.27 The UV Daily website includes today's UV index as well as a range of other tools.



UV Daily is a website that targets outdoor workers, specifically those working in trades. UV Daily *creates a supportive environment* by notifying users of the UV index based on their location in Australia. It *develops personal skills* by providing a number of fact sheets and videos relating to skin cancer statistics, myths about skin cancer, case studies and a range of ways to take action to reduce the risk of skin cancer. Interactive tools assist users in assessing their skin cancer risk and determining their skin type. UV Daily also has a presence on social media such as Twitter and Facebook.

TABLE 7.3 Examples of skin cancer-related health promotion with regards to each of the five action areas of the Ottawa Charter.

Action area	Examples relating to skin cancer	
Build healthy public policy	In 2015, the Victorian Government introduced laws that made it illegal to operate commercial solarium units in Victoria.	Many schools implement a 'no hat, no play' or 'no hat, play in the shade' policy to promote the wearing of hats during play times.
Create supportive environments	UV Daily notifies users of the UV index and conveys sun safety messages to tradespeople.	SunSmart works to improve environmental protection strategies, such as shade audits, options for built and natural shade, and promoting the SunSmart UV Alert.
Strengthen community action	SunSmart assists various groups to reduce UV exposure. Targeted groups include early childhood centres, schools, workplaces, local communities, sporting clubs and sporting venues.	National Skin Cancer Action Week encourages people to get involved, including by putting posters up at work, home or at school to remind Australians of the importance of sun protection.
Develop personal skills	'When you cover things, they last longer. Same goes for you.' — this campaign showed people that much like cars, deck and barbecues, skin requires protection from UV rays.	During National Skin Cancer Action Week, the Cancer Council and the Australasian College of Dermatologists educates people by reminding them of the importance of sun protection and early skin cancer detection.
Reorient health services	SunSmart provides support for community health workers, general practitioners and local governments in promoting awareness of UV exposure.	During National Skin Cancer Action Week dermatologists work to raise awareness of and prevent skin cancer.

7.4 Activities

1. Access the **SunSmart** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **SunSmart app** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital documents** SunSmart worksheet (doc-32209)
SunSmart app worksheet (doc-32210)
-  **Weblinks** SunSmart
SunSmart app

7.4 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

7.4 Quick quiz

on

7.4 Exercise

7.4 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 5

■ LEVEL 2

4, 6, 7

■ LEVEL 3

8, 9

Test your knowledge

1. Outline three reasons why skin cancer is targeted by health promotion programs.
2. Which population groups are more likely to develop skin cancer in Australia?
3. What proportion of skin cancers are estimated to be caused by exposure to the sun?
4. Briefly explain what is meant by melanoma.
5. What is a solarium?

Apply your knowledge

6. Briefly discuss how the action areas of the Ottawa Charter are evident in initiatives to address skin cancer.
7. Briefly explain how addressing skin cancer can promote population health in Australia.
8. Which intervention do you think has been the most successful in reducing skin cancer Australia? Justify your choice.
9. **a.** Explain how high-risk groups for skin cancer could be further targeted to reduce their risk in Australia.
b. Which action areas of the Ottawa Charter do your ideas reflect?

7.4 Quick quiz

on

7.4 Exercise

7.4 Exam questions

Question 1 (6 marks)

Source: VCE 2019, Health and Human Development Exam, Q.16 (adapted); © VCAA

Use the following target area for health promotion: skin cancer.

2 marks

- a. Explain** why health promotion was used to target this area. **2 marks**
- b. Identify** a health promotion program that focuses on the selected target area.

Health promotion program _____

- c. Describe** how the implementation of this health promotion program reflects **two** action areas of the Ottawa Charter for Health Promotion. **2 marks**

Question 2 (3 marks)

SunSmart schools ensure there are sufficient shelters and trees providing shade in outdoor areas, and they have rules associated with SunSmart behaviours, such as 'No hat, no play'.

Identify one action area of the Ottawa Charter evident above. Use an example to justify your choice.

Question 3 (1 mark)

Outline one reason why skin cancer is a target for health promotion.

Question 4 (3 marks)

Describe one health promotion campaign that has been effective in reducing skin cancer rates in Australia.

Question 5 (1 mark)

The SunSmart website includes information on how to be sun smart at the snow. **Identify** of which action area of the Ottawa Charter this an example.

More exam questions are available in your learnON title.

7.5 Initiatives to address Indigenous health and wellbeing

KEY CONCEPT Exploring initiatives introduced to address Indigenous health and wellbeing

As explored in topic 4, there are a number of population groups within Australia who do not experience the same level of health and wellbeing as the rest of the population. Aboriginal and Torres Strait Islander Australians, particularly, have significant potential to experience improvements in health and wellbeing and have therefore been a focus of numerous initiatives. Exploring these initiatives allows successful interventions to be identified and built upon in the future to bring greater gains in health and wellbeing to Aboriginal and Torres Strait Islander peoples.

In March 2008, the Council of Australian Governments (COAG), which includes Australian, state, territory and local government representatives, agreed 'to work together to achieve equality in health status and life expectancy between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians by the year 2030'. In 2020, after consultation with Aboriginal and Torres Strait Islander representatives, the agreement was updated to include Aboriginal and Torres Strait Islander groups in addition to governments. The original targets were also reviewed and updated to broaden the focus to achieving equality in all aspects of life and to accelerate progress towards meaningful change. The revised date for achieving these targets is 2031. This commitment is known as 'Closing the Gap' and represents a *healthy public policy*.

To evaluate change in relation to the Closing the Gap initiative, the new agreement identifies 16 targets to monitor improvements in Indigenous health and wellbeing. The targets relate to improving health outcomes, educational attainment, employment and housing, reducing incarceration, out-of-home care, violence and

FIGURE 7.28 The health and wellbeing of young Aboriginal and Torres Strait Islander Australians is a key focus of the Closing the Gap campaign.



suicide, and promoting legal rights relating to land and water and the number of Aboriginal and Torres Strait Islander languages spoken. Specific targets include:

- By 2031, close the gap in life expectancy within a generation.
- By 2031, increase the proportion of Aboriginal and Torres Strait Islander babies with a healthy birthweight to 91 per cent.
- By 2031, increase the proportion of Aboriginal and Torres Strait Islander youth (15–24 years) who are in employment, education or training to 67 per cent.
- By 2031, increase the proportion of Aboriginal and Torres Strait Islander people living in appropriately sized (not overcrowded) housing to 88 per cent.
- A significant and sustained reduction in violence and abuse against Aboriginal and Torres Strait Islander women and children towards zero.
- Significant and sustained reduction in suicide of Aboriginal and Torres Strait Islander people towards zero.

Under the Closing the Gap strategy, numerous interventions have been put in place. It is not possible to explore all of these interventions in this subtopic, but a series of case studies have been selected to highlight the work happening under the Closing the Gap initiative (see **FIGURE 7.29**).

FIGURE 7.29 Examples of strategies implemented under the Closing the Gap initiative



7.5.1 Deadly Choices initiative

In Aboriginal slang, the term ‘deadly’ is used to describe something that is great. Beginning in Queensland in 2010 and spreading throughout Australia, the Deadly Choices initiative works to encourage and empower Aboriginal and Torres Strait Islander peoples to make healthy choices for themselves and their families — to stop smoking, to eat good food and exercise daily. To achieve these goals, the Deadly Choices initiative works

to *develop personal skills* by providing a range of education programs including tobacco cessation programs and cooking programs.

Another key component of the Deadly Choices initiative is to encourage people to access their local Community Controlled Health Service and complete an annual 'Health Check'. This works to *reorient health services* by allowing health workers to identify those at risk of health concerns and address them prior to the onset of disease or injury.

Deadly Choices works to *strengthen community action* by empowering Aboriginal and Torres Strait Islander communities to provide health services managed by fellow community members. Culturally appropriate healthcare has been shown to increase the rate at which Aboriginal and Torres Strait Islander people access healthcare. Appropriate healthcare works to improve health and wellbeing outcomes especially for vulnerable groups such as pregnant women and young children.

7.5.2 Learn Earn Legend!

'Learn Earn Legend!' is a program launched by the Australian government in February 2010. The program's message encourages and supports young Aboriginal and Torres Strait Islander people to stay at school to *develop personal skills* such as literacy and numeracy, so they can get a job and be a legend for themselves, their family and their community. Young people are paired with Aboriginal and Torres Strait Islander mentors to provide guidance on the importance of education, training and employment.

Learn Earn Legend! is *strengthening community action* as it is delivered by community leaders, sport stars and local community members whom young Aboriginal and Torres Strait Islander people respect and aspire to emulate. Learn Earn Legend! supports events and programs throughout Australia by creating partnerships with other groups to promote Indigenous health and wellbeing, including AFL in NSW and ACT, Tennis Australia National Indigenous program, NRL Indigenous all stars and Former Origin Greats (FOGS).

FIGURE 7.30 Aboriginal and Torres Strait Islander cultures have a long and rich history that must be considered when providing healthcare to ensure that the care provided is appropriate.



FIGURE 7.31 Learn Earn Legend! uses mentors that Aboriginal and Torres Strait Islander youth look up to, including professional sportspeople.



7.5.3 The 2 Spirits program

The '2 Spirits' program embraces a 'whole of community approach' to improve the sexual health and wellbeing of Aboriginal and Torres Strait Islander gay men and **sistergirls** through education, prevention, health promotion, and community development activities.

The program *reorients health services* by working in consultation with community members to identify appropriate means of addressing sexual health issues in this population. An example of some of the services 2 Spirits provide include: printed resources and campaigns; peer education workshops; retreats for gay men, sistergirls and people living with HIV; and social support groups.

The 2 Spirits program also has services directed at the partners, families and friends of Aboriginal and Torres Strait Islander people living with HIV, gay men and sistergirls, as well as the wider community, which *strengthens community action*. For example, the program holds community forums focusing on HIV/AIDS, sexual health and wellbeing, injecting drug use, discrimination and sexuality issues. Such forums *develop personal skills* and increase knowledge and understanding within communities.

7.5.4 The Aboriginal Road to Good Health program

The 'Aboriginal Road to Good Health' program is a type 2 diabetes prevention program for Victorian Aboriginal people and their families. The program aims to *develop personal skills* so people can make sustainable lifestyle changes, like being more physically active and choosing healthier food and drink. Such measures help reduce the risk of developing type 2 diabetes and other conditions such as heart disease and high blood pressure.

The program *creates a supportive environment* by being free for participants. It is run in a number of communities across Victoria by Aboriginal health workers and other health professionals, and therefore also works to *reorient health services*.

FIGURE 7.32 Reading food labels is a skill taught by the Aboriginal Road to Good Health program.



7.5.5 Tackling Indigenous Smoking (TIS) initiative

The Tackling Indigenous Smoking (TIS) program is a federal government initiative that works to improve life expectancy among Aboriginal and Torres Strait Islander peoples by reducing tobacco use. Local organisations run activities designed to reduce smoking rates. Resources and tools are available to support these activities, specifically:

- The TIS program *reorients health services* by implementing the three-day Quitskills training program, providing knowledge and skills for frontline community and health workers to assist them in supporting Aboriginal and Torres Strait Islander people in quitting smoking.
- It provides regional tobacco grants for local organisations to implement tobacco cessation activities and Indigenous Quitline enhancement grants, which aim to improve the capacity of Quitline services to provide accessible and appropriate services to Aboriginal and Torres Strait Islander people. These grants assist in *creating a supportive environment*.

Sistergirls Aboriginal and Torres Strait Islander transgender women (assigned male at birth) who have a distinct cultural identity and often take on female roles within the community, including looking after children and family (2015, Sisters & Brothers NT)

7.5.6 Aboriginal Quitline

Aboriginal Quitline is a telephone counselling service that *creates a supportive environment* by providing confidential support for Aboriginal and Torres Strait Islander people who want to quit smoking. The service is available to clients in Victoria, New South Wales and Queensland.

Aboriginal Quitline staff are professionals with specialist training to help people quit smoking in a culturally appropriate way. Counsellors provide callers with a plan for quitting that is tailored to their individual needs, as well as information on different quitting methods and products, which *develops personal skills*. Counsellors can also provide callers with links to local support groups if requested, which assists in *creating a supportive environment*.

7.5.7 Feedin' the Mob

'Feedin' the Mob' is a nutrition, physical activity and healthy lifestyle program for Aboriginal Australians in the City of Whittlesea, Victoria. Based at Plenty Valley Community Health, Feedin' the Mob is funded by the federal government and supported by Whittlesea Council through its Healthy Communities initiative. This commitment to funding represents a *healthy public policy*.

Feedin' the Mob *strengthens community action* by encouraging the community to be involved in activities that draw on local culture to *develop personal skills* by teaching the benefits of healthy eating and lifestyle. The target audiences are teenagers, parents and carers, people living with chronic illness and Elders. The project includes a community garden, cooking classes and information sharing about primary healthcare and the prevention of chronic disease.

7.5.8 Fitzroy Stars

The Fitzroy Stars Football Club (FSFC), based in the Aboriginal community in Melbourne's northern suburbs, is a Victorian institution.

The mission of the Fitzroy Stars Football Club is not just about football. The club's mission is to:

- Nurture a culture that promotes a healthy lifestyle
- Promote fitness, nutrition, diet, self-esteem
- Offer pathways to employment and education
- Foster reconciliation by building strong bridges between Aboriginal and non-Aboriginal communities.

First formed in 1970, the club was inactive for 13 years until 2008, when VicHealth, Oxfam and the Aboriginal Advancement League *strengthened community action* by working together to resurrect the FSFC. Today, families and community members spend weekends and weeknights engaged in supporting their team and undertaking volunteer activities to ensure that the club is sustained and grows.

The FSFC has become an integral part of the way people spend their weekends and *creates a supportive environment* by giving families a safe place where they can participate in sport and socialise.

In order to achieve its mission, the FSFC *develops personal skills* by providing education relating to issues such as nutrition and employment. It also *reorients health services* by using health professionals to present weekly sessions relating to preventative healthcare such as quitting smoking and receiving regular health checks.

7.5.9 Evaluating initiatives in relation to their capacity to improve Indigenous health and wellbeing

It is important to evaluate initiatives to ensure they are as effective as possible in promoting Indigenous health and wellbeing. Funding is generally limited and ensuring that the most effective interventions are implemented contributes to the greatest gains being achieved.

TABLE 7.4 Examples of Aboriginal and Torres Strait Islander health promotion with regards to each of the five action areas of the Ottawa Charter

Action area	Examples relating to smoking	
Build healthy public policy	'Closing the Gap' is an agreement between all levels of government and Aboriginal and Torres Strait Islander representatives to close the gap in life expectancy within a generation.	Based at Plenty Valley Community Health, Feedin' the Mob is funded by the federal government and supported by Whittlesea Council through its Healthy Communities initiative. This commitment to funding represents a healthy public policy.
Create supportive environments	The Deadly Choices program provides culturally appropriate healthcare using people from the local community.	Aboriginal Quitline is a telephone counselling service that provides confidential support for Aboriginal and Torres Strait Islander people who want to quit smoking.
Strengthen community action	Learn Earn Legend! is delivered by community leaders, sport stars and local community members whom young Aboriginal and Torres Strait Islander people respect and aspire to emulate.	Feedin' the Mob encourages the community to be involved in activities that draw on local culture to educate by teaching the benefits of healthy eating and lifestyle.
Develop personal skills	The 2 Spirits program presents community forums focusing on HIV/AIDS, sexual health and wellbeing, injecting drug use, discrimination and sexuality issues. These forums increase knowledge and understanding within Aboriginal and Torres Strait Islander communities.	Learn Earn Legend! supports young Aboriginal and Torres Strait Islander Australians to stay at school to develop personal skills such as literacy and numeracy
Reorient health services	The Aboriginal Road to Good Health program is delivered by Aboriginal and Torres Strait Islander health workers and seeks to prevent the incidence of type 2 diabetes.	Fitzroy Stars <i>reorients health services</i> by using health professionals to present weekly sessions relating to preventative healthcare such as quitting smoking and receiving regular health checks.

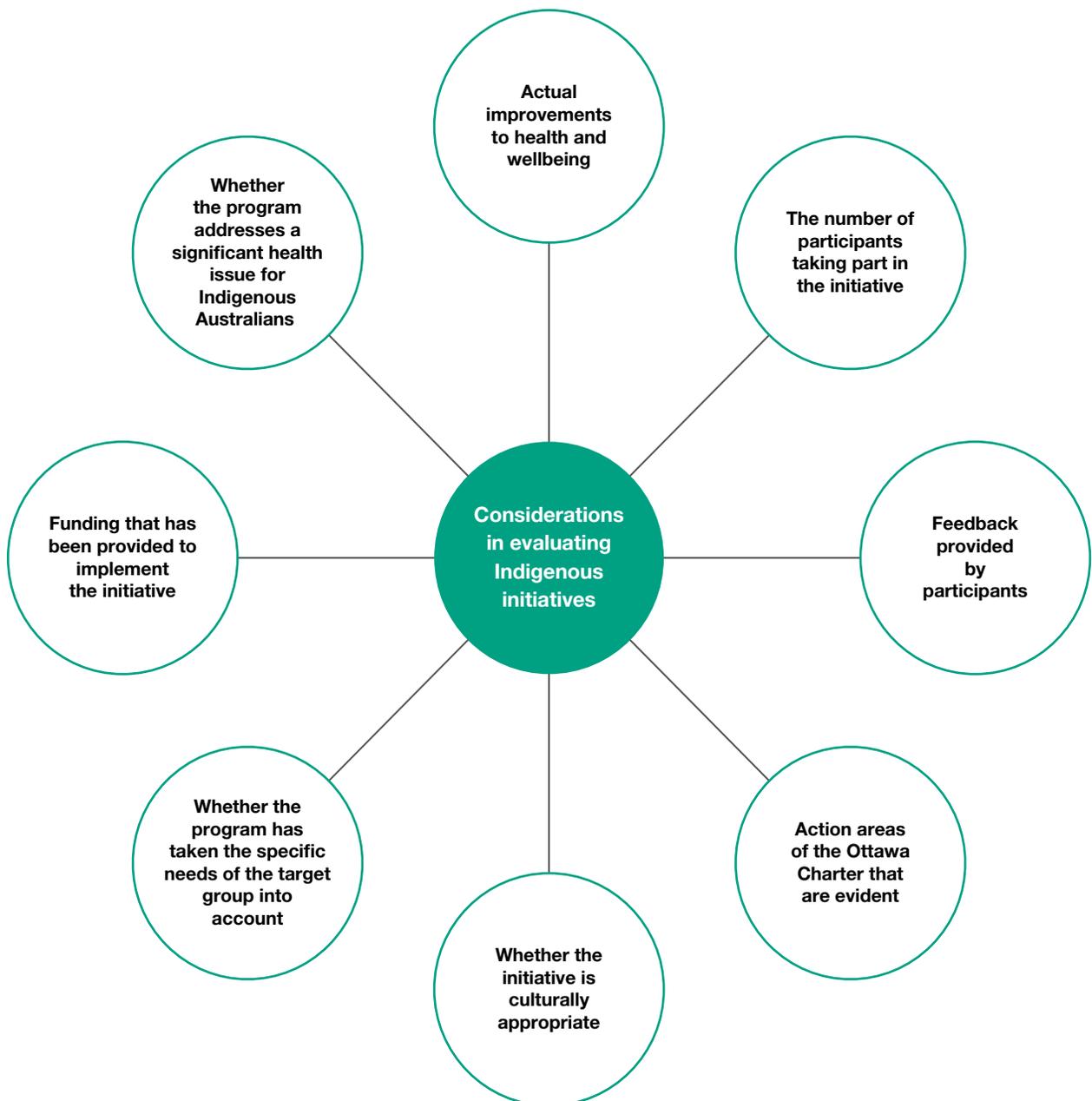
In order to evaluate initiatives, reasons why it is judged to be effective or ineffective should be included and can be based on a number of considerations:

- actual improvements in health and wellbeing that have been made as a result of the initiative — effective initiatives conduct research to determine the level of success achieved. This information can provide evidence to the actual successes of the initiative and the improvements to health and wellbeing that have been achieved.
- the number of people who have accessed or been involved in the initiative — many programs keep records on the number of people taking part. An increase in participants over time and/or participants taking part over an extended period can indicate that the target audience are engaged with the initiative, assisting in achieving its goals.
- feedback provided by participants — those taking part in the program often provide information of their personal experiences, which can indicate the level of success in promoting Indigenous health and wellbeing.
- action areas of the Ottawa Charter that are evident in the initiative, including:
 - *develop personal skills* through the provision of education — education is a resource that people can use to promote their health and wellbeing long after the program finishes.
 - *strengthen community action* by the involvement of various stakeholders and other concerned groups in the planning and implementation of the initiative — when various stakeholders are involved in the planning or implementation of the program, each can bring their strengths and expertise, contributing to the success of the program.
- whether the initiative is culturally appropriate for Aboriginal and Torres Strait Islander peoples, including the consultation, use and training of Aboriginal and Torres Strait Islander personnel in planning and delivering the program — culture is a strong influence in the lives of many Aboriginal and Torres Strait

Islander people. Ensuring interventions are culturally appropriate can assist in increasing participating in the program and improved health and wellbeing outcomes.

- whether the initiative has taken the specific needs of the target group into account, including the specific needs relating to the health and wellbeing of Aboriginal and Torres Strait Islander peoples — the most significant gains in health outcomes occur when the areas requiring the most attention are the focus.
- funding that has been provided to implement the initiative — most interventions require some sort of financial support to ensure they are planned and implemented appropriately. The provision of adequate funding therefore assists the intervention in achieving its goals.
- whether the initiative addresses a significant health issue for Aboriginal and Torres Strait Islander peoples and why it is important to address this issue. For example, food intake is a key contributor to negative health and wellbeing outcomes for many Aboriginal and Torres Strait Islander people. Focusing on this factor can therefore contribute to significant improvements in Indigenous health and wellbeing.

FIGURE 7.33 Considerations in evaluating programs for Aboriginal and Torres Strait Islander peoples



EXAM TIP

In many cases, using one of these considerations will not be enough to justify a judgement. As a result, a range of reasons should be used to add depth to the response.

7.5 Activities

1. Access the **Closing the Gap** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **2 Spirits** weblink and worksheet in the Resources tab and then complete the worksheet
3. Access the **Fitzroy Stars** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

 **Digital documents** Closing the Gap worksheet (doc-34384)
2 Spirits worksheet (doc-32003)
Fitzroy Stars worksheet (doc-32004)

 **Weblinks** Closing the Gap
2 Spirits
Fitzroy Stars

7.5 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

7.5 Quick quiz

on

7.5 Exercise

7.5 Exam questions

Select your pathway

■ LEVEL 1
1, 3, 4

■ LEVEL 2
2, 5, 7

■ LEVEL 3
6, 8

Test your knowledge

1. Briefly explain why Aboriginal and Torres Strait Islander peoples are the target of health promotion activities.
2. Explain how exploring interventions already put in place can promote Indigenous health and wellbeing in the future.
3. Briefly explain the Closing the Gap initiative.
4. Briefly describe two health promotion interventions working to promote the health and wellbeing of Aboriginal and Torres Strait Islander peoples.
5. Briefly discuss three considerations when evaluating the capacity of initiatives to improve Indigenous health and wellbeing.

Apply your knowledge

6. Identify three targets of the Closing the Gap strategy and discuss how progress in each could be made by interventions discussed in this subtopic.
7. Briefly discuss how the action areas of the Ottawa Charter are evident in Indigenous initiatives and explain how each may promote Indigenous health and wellbeing.
8. Use the considerations discussed in this subtopic to evaluate the following initiatives in relation to their capacity to improve Indigenous health and wellbeing:
 - a. Deadly Choices initiative
 - b. The 2 Spirits program
 - c. The Aboriginal Road to Good Health program
 - d. Feedin' the Mob.

Question 1 (1 mark)

'Learn Earn Legend!' is part of the Closing the Gap initiative. The program encourages and supports young Indigenous Australians to stay at school and develop their numeracy and literacy skills, so they can get a job and be a legend for themselves, their family and their community. **Identify** which action area of the Ottawa Charter this is an example of.

Question 2 (1 mark)

Closing the Gap is a health promotion strategy implemented by the Australian government. It aims to improve health and wellbeing of Aboriginal and Torres Strait Islander peoples by closing the gap between Indigenous and non-Indigenous people.

Identify one area/target that is a focus of this initiative.

Question 3 (1 mark)

'Learn Earn Legend!', part of the Closing the Gap initiative, receives funding from the federal government.

Identify which action area of the Ottawa Charter this is an example of.

Question 4 (4 marks)

The 'Deliver Active and Healthy Lifestyle' program was developed by the Njernda Aboriginal Corporation (Njernda), based in Echuca, Victoria. The program established an Aboriginal gym with no membership fees to encourage Aboriginal people in the Echuca area to exercise and improve their health outcomes. The building was funded by the Office for Aboriginal and Torres Strait Islander Health, and the equipment and training was resourced through Closing the Gap funding. The community gym was established to offer targeted quality programs, delivered by qualified members of the Aboriginal community, and accessible by all members of the Aboriginal community. The programs were designed to be individually tailored and include physical exercise, health promotion and dietary advice.

Source: adapted from www.enliven.org.au

Identify two action areas of the Ottawa Charter and describe how they are evident in the 'Deliver Active and Healthy Lifestyle' program.

Question 5 (4 marks)

Describe how the 'Deliver Active and Healthy Lifestyle' program (described in question 4) could improve two dimensions of health and wellbeing for Indigenous Australians.

More exam questions are available in your learnON title.

7.6 The Australian Dietary Guidelines

KEY CONCEPT Understanding the Australian Dietary Guidelines as an initiative to promote healthy eating in Australia

Healthy eating is associated with lower rates of disease and increased health status. Inadequate food intake is emerging as a key factor contributing considerably to the burden of disease in Australia, particularly as related to obesity, cardiovascular disease and type 2 diabetes. The prevalence of these conditions is high and is predicted to increase if food behaviours are not modified among many Australians.

The social and economic impacts associated with diet-related diseases are significant and take a great toll on the community and individuals. The federal government and non-government agencies, such as Nutrition Australia, play a number of roles in promoting healthy eating in the community with the aim of reducing the impact of these conditions.

7.6.1 The Australian Dietary Guidelines

The Australian Dietary Guidelines were developed by the National Health and Medical Research Council (NHMRC), a federal government body, and were reviewed and updated in 2013.

The Australian population has experienced an increase in diet-related conditions and diseases, and the guidelines are designed to address the causes of the increase. Eating too many energy-dense processed foods and not enough fruit and vegetables are two examples of trends that are designed to be addressed by the guidelines.

The guidelines are intended to be used by health professionals, educators, industry bodies and other parties interested in promoting healthy eating. They are aimed at all people in the general healthy population, including those with common diet-related risk factors such as being overweight, but not for those with serious medical conditions, such as type 2 diabetes, who require specialised dietary advice.

The Dietary Guidelines have been developed to provide advice relating to the types and amounts of foods, food groups and dietary patterns that will help Australians to:

- develop healthy dietary patterns that will promote health and wellbeing in the community
- reduce the risk of developing a range of diet-related conditions such as hypertension (high blood pressure) and impaired glucose regulation
- reduce the risk of developing chronic conditions such as type 2 diabetes, cardiovascular disease and some cancers.

Advice is also provided on individual differences among the population that contribute to different needs and choices regarding food intake, including for:

- those at different lifespan stages, such as childhood and late adulthood
- pregnant and lactating women
- vegetarians and vegans
- people from different backgrounds, such as Australians of Asian origin
- Aboriginal and Torres Strait Islander peoples
- people living outside Australia's major cities
- people living in socioeconomic disadvantage
- individuals aiming to lose weight
- individuals aiming to maintain their weight.

The five guidelines are summarised in **TABLE 7.5**.

TABLE 7.5 The Australian Dietary Guidelines

GUIDELINE 1	To achieve and maintain a healthy weight, be physically active and choose amounts of nutritious food and drinks to meet your energy needs. <ul style="list-style-type: none">• Children and adolescents should eat sufficient nutritious foods to grow and develop normally. They should be physically active every day and their growth should be checked regularly.• Older people should eat nutritious foods and keep physically active to help maintain muscle strength and a healthy weight.
GUIDELINE 2	Enjoy a wide variety of nutritious foods from the following five groups every day and drink plenty of water. <ul style="list-style-type: none">• Plenty of vegetables, including different types and colours, and legumes/beans• Fruit• Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley• Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans• Milk, yoghurt, cheese and/or their alternatives, mostly reduced fat (reduced fat milks are not suitable for children under the age of two years)

GUIDELINE 3	<p>Limit intake of foods containing saturated fat, added salt, added sugars and alcohol.</p> <p>a. Limit intake of foods high in saturated fat such as many biscuits, cakes, pastries, pies, processed meats, commercial burgers, pizza, fried foods, potato chips, crisps and other savoury snacks.</p> <ul style="list-style-type: none"> • Replace high fat foods that contain predominantly saturated fats such as butter, cream, cooking margarine, coconut and palm oil with foods that contain predominantly polyunsaturated and monounsaturated fats such as oils, spreads, nut butters/pastes and avocado. • Low fat diets are not suitable for children under the age of two years. <p>b. Limit intake of foods and drinks containing added salt.</p> <ul style="list-style-type: none"> • Read labels to choose lower sodium options among similar foods. • Do not add salt to foods in cooking or at the table. <p>c. Limit intake of foods and drinks containing added sugars such as confectionery, sugar-sweetened soft drinks and cordials, fruit drinks, vitamin waters, energy and sports drinks.</p> <p>d. If you choose to drink alcohol, limit intake. For women who are pregnant, planning a pregnancy or breastfeeding, not drinking alcohol is the safest option.</p>
GUIDELINE 4	Encourage, support and promote breastfeeding.
GUIDELINE 5	Care for your food; prepare and store it safely.

Source: NHMRC 2013, *Eat for Health – Australian Dietary Guidelines*.

Guideline 1 relates to **energy balance** and encourages individuals to only consume the amount of energy they require for their specific energy needs. A positive energy imbalance occurs when people consume too much energy for their needs, increasing the risk of obesity and associated conditions such as cardiovascular disease, type 2 diabetes and some cancers. Energy comes from foods rich in carbohydrates, fats and protein, and these should be moderated to ensure energy intake is balanced.

Guideline 2 provides advice relating to the consumption of the five food groups. Consuming a range of foods from the five food groups is associated with lower levels of mortality and morbidity compared to diets in which a range of foods is not consumed. The benefits to health and wellbeing from consuming the five food groups and water are outlined below.

- Vegetables and legumes/beans — these foods are low in fat and relatively low in energy (kilojoules) while also providing carbohydrates, the body’s preferred fuel for energy production. Vegetables, legumes and beans are also high in fibre, which maintains the health of the digestive system and reduces the risk of colorectal cancer. Fibre also provides feelings of fullness, which can reduce the risk of overeating and weight gain. Rich in antioxidants, vegetables work to reduce the impact of free radicals and thus the risk of cardiovascular disease and cancer. As a result of this range of functions, adequate consumption of vegetables is related to a reduced risk of obesity, some cancers, cardiovascular disease and type 2 diabetes.
- Fruit — like vegetables, fruits are low in fat and provide carbohydrates for energy while also being a major source of fibre and antioxidants. As a result, adequate fruit intake is associated with lower rates of some cancers, obesity, cardiovascular disease and type 2 diabetes, and improved functioning of body systems such as the immune system.
- Grain (cereal) foods — wholegrain and/or high cereal fibre foods, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley, are good sources of carbohydrates and fibre while being low in fat. Grain foods contribute to a decreased risk of obesity, colorectal and other cancers, cardiovascular disease and type 2 diabetes.
- Lean meats and alternatives — lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans are major sources of protein as well as vitamins, minerals and essential fatty acids. Protein is required to maintain healthy cells, tissues and systems for optimal functioning of many body processes such as immune and cardiovascular function. Fish, nuts and seeds can contain monounsaturated and polyunsaturated fats, which can decrease the risk of cardiovascular disease by lowering levels of low-density lipoprotein (explored in section 3.6.1).

Energy balance when the amount of energy consumed is the same as the amount of energy required. Energy balance contributes to neither weight gain or weight loss.

- Dairy products and alternatives (reduced fat) — milk, yoghurt, cheese and/or their alternatives are high in many nutrients including protein and calcium, which supports bone health and reduces the risk of osteoporosis. Regular consumption of milk and alternatives has also been shown to decrease the risk of cardiovascular disease, some cancers and type 2 diabetes, although the cause of this is not fully understood.
- Water — water is required for many bodily processes including digestion, waste removal and chemical reactions, and does not contribute any energy to the body (as most other drinks do). As a result, adequate water intake is associated with well-functioning body systems and reduced risk of weight gain and associated conditions such as cardiovascular disease, some cancers and type 2 diabetes. As water doesn't contain any sugar, it can also decrease the risk of dental caries (explored in section 3.6.3).

The Australian Dietary Guidelines resource also includes advice on the recommended number of serves that should be consumed from each food group on a daily basis, according to age, sex and pregnancy and breastfeeding status (see **TABLE 7.6**).

TABLE 7.6 Recommended number of serves per day from each food group

Recommended number of serves per day						
	Age (years)	Vegetables and legumes/beans	Fruit	Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties	Lean meats, poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans	Milk, yoghurt, cheese and/or alternatives, mostly reduced fat
Boys	2–3	2½	1	4	1	1½
	4–8	4½	1½	4	1½	2
	9–11	5	2	5	2½	2½
	12–13	5½	2	6	2½	3½
	14–18	5½	2	7	2½	3½
Men	19–50	6	2	6	3	2½
	51–70	5½	2	6	2½	2½
	70+	5	2	4½	2½	3½
Girls	2–3	2½	1	4	1	1½
	4–8	4½	1½	4	1½	1½
	9–11	5	2	4	2½	3
	12–13	5	2	5	2½	3½
	14–18	5	2	7	2½	3½
	Pregnant (up to 18 years)	5	2	8	3½	3½
	Breastfeeding (up to 18 years)	5½	2	9	2½	4
Women	19–50	5	2	6	2½	2½
	51–70	5	2	4	2	4
	70+	5	2	3	2	4

Recommended number of serves per day						
	Age (years)	Vegetables and legumes/beans	Fruit	Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties	Lean meats, poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans	Milk, yoghurt, cheese and/or alternatives, mostly reduced fat
	Pregnant (19–50 years)	5	2	8½	3½	2½
	Breastfeeding (19–50 years)	7½	2	9	2½	2½

Note: Additional amounts of the five food groups or unsaturated spreads and oils or discretionary food choices are needed only by people who are taller or more active to meet additional energy requirements.

Source: NHMRC 2013, *Eat for Health – Australian Dietary Guidelines*.

To help people consume the required number of serves from each of the five food groups, examples of foods making up one ‘serve’ are also provided in the guidelines (see **TABLES 7.7 to 7.11**). People can use this information to analyse their food intake more accurately and make informed changes to their food intake.

TABLE 7.7 Sample serving sizes for vegetables and legumes/beans

Food group	Serving sizes
Vegetables and legumes/beans	75 g (½ cup) cooked green or Brassica or cruciferous vegetables
	75 g (½ cup) cooked orange vegetables
	75 g (½ cup) cooked dried or canned beans, chickpeas or lentils, no added salt
	75 g (1 cup) raw green leafy vegetables
	75 g starchy vegetables (e. g. ½ medium potato, or equivalent of sweet potato, taro, sweet corn or cassava)
	75 g other vegetables e. g. 1 medium tomato

Source: NHMRC 2013, *Eat for Health – Australian Dietary Guidelines*.

FIGURE 7.34 Foods that represent one serve of vegetables and legumes/beans



TABLE 7.8 Sample serving sizes for fruit

Food group	Serving sizes
Fruit	150 g (1 piece) of medium-sized fruit e.g. apple, banana, orange, pear
	150 g (2 pieces) of small fruit e.g. apricots, kiwi fruit, plums
	150 g (1 cup) diced, cooked or canned fruit ¹
	125 mL (½ cup) 100% fruit juice ²
	30 g dried fruit ² e.g. 4 dried apricot halves, 1½ tablespoons of sultanas

Notes:

¹ Preferably with no added sugar

² Only to be used occasionally as a substitute for other foods in the group

Source: NHMRC 2013, *Eat for Health* — Australian Dietary Guidelines.

FIGURE 7.35 Foods that represent one serve of fruit



TABLE 7.9 Sample serving sizes for grains (cereal) foods

Food group	Serving sizes
Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties	1 slice of bread or ½ a medium roll or flat bread (40 g)
	½ cup cooked rice, pasta, noodles, barley, buckwheat, semolina, polenta, bulgur or quinoa (75–120 g)
	½ cup cooked porridge (120 g), ⅔ cup wheat cereal flakes (30 g) or ¼ cup muesli (30 g)
	3 crispbreads (35 g)
	1 crumpet (60 g) or 1 small English muffin or scone (35 g)
	¼ cup flour (30 g)

Source: NHMRC 2013, *Eat for Health* — Australian Dietary Guidelines.

FIGURE 7.36 Foods that represent one serve of grain (cereal) foods



TABLE 7.10 Sample serving sizes for lean meats, poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans

Food group	Serving sizes
Lean meats, poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans	65 g cooked lean red meats (e.g. beef, lamb, pork, venison or kangaroo) or ½ cup of lean mince, 2 small chops, 2 slices of roast meat (about 90–100 g raw weight)
	80 g cooked poultry (about 100 g raw weight) e.g. chicken, turkey
	100 g cooked fish fillet (about 115 g raw weight) or 1 small can of fish, no added salt, not in brine
	2 large eggs (120 g)
	1 cup (150 g) cooked dried beans, lentils, chickpeas, split peas, or canned beans
	170 g tofu
	30 g nuts or seeds or nut/seed paste, no added salt ¹

¹ Only to be used occasionally as a substitute for other foods in the group

Source: NHMRC 2013, *Eat for Health – Australian Dietary Guidelines*.

FIGURE 7.37 Foods that represent one serve of lean meat, poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans

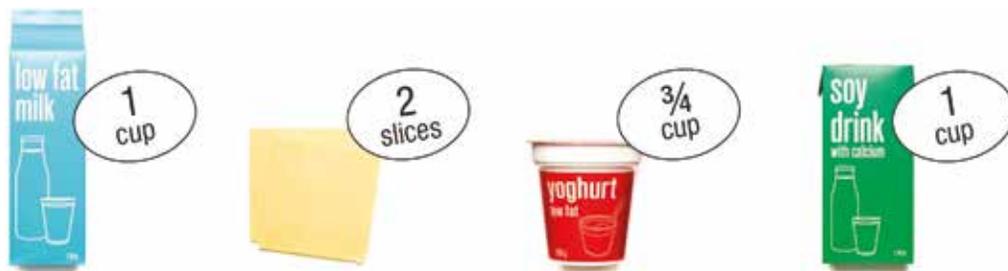


TABLE 7.11 Sample serving sizes for milk, yoghurt, cheese and/or alternatives

Food group	Serving sizes
Milk, yoghurt, cheese and/or alternatives, mostly reduced fat	1 cup (250 mL) milk – fresh, UHT long life or reconstituted powdered
	½ cup (120 mL) evaporated unsweetened milk
	¾ cup (200 g) yoghurt
	40 g (2 slices or 4 × 3 × 2 cm piece) hard cheese e.g. cheddar
	½ cup (120 g) ricotta cheese
	1 cup (250 mL) soy, rice or other cereal drink with at least 100 mg of added calcium per 100 mL

Source: Adapted from NHMRC 2013, *Eat for Health – Australian Dietary Guidelines*.

FIGURE 7.38 Foods that represent one serve of milk, yoghurt, cheese and/or alternatives



The Australian Dietary Guidelines also provide advice on how many serves of unsaturated fats should be consumed on a daily basis to promote health and wellbeing (see **TABLE 7.12**).

FIGURE 7.39 Examples of foods containing unsaturated fats



TABLE 7.12 Recommended number of serves of unsaturated spreads and oils per day

	Age (years)	Number of serves
Boys	2–3	½
	4–8	1
	9–11	1
	12–13	1½
	14–18	2
Men	19–50	4
	51–70	4
	70+	2
Girls	2–3	½
	4–8	1
	9–11	1
	12–13	1½
	14–18	2
	Pregnant (up to 18 years)	2
	Breastfeeding (up to 18 years)	2
Women	19–50	2
	51–70	2
	70+	2
	Pregnant (19–50 years)	2
	Breastfeeding (19–50 years)	2

Source: NHMRC 2013, *Eat for Health – Australian Dietary Guidelines*.

Examples of food items that count as one serve of unsaturated fats are shown in **TABLE 7.13**.

TABLE 7.13 Sample serving sizes for unsaturated fats

Food group	Serving sizes
Unsaturated fats	10 g polyunsaturated spread
	10 g monounsaturated spread
	7 g polyunsaturated oil, for example olive or canola oil
	10 g tree nuts or peanuts or nut pastes/butters

Source: National Health and Medical Research Council.

Guideline 3 focuses on limiting the intake of foods that are either energy dense or increase the risk of conditions such as cardiovascular disease. These foods are referred to as discretionary foods. They can sometimes be included in small amounts by people who are taller or more physically active, but they are not a necessary part of a healthy diet.

Discretionary foods are food and drinks that are not necessary to provide the nutrients the body needs but may add variety. Foods in this category include cakes and biscuits; confectionery and chocolate; pastries and pies; ice confections, butter, cream and spreads that contain predominantly saturated fats; potato chips, crisps and other fatty or salty snack foods; sugar-sweetened soft drinks and cordials; sports and energy drinks; and alcoholic drinks (see **FIGURE 7.40**). Intake of these foods should be limited as many are high in saturated fats, sugars and/or alcohol, and are therefore described as energy dense (see **TABLE 7.14**). Many are also high in salt, which increases the risk of cardiovascular disease and osteoporosis.

FIGURE 7.40 Discretionary foods include those with high levels of saturated fat, added salt, added sugar and/or alcohol.



Source: NHMRC 2013, *Eat for Health – Australian Dietary Guidelines*.

TABLE 7.14 Sample serving sizes for discretionary foods

Food group	Serving sizes
Discretionary foods	2 slices (50–60 g) processed meats, salami or Mettwurst
	½ snack-size packet (30 g) salty crackers or crisps
	1 (40 g) donut
	½ bar (25 g) chocolate
	1 tbsp (20 g) butter
	1 can (375 mL) soft drink (sugar-sweetened)
	¼ (60 g) commercial meat pie or pastie (individual size)
	12 (60 g) fried hot chips

Source: National Health and Medical Research Council.

Guideline 4 promotes breastfeeding for infants. According to the World Health Organization, ‘breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants’. This is largely because breast milk contains all of the nutritional requirements to support the growth and development of infants to around six months of age. Those who are breastfed for the first six months of life have a lower risk of infection, asthma and sudden infant death syndrome. Later in life, those who were breastfed as infants experience a decreased risk of obesity, hypertension and some chronic diseases.

Guideline 5 relates to caring for food, and preparing and storing it safely. The aim of this guideline is to reduce the risk of foodborne diseases in the community. It is estimated that there are over five million cases of food poisoning in Australia every year, and this reduces the level of health and wellbeing experienced.

CASE STUDY

Anna's food intake: applying the Australian Dietary Guidelines

Consider the following food intake of Anna, a 20-year-old female.

Breakfast:

2 pieces of toast with margarine (5 grams per slice) and 1 slice of cheese on each piece
2 cups of orange juice

Snack:

Roast beef roll (2 slices of beef, medium roll)
1 can of soft drink
1 chocolate bar

Lunch:

1 egg and lettuce sandwich (total filling equal to 1/2 cup of lettuce, 1 large egg)
1 small carton of yoghurt (100 g)
1 can of soft drink

Snack:

50 grams of peanuts
1 banana
1 glass of water

Dinner:

2 slices of roast pork and 1 cup of cooked, mixed vegetables, 1 medium bread roll with butter
1 cup of fruit salad with cream

CASE STUDY REVIEW

1. Complete a summary table identifying the number of serves of each food group consumed by Anna.
2. Compare Anna's intake to the guidelines given in **TABLE 7.6**.
3.
 - a. Which food groups did Anna consume the optimal amount of?
 - b. Explain how consuming an optimal amount of these foods might promote Anna's health and wellbeing.
4.
 - a. Which food groups did Anna not consume enough of?
 - b. Explain how not consuming enough of these foods might affect Anna's health and wellbeing.
5.
 - a. Which food groups did Anna consume too much of?
 - b. Explain how consuming too much of these foods might affect Anna's health and wellbeing.
6. Comment on Anna's water consumption. What modifications would you recommend for Anna in relation to her water intake?
7. Why might it be more accurate to assess food intake over three days instead of only one?
8. Suggest changes that Anna could make to her diet to more closely reflect the recommendations of the Australian Dietary Guidelines.

The Australian Guide to Healthy Eating

The Australian Guide to Healthy Eating is a food selection tool incorporated into the Australian Dietary Guidelines. It is intended to be used by consumers to assist them in planning, selecting and consuming adequate proportions of foods from the five food groups. The Australian Guide to Healthy Eating is a visual tool that reflects the recommended dietary advice detailed in Australian Dietary Guidelines 2 and 3.

TABLE 7.15 The Australian Guide to Healthy Eating

Grain foods such as bread, cereal, rice and pasta should account for around 30–35 per cent of total daily food intake. These foods are high in carbohydrates, which provide fuel for energy production, and high in fibre, which assists with weight management and maintenance of digestive health.

Vegetables and legumes/beans make up the second biggest section and should account for around 30 per cent of daily food intake. These foods include fresh, frozen and tinned vegetables, legumes such as lentils and chickpeas, and beans such as kidney beans. These foods are rich sources of carbohydrates, fibre, protein and antioxidants, which assist in promoting optimal health and wellbeing.

Meats and meat alternatives should account for around 15 per cent of total food intake. These foods provide much of the protein required for maintenance of cells and tissues and the provision of energy.

Although **fruit** contains many vitamins and minerals required for optimal health and wellbeing, it can also contain high levels of carbohydrates, which can contribute to weight gain if not used for energy. As a result, fruit should make up around 10–12 per cent of total food intake.

Milk and other dairy products or alternatives (mostly reduced-fat varieties) should also account for around 10–12 per cent of total food intake. These foods are rich in calcium and are required for optimal bone health.

The Australian Guide to Healthy Eating shows a circle divided into five wedges, each representing one of the five food groups, representing Dietary Guideline 2. The size of each wedge reflects the proportion of each food group that should be consumed on a daily basis.

The Australian Guide to Healthy Eating recommends that people consume plenty of water, represented by an image of a glass being filled from a tap. Water is required for many body processes but does not contribute any energy and so can assist in maintaining a healthy body weight.

The healthier fats, including foods such as margarine and canola spray, are shown in the bottom left corner of the Australian Guide to Healthy Eating. These foods contain monounsaturated fats and/or polyunsaturated fats and can assist in reducing the risk of cardiovascular disease.

The foods shown in the bottom right corner of the Australian Guide to Healthy Eating are those that should be consumed only sometimes and in small amounts, representing Guideline 3. They are not necessary to provide the nutrients the body needs, but may add variety. Many of these foods are high in saturated fats, sugars and/or alcohol and are therefore described as energy-dense; these can contribute to weight gain and associated conditions. Many are also high in salt, which increases the risk of cardiovascular disease and osteoporosis. Examples of discretionary foods include pies and other pastries, cakes, processed meats, soft and sports drinks, cordial, alcohol, potato chips, chocolate and biscuits.

The Australian Guide to Healthy Eating is a useful model that provides basic nutrition advice; however, it does not provide information on serving sizes and composite foods (those containing food from a number of different groups, such as pizza or a casserole) are not included, and this can make the model difficult to follow.

FIGURE 7.41 The Australian Guide to Healthy Eating is a food selection model designed to visually represent dietary guidelines 2 and 3.



Australian Government
National Health and Medical Research Council
Department of Health and Ageing

www.eatforhealth.gov.au

Australian Guide to Healthy Eating

Enjoy a wide variety of nutritious foods from these five food groups every day.
Drink plenty of water.



Use small amounts



Only sometimes and in small amounts



7.6 Activity

Access the **Servings calculator** and **Nutrients calculator** weblinks and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital document** Servings and nutrients calculator worksheet (doc-32213)
-  **Weblinks**
 - Servings calculator
 - Nutrients calculator

7.6 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

7.6 Quick quiz

on

7.6 Exercise

7.6 Exam questions

Select your pathway

■ LEVEL 1
1, 2, 5

■ LEVEL 2
3, 4, 6, 8

■ LEVEL 3
7, 9

Test your knowledge

- Briefly describe the Australian Dietary Guidelines.
- Briefly explain why the guidelines were developed.
- Complete the following table using the information about Guideline 2.

Food group	Key nutrients present in the food group	How the food group can promote health and wellbeing and/or health status

- Identify the nutrients and substances found in discretionary foods.
 - Explain why the intake of these nutrients and substances should be limited.
- Briefly describe the Australian Guide to Healthy Eating.

Apply your knowledge

- Choose three of the Australian Dietary Guidelines and write a short response explaining why each guideline is important. Share your results with a partner.
- Explain how the Australian Dietary Guidelines could promote healthy eating and health status for children in Australia.
- Outline the similarities and differences between the Australian Dietary Guidelines and the Australian Guide to Healthy Eating.
- Explain two ways that the Australian Dietary Guidelines could assist in addressing cardiovascular disease.

Question 1 (2 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.6.b; © VCAA

Provide two reasons **why** the Australian Dietary Guidelines were introduced.

Question 2 (2 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.6.c; © VCAA

Explain how the 'Australian Guide to Healthy Eating' reflects the *Australian Dietary Guidelines*.

Question 3 (2 marks)

Source: VCE 2015, *Health and Human Development Exam*, Q.6.b; © VCAA

Between 2011 and 2013, the Australian Government conducted the Australian Health Survey (AHS), which collected in-depth data on nutrition. One of the preliminary findings was that the average daily consumption of sodium was 2404 mg per day, significantly higher than the 460–920 mg recommended by the National Health and Medical Research Council (NHMRC).

Name the Australian Dietary Guideline that is related to sodium consumption.

Question 4 (2 marks)

Source: VCE 2014, *Health and Human Development Exam*, Q.5.a; © VCAA

Provide two reasons why the Australian Dietary Guidelines have been developed by the Australian Government.

Question 5 (4 marks)

Source: VCE 2014, *Health and Human Development Exam*, Q.5.c; © VCAA

Dietary Guideline 3 states that an individual should 'limit intake of foods containing saturated fat, added salt, added sugars and alcohol'.

Explain two ways in which this guideline may help reduce the incidence of diabetes mellitus.

More exam questions are available in your learnON title.

7.7 The work of Nutrition Australia

► **KEY CONCEPT** Understanding the role of Nutrition Australia as an initiative to promote healthy eating in Australia

Nutrition Australia is Australia's major community education body for nutrition. Established in 1979, Nutrition Australia is a non-government organisation represented by a wide range of members from the community and services all of Australia. Nutrition Australia's mission is to promote optimal health and wellbeing for all Australians by encouraging food variety and physical activity. The objectives of Nutrition Australia are to:

- act as a source of scientific information on key nutrition issues
- produce and disseminate material on nutrition to policy makers, the media, educators, the food industry and consumers
- act as consultants to government departments, the food industry and consumer groups as required on issues related to food and nutrition
- encourage innovation in the dissemination of nutritional knowledge.

7.7.1 Nutrition Australia

Nutrition Australia acts to promote healthy eating by providing the latest information on nutrition research, and current food and health and wellbeing trends. This information is dispersed via media campaigns, the Nutrition Australia website and through seminars for health professionals and the general public. Nutrition Australia also provides a range of resources and services aimed at helping groups and individuals to implement their own healthy eating plan (see **FIGURE 7.43**).

FIGURE 7.42 Nutrition Australia aims to promote healthy eating and adequate physical activity.



FIGURE 7.43 The work of Nutrition Australia



Healthy Eating Advisory Service

The Healthy Eating Advisory Service is funded by the Victorian Government and delivered by Nutrition Australia Vic Division. The Healthy Eating Advisory Service works to promote consumption of healthy food and drinks in early childhood services, schools, hospitals and workplaces across Victoria (see the case study on Goulburn Valley Grammar School). Services provided include:

- phone advice and support to assist in providing nutritious, tasty and cost-effective food and drink choices, including assistance with menu planning
- staff training on developing and modifying menus, menu assessments, considering options for healthy vending machines and developing a healthy food policy
- training for cooks, chefs, food service and other key staff to produce healthy food options
- advice to the food industry and health professionals to promote healthy eating in these settings.

CASE STUDY

Goulburn Valley Grammar School

Taking small steps can add up to significant change. And that's how Marlene Rutherford at Goulburn Valley Grammar School approached the transition to a healthier canteen menu.

As Canteen Manager at the Shepparton-based secondary school, Marlene has a vision of providing food that's nutritious and delicious for students.

With just five staff and the support of volunteers, the canteen serves more than 650 students each day. This means a very busy schedule, so Marlene was looking for quick and simple ways to improve the menu, without blowing the budget or losing sales.

They started with a free menu assessment from the Healthy Eating Advisory Service, which categorised all the available foods and drinks as Everyday, Select Carefully or Occasionally, and provided tailored advice for healthy changes the canteen could make in a step-by-step approach. The aim was to make Everyday foods dominate. The major recommendations were to start slowly removing the Occasionally items, and increasing the number of Everyday items on offer.

So far, Goulburn Valley Grammar School has made good progress and they're committed to working towards meeting the School Canteens and Other School Food Services Policy.

Marlene says some of their major successes were making changes that the students didn't even notice, like increasing the number of dishes made on site, including more veggies in their favourite foods, and no longer putting margarine and butter on rolls and sandwiches. These small changes instantly improved the nutritional value of many of the foods, and the students actually prefer it!

Vegetable-packed dishes made on site, such as pizza and bolognaise, are now more popular than the pre-made varieties. This is a *great* result for Marlene and the team, as making more meals on site gives them full control over the ingredients, the nutritional value and their budget.

The canteen also now promotes water consumption by lowering the price to make it the cheapest drink to buy, which has seen water sales increase as a result.

The feedback from students, staff and parents is very positive and encouraging. They've welcomed the changes and Marlene remains committed to applying the recommendations from the Healthy Eating Advisory Service menu assessment. Her vision is to have even more healthy, tasty dishes, helping to educate the students to make informed food and drink choices, even when they're away from school.

Source: Healthy Eating Advisory Service.

FIGURE 7.44 The free menu assessment from the Healthy Eating Advisory Service aimed to make 'Everyday' foods dominate in the school's canteen.



CASE STUDY REVIEW

1. Using examples, explain how the information provided to Goulburn Valley Grammar School by Nutrition Australia Vic Division's Healthy Eating Advisory Service has assisted in promoting healthy eating among staff and students.
2. Discuss how this information may promote health and wellbeing and health status.

National Nutrition Week campaign

Nutrition Australia coordinates the events and produces resources for the annual National Nutrition Week, which runs during the week of 16 October (World Food Day) each year. Information, recipes and resources can be downloaded from the Nutrition Australia website to support schools, health centres, community fairs and shopping centres in promoting healthier eating in line with the annual theme.

7.7.2 Educational resources

Nutrition Australia produces a wide range of publications and resources, including nutrition books, portion bowls and plates, booklets, posters, fact sheets, leaflets and webinars, each of which is designed to encourage individuals, families and communities to enjoy optimal health and wellbeing through food variety. Nutrition Australia has produced resources to address each lifespan stage:

- For schools, Nutrition Australia provides DVDs, teacher resources and incursions (see the following case study), posters and publications that include activities and games for students relating to healthy eating. The 'Packing a School Lunchbox' DVD helps educate parents, students and teachers about healthy eating at school.
- For childcare centres, Nutrition Australia produces resources on meeting accreditation and menu planning, as well as stickers and puzzles designed to entertain and educate children about healthy eating.
- For adults, Nutrition Australia provides a range of healthy recipes, resources and fact sheets containing nutrition information for adults and seniors.

FIGURE 7.45 The 'try for 5' campaign is a key focus of National Nutrition Week.



CASE STUDY

Healthy Lunchbox Week is a Nutrition Australia initiative that aims to inspire parents and carers across Australia to create healthy lunchboxes their children will enjoy

With Australian families gearing up for another school year, Nutrition Australia is helping families to prepare their children's lunchboxes, through its second annual Healthy Lunchbox Week campaign (January 20–26, 2019).

A new Healthy Lunchbox Week website provides plenty of lunchbox recipe inspiration such as main meals, snacks, and leftovers, as well as fact sheets, guides, and videos.

'Whether you're a parent of school-age children or new to the school lunchbox world, we can all do with some help and inspiration to get us off to a good start at this time of year' says Nutrition Australia Accredited Practising Dietitian, Leanne Elliston.

'Busy parents can very easily get caught into the convenience trap, resorting to the plethora of highly processed, packaged foods, specially marketed for kids' lunchboxes' says Leanne, who is also a seasoned lunchbox packer for her two school-age children. 'We all love the convenience of those easy grab-and-go lunchbox items, but it comes at a cost, not only financially but also to our children's health and the environment. With a little planning and food preparation, you can save money while providing more nutritious options for your children, reduce environmental impact and limit the age-old playground litter problem all schools face.'



But forget feeling pressured to create Insta-worthy lunchbox creations every day. Simple options like the humble sandwich still burst with nutrients, minus the fuss.

‘Whole grain bread, rolls, or wraps are the perfect vehicle for other healthy ingredients, like salad or leftover roast veggies, lean meat, cheese, and dips like hummus,’ said Felicity Curtain, Nutrition Manager of the Grains & Legumes Nutrition Council.

And it’s not just what you pack, but what it’s packed in that matters. Leanne recommends looking for a versatile lunchbox that can fit a range of items — think different sized fruit, sandwich, roll or wrap options. ‘Also look for lunchboxes that can accommodate a frozen water bottle and will fit into an insulated bag to keep food cool and safe in the hot weather’.

Source: Nutrition Australia.

CASE STUDY REVIEW

1. Briefly explain the purpose of Healthy Lunchbox Week.
2. Explain how Healthy Lunchbox Week may promote the health and wellbeing of Australian children.
3. Discuss how the Healthy Lunchbox Week initiative reflects actions areas of the Ottawa Charter.

Nutrition seminars and workshops

Nutrition Australia dietitians and nutritionists conduct a range of seminars to provide education to workplaces and members of the public wanting to improve their diet. Examples of seminar topics include:

- Nutrition 101
- Healthy eating for corporate lifestyles
- Nutrition for shift workers
- Understanding food labels
- Healthy habits for a healthy heart.

Nutrition Australia dietitians and nutritionists provide healthy eating demonstrations in workplaces. Examples include one-hour demonstrations showcasing smoothies and salads (summer workshops), and soups and warm salads (winter workshops). The workshops are also tailored to meet the needs of the individual business.

Webinars for health professionals

Webinars are developed for health professionals to provide training and education to assist them in promoting healthy eating in the community. The webinars cover a range of topics, including:

- The Modern Mediterranean Diet
- Communicating the Australian Dietary Guidelines
- Unpacking the Health Star Rating
- Food and fitness — nutrition update for fitness professionals.

Publication of recipes

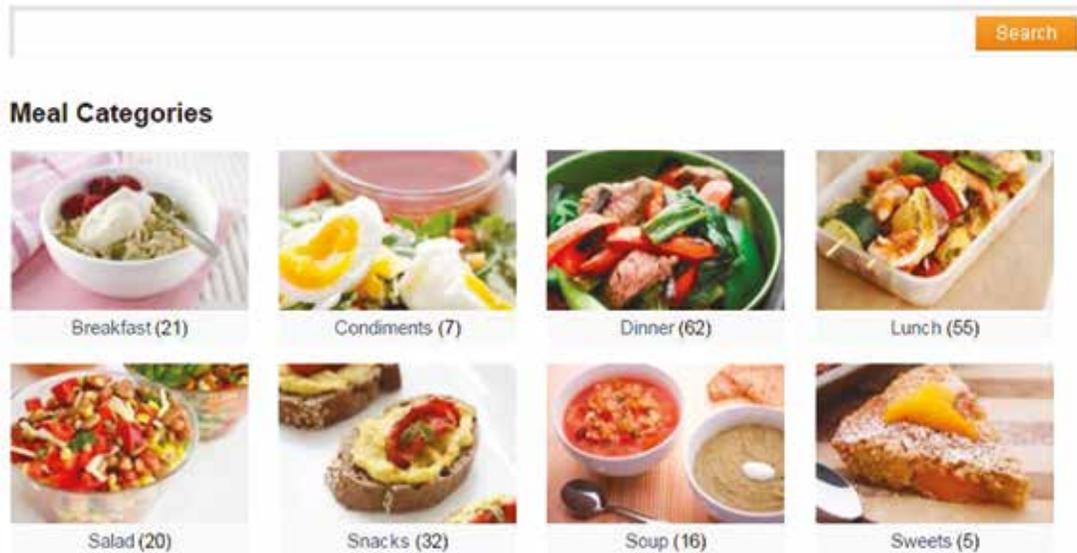
Hundreds of healthy recipes are provided free of charge on the Nutrition Australia website, and cookbooks reviewed by Nutrition Australia are available for purchase. Recipes are available for breakfast, snacks, lunch, dinner, sweets, salads and condiments (see **FIGURE 7.46**).

Healthy Eating Pyramid

The Healthy Eating Pyramid is a simple visual guide to the types and proportion of foods that individuals should eat every day for good health and wellbeing. Based on the Australian Dietary Guidelines, it contains the five core food groups, plus healthy fats, according to how much they contribute to a balanced diet.

The Healthy Eating Pyramid encourages Australians to enjoy a variety of foods from every food group, every day, by showing four layers with different food groups in each, representing the proportion in which each should be consumed.

FIGURE 7.46 A range of recipes are available free of charge on the Nutrition Australia website.



The first two layers of the Healthy Eating Pyramid are known as the ‘foundation layers’ and include the three plant-based food groups:

- vegetables and legumes
- fruits
- grains.

These layers make up the largest portion of the pyramid because plant foods should make up the largest portion of the diet — about 70 per cent of what a person eats. The first foundation layer contains vegetables and legumes, and fruits. Vegetables and legumes account for the majority of this layer with fruits making up a smaller portion, reflecting the fact that vegetables and legumes should be consumed in greater amounts than fruits. The second foundation layer contains the grains group, which is represented by whole grains (such as brown rice, oats and quinoa) and wholemeal/wholegrain varieties of bread, pasta, crisp breads and cereal foods, instead of highly processed, refined varieties such as white bread and pasta.

Foods in the foundation layers contain a wide variety of nutrients such as vitamins and minerals. They are also the main source of carbohydrates and fibre.

The third layer includes milk, yoghurt, cheese and alternatives, and the lean meat, poultry, fish, eggs, nuts, seeds and legumes food groups. Foods in the milk, yoghurt, cheese and alternatives group are a major source of calcium and protein, as well as other vitamins and minerals. This food group also refers to non-dairy options such as soy, rice or cereal milks that are fortified with calcium.

Foods in the lean meat, poultry, fish, eggs, nuts, seeds and legumes group are a major source of protein and can contain healthy fats. They are also sources of iron, which can prevent anaemia.

The top layer presents foods that contain monounsaturated and polyunsaturated fats, which individuals should consume in small amounts to support heart health and brain function. Choosing foods that contain these healthier fats instead of foods that contain saturated fats and trans fats can provide health and wellbeing benefits.

The pyramid recommends that consumers enjoy herbs and spices. Using herbs and spices to add flavour to food is preferable to adding salt, sugar and/or fat.

Water is shown at the bottom of the pyramid as it is the best drink for hydration and it supports many other essential functions in the body. Choosing water also reduces the number of sugary options consumed, such as soft drinks, sports drinks and energy drinks, which can add energy to the diet and contribute to weight gain.

FIGURE 7.47 The Healthy Eating Pyramid is a food selection model based on the Australian Dietary Guidelines.



The Healthy Eating Pyramid recommends limiting the intake of salt (which contains sodium) and added sugar. Although sodium is required for optimal functioning, too much can contribute to hypertension and cardiovascular disease.

Consuming a lot of added sugars, especially from foods such as lollies, chocolate, cakes, biscuits, desserts and soft drink, can add extra kilojoules to the diet. This can lead to weight gain and increase the risk of developing type 2 diabetes, cardiovascular disease and some cancers. The average Australian already consumes too much salt and added sugar, and this is linked to an increased risk of developing these diseases.

The Healthy Eating Pyramid provides consumers with a simple visual tool that promotes healthy food intake. However, serving sizes and provisions for composite foods (such as pizzas and casseroles) are not included, which may make the model difficult to follow.

EXAM TIP

The Healthy Eating Pyramid and Australian Guide to Healthy Eating are both food selection models based on the Australian Dietary Guidelines. As a result, they have a number of similarities, including representing the five food groups in their correct proportions and encouraging the consumption of water. When describing one of these models, it is therefore important to provide specific details to ensure you are accurately describing the model in question. For example, the pyramid shows the food groups in four layers. The guide shows the food groups in a pie chart.

7.7 Activities

1. Access the **Nutrition Australia** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **Global Kitchen cookbook** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital documents** Nutrition Australia worksheet (doc-32214)
Global Kitchen cookbook worksheet (doc-32215)
-  **Weblinks** Nutrition Australia
Global Kitchen cookbook

7.7 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

7.7 Quick quiz

on

7.7 Exercise

7.7 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 5

■ LEVEL 2

4, 6, 7

■ LEVEL 3

8, 9, 10

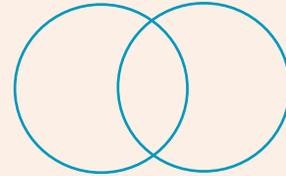
Test your knowledge

1. Briefly explain the role of Nutrition Australia.
2. Outline three ways in which Nutrition Australia promotes healthy eating.

3. a. What is the Healthy Eating Pyramid?
b. Explain how the Healthy Eating Pyramid promotes healthy eating.
4. Which food groups are represented in the Healthy Eating Pyramid?
5. Explain why using herbs and spices to flavour food is preferable.

Apply your knowledge

6. Explain how Nutrition Australia promotes healthy eating among:
 - a. children
 - b. adults.
7. Copy and complete the following Venn diagram, outlining the similarities and differences between the Australian Dietary Guidelines and the Healthy Eating Pyramid.
8. Select two ways that Nutrition Australia promotes healthy eating and identify how these two health promotions reflect the action areas of the Ottawa Charter.
9. Record everything you have eaten in the past 24 hours and then draw a pyramid with four layers. For each food item you consumed, put a stroke in the appropriate layer of the pyramid.
 - a. Was your diet in the past 24 hours consistent with the proportions suggested by the Healthy Eating Pyramid?
 - b. Did you have any difficulties completing this activity? Why or why not?
 - c. Suggest two ways in which the Healthy Eating Pyramid could be changed to be more user-friendly.
10. What are the advantages and disadvantages of the Healthy Eating Pyramid?



7.7 Quick quiz



7.7 Exercise

7.7 Exam questions

Question 1 (2 marks)

Source: VCE 2019, *Health and Human Development Exam*, Q.4; © VCAA

As part of National Nutrition Week, Nutrition Australia launched the annual Tryfor5 campaign, which is designed to encourage Australians to increase their vegetable consumption to the recommended five serves per day.

In addition to National Nutrition Week, **outline one** other way in which Nutrition Australia promotes healthy eating.

Question 2 (2 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.6.d; © VCAA

Nutrition Australia is a non-government organisation that promotes healthy eating. **Explain** how Nutrition Australia promotes the consumption of fruit and vegetables.

Question 3 (4 marks)

Source: VCE 2016, *Health and Human Development Exam*, Q.4; © VCAA

The federal government developed the Australian Dietary Guidelines. Nutrition Australia has used these guidelines as the basis for the development of the Healthy Eating Pyramid.

Choose two of the Australian Dietary Guidelines and **explain** how each is reflected in the Healthy Eating Pyramid.

Question 4 (3 marks)

Source: VCE 2014, *Health and Human Development Exam*, Q.7 (adapted); © VCAA

Give one example of how dietary advice is provided by Nutrition Australia. **Describe** how this example may help reduce the levels of obesity in Australia.

Question 5 (2 marks)

Source: VCE 2013, *Health and Human Development*, Section B, Q.1.d; © VCAA

Non-government organisations, such as Nutrition Australia, also provide dietary advice to promote healthy eating.

Describe one example of how Nutrition Australia achieves this.

More exam questions are available in your learnON title.

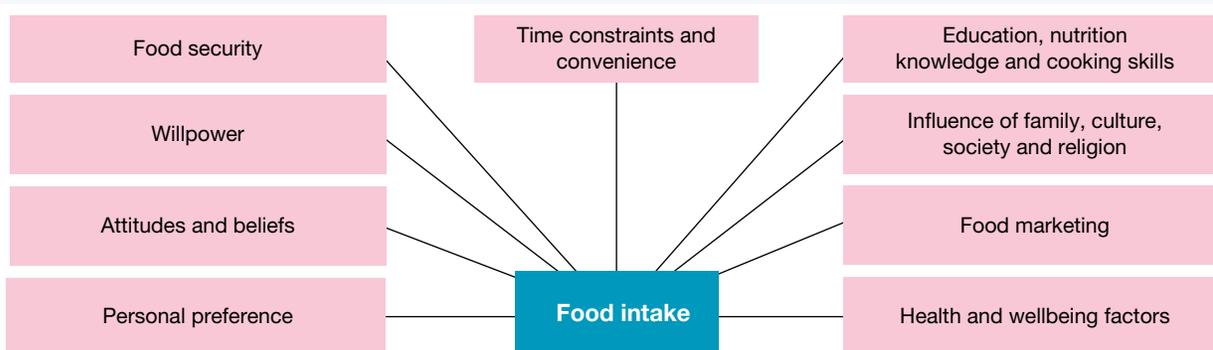
7.8 The challenges in bringing about dietary change

KEY CONCEPT Exploring the challenges in bringing about dietary change in Australia

Food intake in Australia has changed significantly in recent decades with a significant shift away from nutrient-dense, whole foods to energy-dense, processed foods. This change has contributed to the increasing rates of obesity and associated diet-related diseases in Australia over time.

Although there are a range of health promotion activities designed to address food intake in Australia, bringing about dietary change can be difficult to achieve. The foods people consume are a result of a complex set of factors that provide a range of challenges in improving dietary behaviour (see **FIGURE 7.48**).

FIGURE 7.48 Food intake is the product of a range of factors.



7.8.1 Personal preference

Most people prefer certain foods to others. This may be the result of factors such as taste preferences and past experiences. Foods high in fat, salt and sugar are known as flavour enhancers because they stimulate the taste buds and the brain's reward system by releasing dopamine, one of the body's feel-good chemicals. This cycle can create cravings for foods containing these substances, making dietary change challenging for some.

Taste preferences are often established over a long period of time, and can therefore be difficult to change.

7.8.2 Attitudes and beliefs

If an individual has not tried a variety of healthier food options, they may believe that they are bland or tasteless. Many people also feel that the negative effects of consuming unhealthy foods will not happen to them, both of which can reduce the likelihood of these individuals trying new, healthier foods.

Many people also consume foods based on philosophical beliefs, such as vegetarianism or only consuming organic or Australian-made products. Although consuming these products can be beneficial, a range of other factors influence the specific foods these people consume so their overall intake may not be considered healthy. Most health promotion interventions relating to healthy eating encourage consuming a balanced diet. Restricting certain food items can mean that achieving a balanced food intake and consuming adequate amounts of all nutrients may be more difficult.

FIGURE 7.49 Substances such as sugar trigger the brain's reward system and produce feelings of wellbeing.



The Australian Health Survey (2011–12) indicated that just over 2.3 million Australians aged 15 years and over reported being on a diet to lose weight or for some other reason relating to health and wellbeing. Although following a diet can promote health and wellbeing, some diets, such as the sugar-free and **Paleo diets**, restrict the consumption of certain food groups. People on such diets may find it difficult to follow nutritional advice because certain food groups are restricted.

7.8.3 Willpower

Related to self-control, willpower is defined by the American Psychological Association as ‘the ability to resist short-term temptations in order to meet long-term goals’. Changing food intake often requires a commitment from the individual, and many people will discard certain foods from their home when attempting to alter their dietary patterns to assist in reducing temptation. In modern society, however, there are many other situations when foods considered to be unhealthy are offered, such as at parties and other social gatherings, work functions, restaurants, school canteens and food stalls. Choosing healthy foods in these situations can be challenging. Although consuming such foods in small amounts or only sometimes can be part of a balanced diet, exposure to these foods on a regular basis can provide a challenge to achieving lasting dietary change.

Paleo diet a diet characterised by consuming foods available to humans during the Paleolithic period (from around 2.5 million to 12000 years ago). The Paleo diet restricts the consumption of dairy, refined grains such as bread and pasta, and refined sugar such as chocolate and soft drink. The main components of the Paleo diet are meat, fish, nuts, vegetables and seeds.

FIGURE 7.50 Making lasting changes to food intake can take considerable willpower.



7.8.4 Food security

The United Nation's Food and Agricultural Organization (FAO) states that food security exists 'when all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs for an active and healthy life' (FAO, 1996). This includes having enough money to afford nutritious foods and the means to access them, including geographical access and transport.

Although it is not clear if consuming healthy foods is more expensive than unhealthy foods, those who spend more on food generally have a healthier diet (Australian Prevention Partnership Centre, 2016). Those with higher incomes often have more choice in relation to the foods they consume and, although they spend more per person on food, they spend a smaller proportion of their income on food than lower income earners. Although most whole, healthy foods do not attract GST in Australia, the cost of healthy food has increased more rapidly than that of unhealthy foods. Due to financial constraints, those on lower incomes are more likely to experience food insecurity than higher income earners, and this can reduce their ability to follow nutritious dietary advice.

Those living outside Australia's major cities also experience higher rates of food insecurity. According to the AIHW (2012), the cost of basic nutritious foods is about 30 per cent higher in rural and remote areas than in urban and metropolitan areas. The availability of quality fresh fruit and vegetables and better food choices decreases in remote communities while the cost increases. Those without adequate transport may find it particularly difficult to change their dietary behaviours due to decreased access to a range of foods.

7.8.5 Time constraints and convenience

Meals are often planned with consideration of the time available and the convenience of the foods to be consumed. For many families where both parents are employed, more time is spent working and less time is spent preparing food. As a result, convenience foods are often consumed in the home because there is a lack of time to purchase fresh ingredients and prepare a meal from scratch. For employed people, meals consumed outside the home are also more likely to be influenced by the foods they can access in the time they have. Certain occupations, such as truck drivers and those working in the trades, may rely on the foods that are offered from outlets near their place of employment. Accessing fast food may be more convenient for these people but it can reduce their ability to consume a healthy diet.

Suburbs where socioeconomic disadvantage is greater are often the suburbs with the highest number of fast-food outlets. Fast-food is generally higher in fat, salt and sugar than other options (see the following case study on fast-food outlets). Living in close proximity to such venues may increase the likelihood of people consuming these foods and influence the ability of people in these suburbs to change their dietary intake.

FIGURE 7.51 For employed people, meals consumed outside the home are more likely to be influenced by the foods they can access in the time they have.



CASE STUDY

Why a fat tax is not enough to tackle the obesity problem

We often hear calls for a junk food tax or 'fat tax' when there's discussion of Australia's growing obesity problem. The idea behind such a tax is that it would enable governments to subsidise healthy foods so that they're more affordable, and make unhealthy foods comparatively expensive so people buy less of them.

But would they really? Is cost really the most powerful determinant of what food products people buy?

Let's consider the likely effects of a junk food tax. Researchers claim that a 20 per cent tax on a can of soft drink would be a sufficient deterrent to purchasing it.

It's easy to visualise this: someone approaches the refrigerator in a convenience store wanting to buy a drink and ready to make a decision based on taste and cost. If a soft drink is more expensive than low-fat milk or water, it becomes less attractive and we could see a change in buying behaviour — and the attendant reduction in the consumption of obesity promoting products.

But the junk food tax idea falls over in other situations where food choices are made — when factors other than price come into play. Family dinner options, for instance, are rarely arrayed together in one location for a simple price comparison.

In lower income areas, where obesity is disproportionately more common, main roads are lined with takeaway food outlets and the only greengrocer may not have a car park (let alone a drive-through service). Part of the attraction of takeaway food is that it provides instant satisfaction while demanding little in the way of (cooking) skills or (nutritional) knowledge.

Dinner options that require food preparation may be out of the question for people living in housing with inadequate cooking and food storage facilities. So, although I can prepare a vegetable and lentil curry with brown rice, followed by apple crumble with real egg custard, for a total of \$3.39 per person, in disadvantaged communities this might not compare favourably with the 'Five-dollar Meal Deals' offered by various takeaway chains, even if the meals were taxed until they became 'Ten-dollar Meal Deals.'

And regardless of the price, it may be hard to sell my healthy \$3.39 meal to someone accustomed to takeaway's addictively sweet and salty and fatty flavours, low in vegetables and high in melt-in-the-mouth starches.

FIGURE 7.52 Most meal options are not arrayed together for a simple price comparison.



FIGURE 7.53 Unlike fast-food outlets, a greengrocer may not have a car park or a drive-through service.



When people claim that healthy food is expensive, they are sometimes simply observing that processed foods labelled 'diet' are priced higher, or that high-energy junk foods supply more (unnecessary) calories per dollar than vegetables do. Both claims are true, but trivial.

But sometimes they are actually pointing out, correctly, that the real cost of my meal is more than \$3.39 — that, unlike the takeaway alternative, this home-cooked dinner cost nearly an hour of my time. An hour that I might not be inclined to spare if I were tired and footsore from a hard low-income job and trying to feed fractious children as soon as possible.

And that my home-cooked meal required a number of different skills and resources I might take for granted, such as cooking ability and a functional kitchen. And that it would cost more than \$50 if I had to fund the startup cost of all the ingredients — the kilogram of flour and the bottle of oil, and so on — instead of just using (and costing) smaller amounts of items I already had.

My \$3.39 meal is very nutritious. Unlike the takeaway meal, it provides the full spectrum of essential vitamins and minerals, as well as beneficial fibre and health-protective plant substances, at around 2800 kJ per serve. Five-dollar meal deals, on the other hand, typically overfeed, with one meal providing 4300 kJ or more (over half of a day's requirement), as well as less protein and more fat than my version.

Better food labelling might help consumers realise this. But labelling also works best when your options are equally convenient and equally available, sitting side by side for comparison on the supermarket shelf or a food outlet's menu. When this is not the case, labelling loses much of its power to influence food choices. Just as price manipulation strategies, such as a 'fat tax', do.

Efforts to combat obesity need to look beyond simple pricing strategies, to the underlying knowledge and skills that influence food choices. Just as physical activity is now compulsory at school, basic cooking (real basics, not just biscuits and pizza) should be an integral part of the personal development and life skills curriculum for all kids.

And rather than merely requiring a sink and food preparation area as they do now, building codes need to be updated so that adequate cooking facilities are mandatory in all dwellings. Communal kitchens are another suggestion worth considering.

An emphasis on improving skills means that rather than just punishing poor food choices, we equip people to make better ones — every day at home, not just in the convenience store.

Source: 'Why a fat tax is not enough to tackle the obesity problem', Suzie Ferrie, *The Conversation online*, 2 July 2016, <http://theconversation.com/why-a-fat-tax-is-not-enough-to-tackle-the-obesity-problem-6443>

CASE STUDY REVIEW

- What is the idea behind a 'fat tax'?
 - Explain how this may assist in addressing obesity among low socioeconomic groups.
- What is 'part of the attraction of takeaway food'?
- Outline the factors that contribute to poorer food intake in low socioeconomic areas identified in the article.
- Outline the changes required to promote healthy eating among low socioeconomic groups identified in the article.

7.8.6 Education, nutrition knowledge and cooking skills

According to the AIHW (2012), lack of nutritional knowledge and cooking skills often predisposes people to consume unhealthy meals. Lack of education can also lead to consumers believing that they are consuming healthy foods as they do not have the skills to accurately assess their current food intake. Difficulty in reading food labels and lack of understanding of portion sizes are also common in Australia, providing further challenges to changing dietary patterns.

Lower levels of education, nutritional knowledge and cooking skills can mean that even people who want to change their dietary choices may lack the resources to do so. As a result, they may continue consuming foods that are familiar to them, and this can decrease their capacity to improve their food intake.

FIGURE 7.54 Developing cooking skills can increase healthy menu options and so improve food intake.



7.8.7 Family, culture, society and religion

Food is an important part of human existence and the earliest food experiences most people have is shaped by family. The cultural and religious background of the family may include ties to traditional foods that have been consumed through generations. Family influences also play a significant role in shaping the personal preferences that people have in relation to food. Childhood in particular is seen as a stage when many personal preferences in relation to food are established. Familiarity with specific foods can make it difficult to change to other, non-familiar food items.

Food is often consumed in social settings, either in private homes or at commercial food outlets. The people with whom an individual consumes food can influence the foods they consume. This is particularly relevant to children and young people, who gain more independence as they develop. They may choose foods that their friends eat and this can reduce their ability to choose healthier foods, regardless of their nutritional knowledge.

FIGURE 7.55 Social networks influence food intake for many.

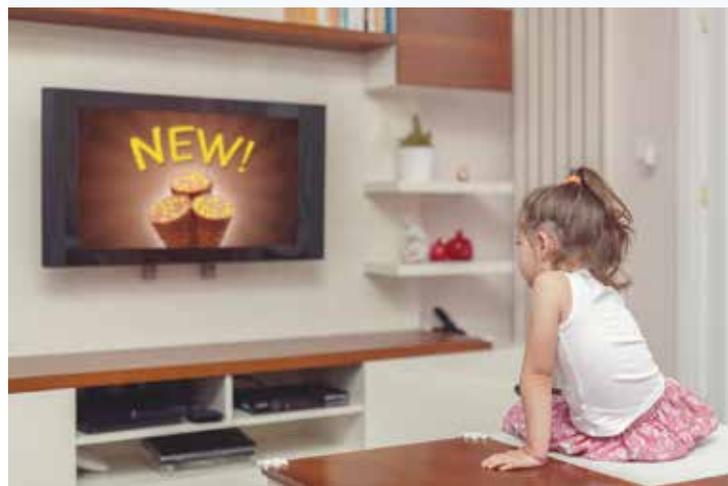


7.8.8 Food marketing and media

The food industry actively markets its goods to consumers in a variety of ways including: advertisements in newspapers and magazines, and on television, radio and the internet; supermarket and point-of-sale promotions; sponsorships; websites; the use of celebrities, including celebrity chefs; product placement on cooking programs; emails and text messages. The information provided through marketing and media can create conflicting messages for individuals, potentially affecting their ability to choose healthy foods.

Television advertising is the most common form of food advertising in Australia, and children are the focus of many of these advertisements. According to the AIHW (2012), 'television advertising influences children's food preferences, purchase requests and consumption patterns (National Preventative Health Taskforce, 2009). Food advertising to children is increasing worldwide and most is for foods with a high content of fat, sugar or salt (WHO, 2010). Australian children's exposure to television food advertising is among the highest in the world. High-fat/high-sugar food advertisements on Australian television are more frequent during children's compared with adults' viewing hours, and during popular children's programs'.

FIGURE 7.56 Advertising foods on television can be particularly influential for children.



The messages provided through food marketing can cause confusion for many, especially children, if they are unable to distinguish between advertising and the presentation of factual information. Children can be a significant influence on items purchased while shopping (sometimes referred to as ‘pester power’). This can impact on the ability of all family members to consume a healthy diet.

Food marketing and the media influence food trends in Australia. Reality cooking shows, for example, have contributed to an increased interest in food, particularly among young people. While these trends can promote healthy eating, the dominance of fast-food outlets in marketing often counteracts any positive effects.

CASE STUDY

How we get sucked in by junk food specials in supermarkets

Three in five Australian adults get sucked in by promotions and specials on junk food and sugary drinks at the supermarket, research released today shows.

The research for LiveLighter — a health education campaign delivered by the Cancer Council and Heart Foundation — found 53 per cent of shoppers visit the supermarket several times a week or every day.

This presents many occasions during which shoppers are influenced to purchase unhealthy foods through the layout of the store, product placement and advertising.

From healthy intentions

Most people aspire to eat a healthy diet. Two-thirds of the 2000 Australians surveyed regularly plan their meals in advance. Around half compare supermarket products to see which is healthier.

But three in five respondents said they were likely to purchase junk foods — lollies, chocolate, chips, biscuits, ice cream and soft drinks — when they were on sale or promotion. It’s hardly surprising, given how cheap and conveniently junk foods are located; not just in our shops, but also at transport hubs, workplaces and local neighbourhoods.

In an attempt to trigger impulse purchases in supermarkets, processed snack foods are available at the end-of-aisle and in-island bin displays, as well as at the checkout. Sometimes they are on special, or feature large promotional packages, multipacks or two-for-one offers, appealing to price-sensitive shoppers.

Shoppers may place value on the convenience, taste or brand of a highly processed ‘snack’ food. Discounted fruit or vegetables don’t have the same persuasive power to increase purchases, nor do these products have the same profit margins. Supermarket catalogues and websites promote weekly specials which include some fresh produce but are dominated by unhealthy food promotions.

Around 35 per cent of Australians’ daily energy intake now comes from unhealthy food. As a result, around 63 per cent of Australians adults and 27 per cent of children are overweight or obese.

What needs to be done?

Supermarkets have a role to play in helping make the healthy choice the easy choice for Australian families.

Some supermarkets have introduced initiatives like confectionery-free checkouts and offering free fresh fruit to children in store. We’d like to see more of this.

We’d also like to see healthy food and drinks feature more heavily in their end-of-aisle promotions, catalogues and advertising.

When it comes to obesity more broadly, comprehensive action is well overdue. There is growing international consensus about the types of measures that are most likely to have the biggest impact on the promotion of healthy eating. These include:

- Restricting the advertising and promotion of discretionary junk foods and drinks to children and young people. Current self-regulation is seriously inadequate and should be addressed with more robust regulation.
- Introducing a sugary drinks tax to increase the price of these products and reduce consumption. The funds raised could be used for obesity-prevention initiatives.

- Taking action to make the Health Star Rating System mandatory and refining the system to ensure it reflects dietary guidelines.
- Limiting the promotion and availability of unhealthy foods and drinks in settings such as hospitals and public places, with particular attention to places that are frequented by children and young people.
- Supporting the reformulation of processed foods to reduce key nutrients of concern to health, with clear targets and timelines to achieve these.
- Sustaining and increasing funding for evidence-based public education campaigns. Evaluation shows they can increase knowledge and understanding and shape attitudes, leading to intention to change behaviour.

As a society, we are all responsible for ensuring that there are measures in place to protect the health of our children and our nation.

Source: 'How we get sucked in by junk food specials in supermarkets', Jane Martin and Trevor Shilton, *The Conversation online*, 11 October 2016, <http://theconversation.com/how-we-get-sucked-in-by-junk-food-specials-in-supermarkets-66392>

CASE STUDY REVIEW

1. a. What proportion of Australian adults get 'sucked in' by promotions and specials on junk food and sugary drinks?
b. Explain how this could impact health status in Australia.
2. Outline the techniques used to promote unhealthy food items.
3. Discuss the role supermarkets can play in promoting healthy eating.
4. Outline the measures that can have the biggest impact on promoting healthy eating.

7.8.9 Health and wellbeing factors

The health and wellbeing experienced by individuals can also influence the foods they consume. In the Australian Health Survey (2011–12), 3.7 million people reported avoiding a food due to allergy or intolerance. The most common type of food reported to cause intolerance was cow's milk followed by gluten. Omitting these foods may contribute to difficulty in following health promotion initiatives, such as the Healthy Eating Pyramid and the Australian Dietary Guidelines, especially if the individual lacks the knowledge of substitutes that provide the nutrients they may be lacking.

As explored earlier, certain foods trigger the release of dopamine, a brain chemical that can enhance mood. Some people experiencing emotional and mental distress may subconsciously use this mechanism in an attempt to make themselves feel better. If they have a bad day or feel down, they may use food as a coping mechanism. Until this relationship with food is addressed, such behaviour can impact on the ability of individuals to make changes to their dietary patterns.

7.8 Activity

Access the **Food insecurity** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

- | | | |
|---|-------------------------|---------------------------------------|
|  | Digital document | Food insecurity worksheet (doc-32211) |
|  | Weblink | Food insecurity |

7.8 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

7.8 Quick quiz



7.8 Exercise

7.8 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 4

■ LEVEL 2

3, 5, 6, 8, 9, 10

■ LEVEL 3

7, 11

Test your knowledge

1. Identify five factors that present challenges in bringing about dietary change.
2. Discuss why salt, fat and sugar can be particularly influential on food preferences.
3.
 - a. Explain what is meant by 'food security'.
 - b. Explain why food insecurity is a challenge in bringing about dietary change.
 - c. Identify two population groups and explain why they are more likely to experience food insecurity.
4. Outline why children are often the target of food advertising.
5. Explain how personal preferences present a challenge to dietary change.

Apply your knowledge

6. Using three factors that influence food intake as the basis of your response, explain why simply telling people about healthier foods does not necessarily bring about dietary change.
7. Explain why people in low socioeconomic groups may find it particularly difficult to make dietary changes.
8. Identify a food pattern that is typical for your family and discuss how it promotes healthy eating.
9. Describe how being time-poor may impact on the ability to meet the Australian Dietary Guidelines.
10. Identify three challenges you face that may impact on your ability to make dietary change. Suggest ways you may be able overcome these challenges
11. Outline the challenges each of the following people may face in making dietary changes:
 - a. Oliver is a five-year-old boy who lives with his mother and father. His father does all of the cooking for the family. His parents are vegetarian so Oliver does not consume meat at home.
 - b. Vi is 79 and lives alone. She is of Vietnamese background, and was taught to cook traditional Vietnamese meals from her grandmother when she was a child. Vi doesn't drive, instead walking to the local supermarket to purchase food.
 - c. Michael is 43 and lives in a remote area of South Australia. He is a truck driver and spends a lot of time on the road.

7.8 Quick quiz



7.8 Exercise

7.8 Exam questions

Question 1 (4 marks)

According to the Australian Health Survey, 'less than 4 per cent of the population consumed enough vegetables each day'. **Identify** two challenges of dietary change and discuss how they may have contributed to less than 4 per cent of the population consuming enough vegetables and legumes each day.

Question 2 (2 marks)

According to the Australian Health Survey, over one-third of the population's total daily energy intake came from energy-dense, nutrient-poor 'discretionary foods' (such as sweetened beverages, alcohol, cakes, confectionary and pastry products). **Describe** how food marketing, a challenge to dietary change, may have contributed to the above finding.

Question 3 (4 marks)

Identify and briefly **describe** two challenges for dietary change.

Question 4 (1 mark)

Preferring to eat white bread rather than wholegrain bread is an example of which challenge of dietary change?

More exam questions are available in your learnON title.

7.9 KEY SKILLS

7.9.1 Apply the action areas of the Ottawa Charter for Health Promotion to a range of data and case studies



tlvd-1918

KEY SKILL Apply the action areas of the Ottawa Charter for Health Promotion to a range of data and case studies

Tell me

The first step in being able to complete this key skill is to have a thorough knowledge of the action areas of the Ottawa Charter. This goes beyond knowing the name of each, although that is also important. Ensure you have an understanding of what each action area relates to. Sometimes aspects of a project will incorporate more than one action area, but generally not all areas will be addressed in one program.

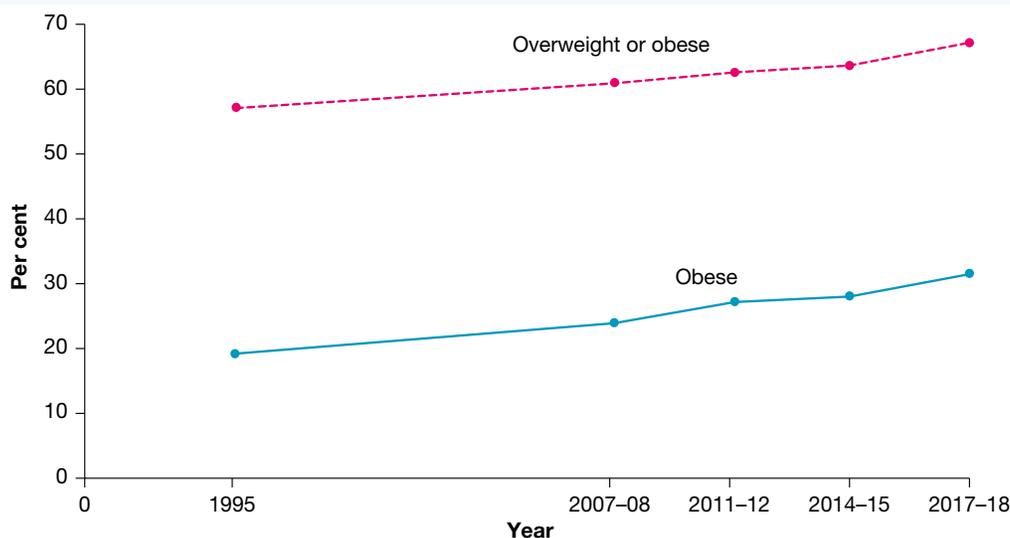
In applying the action areas, you may be required to identify how they are evident in data or a case study. You may have to also explain *how* the action area of the Ottawa Charter is represented in the stimulus material provided. Make sure you make specific links between the action area and the example from the case study or data.

In other cases, you may need to use the action areas of the Ottawa Charter to explain how improvements in health and wellbeing can be achieved. It is important to be specific here. If explaining how developing personal skills can promote the health of Aboriginal and Torres Strait Islander peoples, simply stating that ‘by being more educated, Aboriginal and Torres Strait Islander people will be better equipped to quit smoking and therefore their health and wellbeing will improve’, does not explain *how* the action area may be used to improve health and wellbeing. A better answer would be that ‘telephone counselling could be provided to Aboriginal and Torres Strait Islander people in a culturally appropriate manner that can provide education relating to quitting smoking. This can reduce smoking rates, which can decrease the risk of respiratory conditions among this group’.

The action areas of the Ottawa Charter should be applicable to major health concerns in Australia such as dietary intake and obesity, and the issues facing population groups such as Aboriginal and Torres Strait Islander peoples, males, low socioeconomic groups and those living outside Australia’s major cities. As a result, the health concerns and issues facing these population groups should also be understood.

Show me

FIGURE 7.57 Trends in overweight and obesity in Australia over time for those aged 18 and over



Notes: 1. Age-standardised to the 2001 Australian population. 2. Overweight and obesity classification based on measured height and weight in all surveys.

Source: AIHW 2012, ABS 2013.

In the following example, the data relating to obesity are analysed and three action areas of the Ottawa Charter are applied in relation to how they could be used to reverse the trend in obesity:

Rates of obesity have increased in Australia for those aged 18 and over from around 20 per cent of the population in 1995 to around, 27 per cent in 2011–12 to around 30 per cent in 2017–18.¹

The action areas of the Ottawa Charter could assist in promoting health and wellbeing and reversing this trend by:

- Build healthy public policy² — a junk food tax could be introduced by the federal or state/territory governments to increase the price³ and reduce the intake of these items, which could assist in reducing energy consumption and the rate of obesity.⁴
- Develop personal skills — traffic light labelling systems could be introduced in food outlets such as school canteens to assist in providing advice to consumers as to which foods should be eaten regularly, in moderation and occasionally. This can reduce the amount of energy-dense food being consumed, which can assist in reversing the trend relating to obesity.⁵
- Reorient health services — health professionals such as doctors could be encouraged to prescribe exercise for those who are obese or at risk of becoming obese.⁶

1 The data are analysed.

2 An action area of the Ottawa Charter is correctly identified.

3 A practical application of the action area is outlined.

4 A specific link to obesity is made.

5 A second action area is identified and applied to the scenario of reversing the trend in rates of obesity.

6 A third action area is identified and applied to the scenario of reversing the trend in rates of obesity.

Practise the key skill

Read the following case study and answer the questions that follow.

Good Sports

As part of its strategy to promote health and wellbeing, VicHealth provides funding to the Good Sports program (goodsports.com.au) — an initiative of the Australian Drug Foundation.

The program helps sporting clubs manage alcohol responsibly and reduce alcohol-related issues such as binge drinking and drink driving.

By fulfilling Good Sports accreditation criteria, clubs benefit from a range of support services and earn the right to display the Good Sports logo. The logo confirms that the club promotes responsible attitudes towards alcohol and provides a safe, healthy and family-friendly environment for players, members and supporters.



The three-level accreditation process is based around alcohol management standards for clubs that serve and consume alcohol. One of the key benefits of registering in the program is the support clubs receive to promote a family-friendly, safe and healthy culture.

At Level 1, clubs focus on liquor licensing laws, bar management, Responsible Service of Alcohol (RSA) training and creating smoke-free environments. Once they have progressed to Level 3, they have an alcohol management policy, healthy food and drink options (with low and non-alcoholic drinks), a safe transport policy and less reliance on alcohol sales and sponsorships for revenue. In addition, all bar servers are RSA-qualified. Good Sports also offers an accreditation for clubs where alcohol is not served or consumed.

Good Sports has been adopted by a diverse range of community clubs spanning more than 80 codes of sport. Almost 10 000 clubs are involved across all Australian states and territories.

There is evidence that community-based sports clubs contribute to alcohol problems by accepting and promoting excessive drinking and providing inappropriate role models for young people.

According to independent research, Good Sports has been proven to reduce risky drinking in clubs participating in the program.

Tyntynder Football Netball Club

Tyntynder Football Netball Club had fallen into the same trap as a lot of clubs in relying too heavily on alcohol for revenue, and so creating a 'boozy' atmosphere.

The committee decided to turn to Good Sports to help them become more family and community-focused, valuing off-field success as highly as on-field performances.

Through the program, the club trained members in RSA, created a healthier canteen and implemented the 'Tyntynder Taxi' to ensure everyone gets home safely.

Previously relying heavily on bar sales to function, the club now enjoys more revenue from memberships and family-friendly social events.

The club is also extremely proactive when it comes to social issues and regularly promotes new causes, training and education for members.

In recognition of its efforts, the club has previously won the Victorian Good Sports Club of the Year and AFL Victoria Club of Excellence.



1. Identify three action areas of the Ottawa Charter and explain how they are reflected in the Good Sports program.
2. Select an action area not used in question 1 and explain how it could promote wellbeing in relation to alcohol consumption.

7.9.2 Evaluate initiatives in terms of their capacity to improve Indigenous health and wellbeing



tivd-1919

KEY SKILL Evaluate initiatives in terms of their capacity to improve Indigenous health and wellbeing

Tell me

For this key skill, judgements must be made about the capacity of initiatives to improve Indigenous health and wellbeing.

In order to make judgements, an understanding of the issues facing Aboriginal and Torres Strait Islander peoples is essential. Once the issues are known, relevant initiatives can be judged relating to their actual or perceived effectiveness in bringing about improvements in Indigenous health and wellbeing. Reasons why a program is judged to be effective or ineffective should be included and can be based on:

- actual improvements in health and wellbeing that have been made as a result of the initiative
- the number of people who have accessed or been involved in the initiative
- feedback provided by participants
- action areas of the Ottawa Charter that are evident in the initiative, including:
 - the provision of education
 - the involvement of various stakeholders and other concerned groups in the planning and implementation of the initiative.
- whether the program is culturally appropriate for Aboriginal and Torres Strait Islander peoples, including the consultation, use and training of Aboriginal and Torres Strait Islander personnel in planning and delivering the program
- whether the program has taken the specific needs of the target group into account, including the specific needs relating to the health and wellbeing of Aboriginal and Torres Strait Islander peoples
- funding that has been provided to implement the program
- whether the program addresses a significant health issue for Aboriginal and Torres Strait Islander peoples and why it is important to address this issue.

In many cases, using one of these considerations will not be enough to justify a judgement. As a result, a range of considerations should be used to add depth to the response.

Show me

In the following example, the Aboriginal Driving Stories program is described and then evaluated.

This project involved the development of a road safety booklet, which included short stories for children up to the age of 12 years. The booklet covered a number of road safety issues including:

- the wearing of seatbelts
- driving without a licence
- overloading in cars
- drink-driving and drink-walking
- driving
- speeding.

It aimed to increase awareness and educate young people about road safety, information that they could then pass on to the Elders in the community in an attempt to change the cultural attitudes towards road safety. The resource was developed in close consultation with the community to give it more credibility and cultural significance.

This program addresses a significant need among Indigenous Australians who experience significantly higher rates of road trauma compared to other Australians.⁷ The program worked to develop personal skills among young Aboriginal people that can then be passed on to Elders. These skills can be passed from generation to generation in the future and decrease the risk of injuries among Indigenous Australians, promoting physical health and wellbeing.⁸ Aboriginal and Torres Strait Islander people were included in the development of the program. This enhances its cultural appropriateness, and this may increase the participation rate among Indigenous Australians and the chance of promoting their health and wellbeing.⁹

⁷ This program is linked to a significant need among the Indigenous population, which is specified in the response.

⁸ The fact that education was included in the program is identified and then linked to improved health and wellbeing outcomes.

⁹ The involvement of Aboriginal and Torres Strait Islander people in the development of the program is specified and linked to cultural appropriateness and increased participation among the target audience.

Practise the key skill

Read the following case study and answer the questions that follow.

Specky dreaming footy frenzy program

The *Specky dreaming footy frenzy program* aims to improve fitness, coordination, balance and timing for children of all ages. The program aims to give all children, boys and girls, the enthusiasm, and skills to have an ongoing active and healthy lifestyle. The program promotes the idea that all children should be encouraged to have a go at sports so all children are encouraged.

The program is delivered in Aboriginal communities throughout Australia and can be adapted to reflect the needs of the community.

Through participation in the program, children learn:

- to identify and develop their natural talents
- skills to pursue and achieve personal goals and improve self-esteem
- how to make decisions and take actions based on personal values and principles that reflect empathy and integrity
- about healthy eating and living



- the importance of attending school
- how to use appropriate language that is sensitive to the audience and culture.

Specky Dreaming delivers the program in a culturally safe manner and is sensitive to community needs.

Source: Australian Indigenous HealthInfoNet.

3. Evaluate the Specky Dreaming program in terms of its capacity to improve Indigenous health and wellbeing.
4. Identify two action areas of the Ottawa Charter and explain how each is reflected in the Specky Dreaming program.

7.9.3 Draw conclusions as to why dietary improvements are difficult to achieve in Australia



tlvd-1920

KEY SKILL Draw conclusions as to why dietary improvements are difficult to achieve in Australia

Tell me

To complete this skill, conclusions must be drawn as to why dietary improvements are difficult to achieve in Australia. In order to draw conclusions, a range of factors that contribute to food intake must be understood.

When presented with stimulus material such as case studies or data, ensure that any references to factors that may present challenges to changing dietary behaviour are considered when the conclusions are drawn.

It is important to remember that challenges to dietary improvements in Australia are generally due to the combined impact of a range of factors. For example, a person who lacks cooking skills may be able to make dietary changes if they can afford a healthy cooked-meal delivery service. But if income is also low, these factors together may reduce the ability of the individual to make healthy changes to their food intake. In this sense, a single factor is less likely to impact dietary change in isolation of the other factors.

Relevant factors relate to:

- personal preference
- attitudes and beliefs
- willpower
- food security
- time constraints and convenience
- education, nutrition knowledge and cooking skills
- family, culture, society and religion
- food marketing
- health and wellbeing.

Show me

In the following example, conclusions are drawn relating to the ability of Clive to change his food intake.

Clive is 82¹⁰ and has been married to Margot for over 50 years. Margot had done all the cooking in their home but recently had a stroke and now lives in long-term residential care. Clive visits Margot every day and has lunch with her in the aged-care facility.¹¹

¹⁰ Clive is 82 years old, so may have established eating patterns and preferences, which can be difficult to alter.

¹¹ Clive consumes a number of meals with his wife in the aged-care facility, which will influence the foods he can access during these times. Clive will probably choose foods that he likes and is familiar with, and this may impact his ability to change his food intake.

He uses Meals on Wheels¹² (a local government initiative where meals are delivered to those who are unable to prepare their own food) for a few dinners per week and makes do with the limited cooking skills he has for the remainder of his meals.¹³ Clive's diet is not very nutritious and it has started to impact on his health and wellbeing.

¹² Clive is relying on a Meals on Wheels service. He may have limited choices in relation to these meals.

¹³ Clive lacks cooking skills. This can impact his ability to eat healthier foods as he may not know how to prepare them.

Practise the key skill

Veronica is a 22-year-old student who works part time at the local supermarket three nights a week. She goes out with friends on weekends and, as a result, is not home for several meals per week. Veronica's parents are Argentinian and her mother does all of the cooking in their home. In recent months, Veronica has started to put on weight, which has taken her above her healthy weight range. She has been introduced to the Australian Dietary Guidelines but is struggling to make significant changes to her food intake.

5. Discuss the challenges that Veronica may face in trying to change her diet.
 6. Identify two factors that may reduce the ability of Veronica to follow Guidelines 2 and 3 of the Australian Dietary Guidelines.
-

7.10 Review

7.10.1 Topic summary

7.2 Smoking and the role of health promotion in improving population health

- Smoking is a significant contributor to the overall burden of disease in Australia and affects some population groups disproportionately, including Aboriginal and Torres Strait Islander peoples, people from low socioeconomic backgrounds and those living outside Australia's major cities.
- A range of interventions have achieved success in reducing smoking rates, including:
 - government laws and policies — smoking bans in public places, advertising bans, health warnings, plain packaging and taxes
 - National Tobacco Campaign — implements media campaigns; maintains the How to quit website; and developed the My QuitBuddy and Quit for You, Quit for Two apps
 - the Quit campaign — implements media campaigns; implements the Quitline, a telephone counselling service and, in some states, an Aboriginal Quitline; developed the QuitCoach website; provides advice to state and territory governments relating to tobacco laws; conducts research into tobacco use and effective quitting strategies; and provides advice to health professionals on intervention approaches.

7.3 Road safety and the role of health promotion in improving population health

- Road safety is an issue in Australia as three people are killed and another 90 are seriously injured on Australian roads each day. The social and economic impacts of road trauma are also significant.
- Some population groups are more likely to experience road trauma including males, Aboriginal and Torres Strait Islander peoples, those living outside Australia's major cities, those from low socioeconomic backgrounds, and young people.
- Effective road safety interventions include:
 - government laws and policies, including speed limits, drink-driving laws and seatbelt laws
 - TAC campaigns including mass media campaigns, public education campaigns and seminars
 - Road safety education Victoria — a Victorian education campaign
 - Driver Reviver — provides free refreshments at rest stops across the country
 - Prevent Alcohol and Risk-related Trauma in Youth (P.A.R.T.Y.) program — a trauma prevention and health promotion initiative that provides young people with a real experience of a major trauma service
 - Black Spot program — works to improve infrastructure to promote safety in high accident areas
 - the National Road Safety Strategy.
 - the Victorian Road Safety Strategy 2021–2030 — works to eliminate roads deaths by 2050 by addressing the range of factors that contribute to road-related injuries, such as infrastructure, road laws, human behaviour and vehicle safety

7.4 Skin cancer and the role of health promotion in improving population health

- Australia has one of the highest rates of skin cancer in the world and many cases are preventable. Skin cancer contributes to many social and economic impacts.
- Males and those working outdoors are more likely to develop skin cancer.
- A range of strategies have been effective in decreasing the rate of skin cancer, including:
 - government laws — solariums were banned in Victoria in 2015
 - policies — most schools and many businesses and local governments have sun protection policies
 - SunSmart campaign, including the Slip, Slop, Slap, Seek, Slide advertising campaign, shade audits and support for health professionals
 - National Skin Cancer Action Week — an initiative of Cancer Council Australia and the Australasian College of Dermatologists that works to raise awareness and prevent skin cancer
 - UV Daily — a website that targets outdoor workers, specifically those working in trades, by providing education relating to sun exposure.

7.5 Initiatives to address Indigenous health and wellbeing

- Aboriginal and Torres Strait Islander peoples have significant potential to experience improvements in health and wellbeing and have therefore been a focus of numerous initiatives under the Closing the Gap policy, including:
 - Deadly Choices initiative — works to encourage healthy lifestyles among Aboriginal and Torres Strait Islander peoples and promote culturally appropriate healthcare care.
 - Learn Earn Legend! — provides mentoring and other support to young Aboriginal and Torres Strait Islander people on the importance of education, training and employment
 - The 2 Spirits program — works to improve the sexual health and wellbeing of Aboriginal and Torres Strait Islander gay men and sisters through education, prevention, health promotion, and community development activities
 - Tackling Indigenous Smoking (TIS) — a federal government initiative that provides grants and education to assist local organisations in working towards reducing smoking rates among Aboriginal and Torres Strait Islander peoples.
 - Aboriginal Quitline — a telephone counselling service that provides confidential support in a culturally sensitive way for Aboriginal and Torres Strait Islander people wanting to quit smoking
 - Aboriginal Road to Good Health program — a type 2 diabetes prevention program for Aboriginal Victorians and their families
 - Feedin' the Mob — a nutrition, physical activity and healthy lifestyle program for Aboriginal people in the City of Whittlesea, Victoria.
 - Fitzroy Stars — a football club in Melbourne that promotes healthy lifestyles and employment and education opportunities for Aboriginal people in Melbourne.
- A number of considerations can be used to evaluate the capacity of initiatives to promote Indigenous health and wellbeing, including:
 - actual improvements to health and wellbeing
 - the number of participants taking part in the initiative
 - feedback provided by participants
 - action areas of the Ottawa Charter that are evident
 - whether the initiative is culturally appropriate
 - whether the program has taken the specific needs of the target group into account
 - funding that has been provided to implement the initiative
 - whether the program addresses a significant health issue for Aboriginal and Torres Strait Islander peoples.

7.6 The Australian Dietary Guidelines

- The Australian Dietary Guidelines encourage individuals to maintain a healthy body weight, include adequate amounts of foods from the five food groups, limit the intake of saturated fat, added salt, added sugar and alcohol, support breastfeeding and care for food.
- The number of serves for each food group and the size of a serve are also included in the Australian Dietary Guidelines.
- The Australian Guide to Healthy Eating is a visual representation of Australian Dietary Guidelines 2 and 3, and is intended to be used by consumers to guide their food intake. The guide shows the proportion of foods that should be consumed from each of the five food groups, but does not include serving numbers or sizes.

7.7 The work of Nutrition Australia

- Non-government agencies such as Nutrition Australia play an important role in promoting healthy eating. Nutrition Australia advocates for good health and wellbeing by providing a range of services and resources that promote healthy eating, including:
 - Healthy Eating Advisory Service
 - National Nutrition Week
 - the development of educational resources

- nutrition seminars and workshops
- webinars developed for health professionals to assist them in promoting healthy eating
- publication of recipes
- Healthy Eating Pyramid.

7.8 The challenges in bringing about dietary change

- A range of factors contribute to the foods people consume and these can act as challenges to changing one's diet.
- These include personal preferences; attitudes and beliefs; willpower; food security; time constraints and convenience; education, nutrition knowledge and cooking skills; family, culture, society and religion; food marketing and media; and factors relating to health and wellbeing.

Resources

 **Digital document** Summary (doc-36142)

7.10.2 Key terms

Dermatologist a medical doctor with specialist training relating to conditions of the skin

Energy balance when the amount of energy consumed is the same as the amount of energy required. Energy balance contributes to neither weight gain or weight loss.

Legislation relating to a law or set of laws

Malignant abnormal cells that invade and destroy nearby healthy tissue

Metastasis when cancer has spread from one site to another

Paleo diet a diet characterised by consuming foods available to humans during the Paleolithic period (from around 2.5 million to 12000 years ago). The Paleo diet restricts the consumption of dairy, refined grains such as bread and pasta, and refined sugar such as chocolate and soft drink. The main components of the Paleo diet are meat, fish, nuts, vegetables and seeds.

Sistergirls Aboriginal and Torres Strait Islander transgender women (assigned male at birth) who have a distinct cultural identity and often take on female roles within the community, including looking after children and family (2015, Sisters & Brothers NT)

Solarium a unit that uses UV radiation to create a tan

UV index a scale from 0–11+ that provides an indicator of how intense UV radiation will be. Sun protection methods are recommended for any UV index score of 3 and over

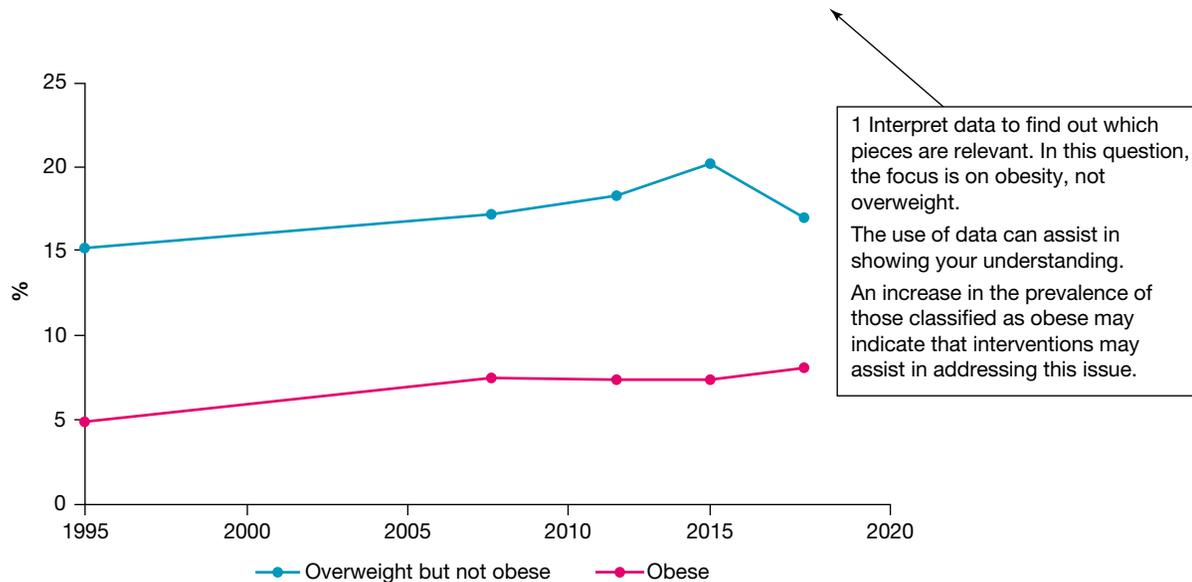
7.10.3 Extended response: build your exam skills

tlvd-2882

In previous topics, you have been provided with examples of extended response questions and practised various aspects of unpacking, planning and writing a response. In the remaining topics of this book, you will be given opportunities to further practise these skills. Note that the questions will increase in complexity and fewer hints and tips will be provided as we move through the upcoming topics.

Source 1

The proportion of those aged 5–17 classified as overweight or obese, 1995–2018



Source: Australian Institute of Health and Welfare 2017. *A picture of overweight and obesity in Australia 2017*. Cat. no.PHE 216. Canberra: AIHW.

Source 2

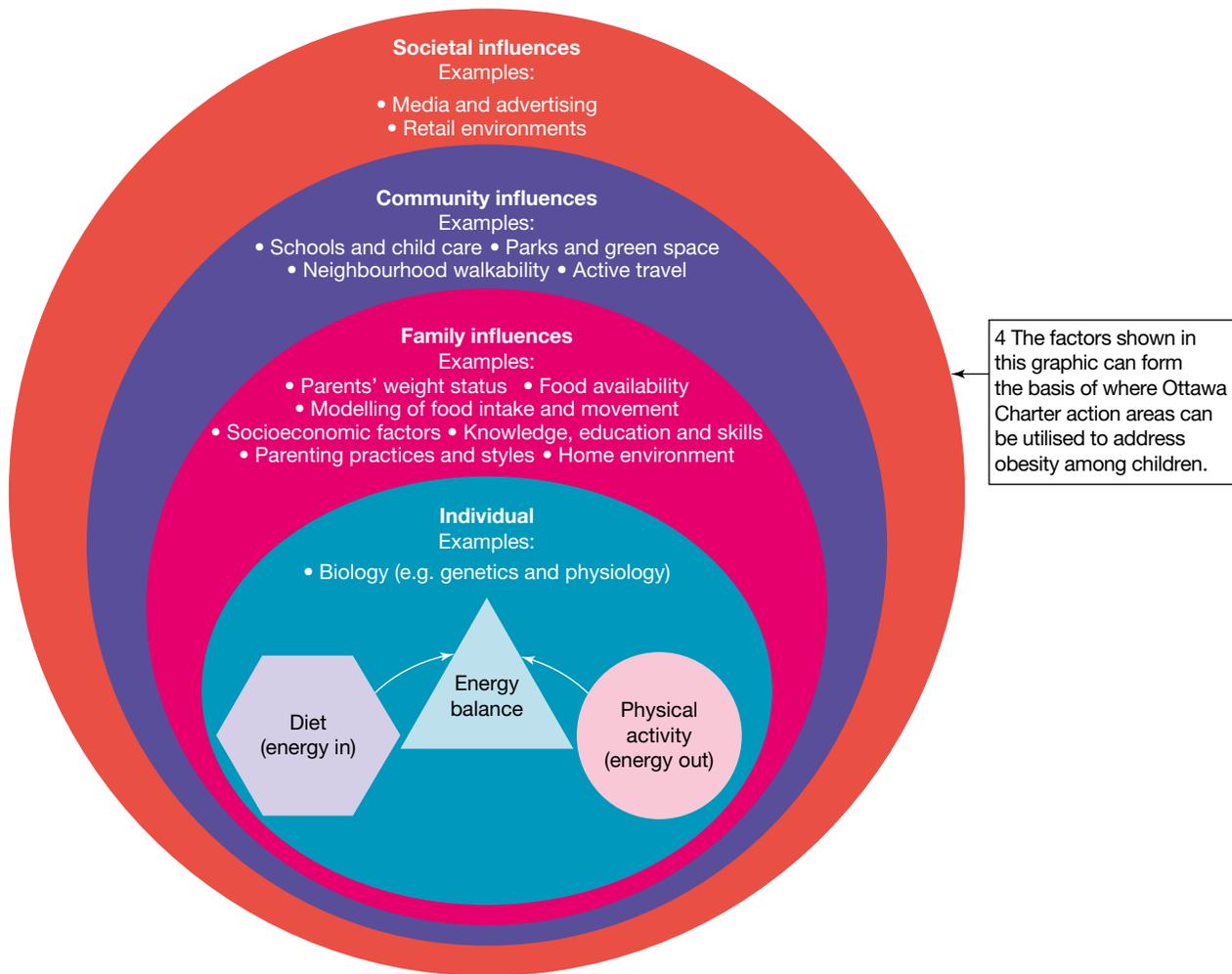
Leon is 13 years old and has always had a higher BMI for his age than recommended. He often feels self-conscious about his weight and has avoided social occasions in the past such as swimming at the beach and going to water parks.² Leon has experienced bullying as a result of his body weight in the past, which has contributed to feelings of sadness and isolation. Leon lives with his mother who works full-time, so he spends time at his grandparents' house after school and they often feed him snacks and dinner.³

2 Information within the case study that links to health and wellbeing can be used to discuss how interventions can promote one or more of the dimensions.

3 This information could be used to discuss potential barriers to Leon losing weight.

Source 3

Causes of overweight and obesity



Source: Mīhrshahi S, Gow ML & Baur LA 2018. Contemporary approaches to the prevention and management of paediatric obesity: an Australian focus. *Medical Journal of Australia* 209(6):267–74

Using the information provided and your own knowledge of health promotion, discuss the potential of the Ottawa Charter in addressing obesity among young people in Australia and how this may promote health and wellbeing. **10 marks**

7.10 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

7.10 Exam questions

7.10 Exam questions

Question 1 (6 marks)

Source: VCE 2020, *Health and Human Development Exam*, Q.4; © VCAA

Overall, Australian children aged 14–18:

- get 41% of their energy from discretionary foods
- get 13% of their energy from added sugars and 13% from saturated and trans fats (with the latter exceeding the 10% recommended limit)
- have an intake of sodium well above the level of adequate intake.

Source: adapted from Australian Institute of Health and Welfare, Nutrition across the life stages, cat. no. PHE 227, AIHW, Canberra, 2018, p. 50

- a. Use two examples from the information above to **explain** the impact on the long-term health status of Australians. **2 marks**
- b. **Explain** two challenges that can have an impact on an individual's ability to make dietary changes. **4 marks**

Question 2 (4 marks)

Source: VCE 2014, Health and Human Development Exam, Q.5.c; © VCAA

Dietary Guideline 3 states that an individual should 'limit intake of foods containing saturated fat, added salt, added sugars and alcohol'.

Explain two ways in which this guideline may help reduce the incidence of diabetes mellitus.

Question 3 (4 marks)

Source: VCE 2007, Health and Human Development Exam, Q.3.c; © VCAA

The work of a non-government organisation such as Nutrition Australia can help to address health gains.

Outline two ways that Nutrition Australia is contributing to the promotion of good nutrition for school-aged children.

Question 4 (8 marks)

The Yarning It Up — Don't Smoke It Up journey to quit tobacco project, provided by the East Metropolitan Community and Population Health Service, aims to reduce tobacco-related harm in the adult Aboriginal population of Perth, Western Australia.

The project delivers workplace information sessions to service providers focusing on this program. It also provides workshops sessions to community members. This involves a thorough explanation of the Yarning It Up — Don't Smoke It Up journey to quit tobacco model. The workshops are culturally appropriate; education is presented as a story which allows participants to lead the workshop. The project provides information sessions to community groups, organisations and others working in the tobacco cessation area.

The workshop includes:

- Yarning It Up — Don't Smoke It Up journey to quit model
- triggers and barriers to smoking
- referral process
- supports available to quit.

Source: Edited extract from Australian Indigenous HealthInfoNet.

- a. **Evaluate** the Yarning It Up program in terms of its capacity to improve Indigenous health and wellbeing. **4 marks**
- b. **Identify** two action areas of the Ottawa Charter and explain how they are reflected in the Yarning It Up program. **4 marks**

Question 5 (3 marks)

Describe an initiative developed by Nutrition Australia for health promotion and dietary advice.

Resources

- | | |
|--|--|
|  Digital document | Key terms glossary (doc-36129) |
|  Exam question booklet | Topic 7 exam question booklet (eqb-0061) |
|  Interactivities | Crossword (int-6876)
Definitions (int-6877) |

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 7 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 7.1 Key terms glossary (doc-36129)
- 7.2 Smoking health promotion worksheet (doc-32206)
My QuitBuddy worksheet (doc-32207)
- 7.3 Road safety health promotion worksheet (doc-32208)
- 7.4 SunSmart worksheet (doc-32209)
SunSmart app worksheet (doc-32210)
- 7.5 Closing the Gap worksheet (doc-34384)
2 Spirits worksheet (doc-32003)
Fitzroy Stars worksheet (doc-32004)
- 7.6 Servings and nutrients calculator worksheet (doc-32213)
- 7.7 Nutrition Australia worksheet (doc-32214)
Global Kitchen cookbook worksheet (doc-32215)
- 7.8 Food insecurity worksheet (doc-32211)
- 7.10 Summary (doc-36142)
Key terms glossary (doc-36129)

Exam question booklets

- 7.1 Topic 7 exam question booklet (eqb-0061)
- 7.10 Topic 7 exam question booklet (eqb-0061)

Teacher-led videos

- 7.9 Key skill: Apply the action areas of the Ottawa Charter for Health Promotion to a range of data and case studies (tlvd-1918)
Key skill: Evaluate initiatives in terms of their capacity to improve Indigenous health and wellbeing (tlvd-1919)
Key skill: Draw conclusions as to why dietary improvements are difficult to achieve in Australia (tlvd-1920)
- 7.10 Extended response: build your exam skills (tlvd-2882)

Weblinks

- 7.2 QuitNow
Smoking health promotion
My QuitBuddy
- 7.3 Road safety health promotion
- 7.4 SunSmart
SunSmart app
- 7.5 Closing the Gap
2 Spirits
Fitzroy Stars
- 7.6 Servings calculator
Nutrients calculator
- 7.7 Nutrition Australia
Global Kitchen cookbook
- 7.8 Food insecurity

Interactivities

- 7.10 Crossword (int-6876)
Definitions (int-6877)

To access these online resources, log on to www.jacplus.com.au.

School-Assessed Coursework Unit 3

AREA OF STUDY 2: PROMOTING HEALTH AND WELLBEING

Outcome 2

Explain changes to public health approaches, analyse improvements in population health over time and evaluate health promotion strategies.

School-Assessed Coursework 2 online only

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au, or download the assessment as a Word document from your Resources tab.

Resources

 **Digital document** School-Assessed Coursework (doc-34824)

Key knowledge

- Improvements in Australia's health status since 1900 and reasons for these improvements, focusing on policy and practice relating to:
 - 'old' public health
 - the biomedical approach to health and improvements in medical technology
 - development of 'new' public health including the social model of health and Ottawa Charter for Health Promotion
 - the relationship between biomedical and social models of health
- Australia's health system, including Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme, and its role in promoting health in relation to funding, sustainability, access and equity
- The role of health promotion in improving population health, focusing on smoking, including:
 - why it was/is targeted
 - effectiveness of the health promotion in improving population health
 - how the health promotion reflects the action areas of the Ottawa Charter for Health Promotion
- Initiatives introduced to bring about improvements in Indigenous health and wellbeing in Australia and how they reflect the action areas of the Ottawa Charter for Health Promotion
- Initiatives to promote healthy eating in Australia including Australian Dietary Guidelines and the work of Nutrition Australia, and the challenges in bringing about dietary change

Key skills

- Analyse data that show improvements in health over time and draw conclusions about reasons for improvements
- Analyse the role of Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme in promoting Australia's health
- Analyse the strengths and limitations of biomedical and social models of health in bringing about improvements in health status
- Apply the action areas of the Ottawa Charter for Health Promotion to a range of data and case studies
- Evaluate initiatives in terms of their capacity to improve Indigenous health and wellbeing
- Draw conclusions as to why dietary improvements are difficult to achieve in Australia.

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School-Assessed Coursework Unit 3

AREA OF STUDY 2: PROMOTING HEALTH AND WELLBEING

Outcome 2

Explain changes to public health approaches, analyse improvements in population health over time and evaluate health promotion strategies.

Structured questions

Total marks: 50 marks

Time duration: 60 minutes

Key knowledge

- Improvements in Australia's health status since 1900 and reasons for these improvements, focusing on policy and practice relating to:
 - 'old' public health
 - the biomedical approach to health and improvements in medical technology
 - development of 'new' public health including the social model of health and Ottawa Charter for Health Promotion
 - the relationship between biomedical and social models of health
- Australia's health system, including Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme, and its role in promoting health in relation to funding, sustainability, access and equity
- The role of health promotion in improving population health, focusing on smoking, including:
 - why it was/is targeted
 - effectiveness of the health promotion in improving population health
 - how the health promotion reflects the action areas of the Ottawa Charter for Health Promotion
- Initiatives introduced to bring about improvements in Indigenous health and wellbeing in Australia and how they reflect the action areas of the Ottawa Charter for Health Promotion
- Initiatives to promote healthy eating in Australia including Australian Dietary Guidelines and the work of Nutrition Australia, and the challenges in bringing about dietary change

Key skills

- Analyse data that show improvements in health over time and draw conclusions about reasons for improvements
- Analyse the role of Medicare, private health insurance, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme in promoting Australia's health
- Analyse the strengths and limitations of biomedical and social models of health in bringing about improvements in health status
- Apply the action areas of the Ottawa Charter for Health Promotion to a range of data and case studies
- Evaluate initiatives in terms of their capacity to improve Indigenous health and wellbeing
- Draw conclusions as to why dietary improvements are difficult to achieve in Australia.

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Question 1 (12 marks)

SOURCE 1 Infant mortality rates per 1000 live births, 1912 and 2015

	Males	Females
1912	80	63
2015	3.5	3

Source: AIHW and ABS data.

- Infant mortality rates have fallen significantly since 1912. Explain how a change in the prevalence of certain diseases/conditions may have contributed to this decline. **2 marks**
- Describe two characteristics of the social model of health, using examples of these in action. **4 marks**
- Identify two principals of the social model of health and explain how they could be used to address rates of skin cancer in Australia. **4 marks**
- Discuss two limitations of the biomedical model of health with relation to skin cancer. **2 marks**

Question 2 (8 marks)

Read SOURCE 2 and answer the questions.

- Explain who is eligible for the NDIS. **2 marks**
- Describe how participating in the National Cricket Inclusion Championship may have impacted on MJ and Tyson's spiritual and emotional health and wellbeing. **2 marks**
- Apart from funding for social participation or community services, explain two ways NDIS funding might be used in an individualised plan for eligible participants to improve their daily living. **2 marks**
- How does the NDIS reflect the sustainability of the Australian health system? **2 marks**

SOURCE 2

When twin brothers MJ and Tyson Parbs travelled across the Tasman this week to represent their state, mum Nicole was filled with pride for how far her sons have come.

The 16-year-old twins represented Tasmania in the National Cricket Inclusion Championships in Geelong, playing in the state's intellectual disability team.

For Nicole, who has seen the challenges both boys faced throughout their childhood, it's an achievement she is delighted with.

Both MJ and Tyson were diagnosed with an intellectual disability at six, after their parents noticed they weren't reaching the major developmental milestones.

The twins have attended mainstream schools throughout their life, but have had to overcome several challenges along the way.

Two years ago, they joined the National Disability Insurance Scheme (NDIS) and are now receiving funding for social participation — they attend regular camps and outdoor activities — and support workers who teach the boys skills like cooking and shopping.

Nicole says the support has been a big help for their family, particularly as they can tailor the support to their needs.

'The NDIS is helping to make a real difference and both boys now have the support they need, and we can tailor it around their interests, especially cricket.'

MJ says the sport is a great way for them to have fun, and the progression to state level is something he is proud of. 'Playing for the Bulls is a great way for us to practice our skills and get ready for the bigger events, we meet new people and have fun. It's a really big deal for me and my brother, when we first stayed playing cricket we thought we would never get there but we've put in the extra work and effort and here we are!'

Source: <https://www.ndis.gov.au/stories/1278-tassie-twins-take-cricket-challenge>

Question 3 (13 marks)

Jude, a 55-year-old woman, was injured in a car accident on her way to work. An ambulance was called by a concerned onlooker and she was taken to a local public hospital where she was diagnosed with a spiral fracture in her left arm, requiring surgery. Following her stay in hospital, she was discharged with prescriptions for both postoperative antibiotics and pain killers and was referred to a physiotherapist for rehabilitation.

- a. Explain the difference between Medicare and private health insurance. **2 marks**
- b. Identify two services Jude was given access to via Medicare and two she could have claimed through private health insurance if she had both types of cover. **4 marks**
- c. Outline the three ways in which Medicare is funded. **3 marks**
- d. Describe the Pharmaceutical Benefit Scheme and explain how it may have aided Jude in her recovery. **2 marks**
- e. Jude has a 29-year-old daughter who currently does not have private health insurance. Name and explain an incentive provided by the federal government to encourage people of Jude's daughter's age to take out private health insurance. **2 marks**

Question 4 (7 marks)

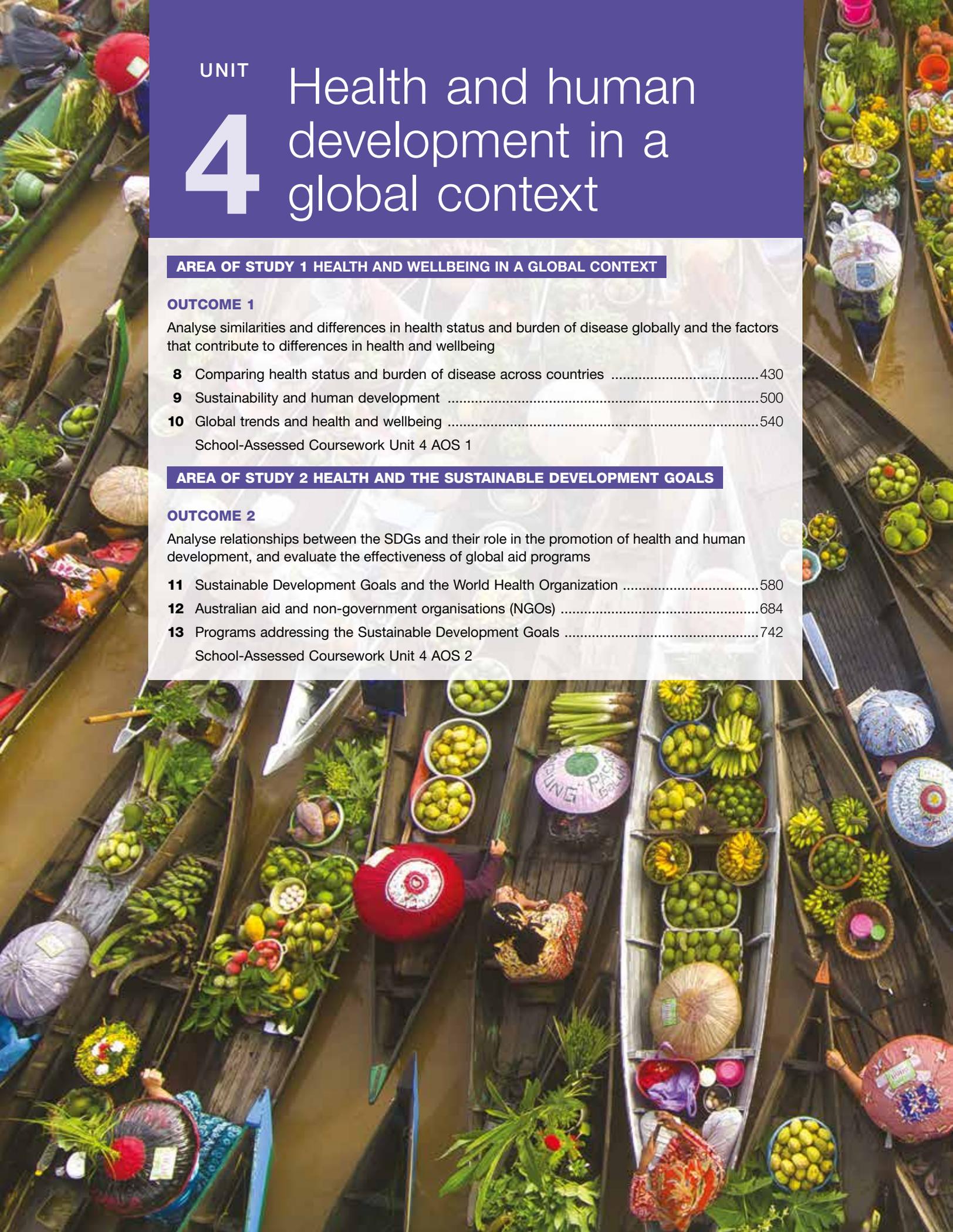
- a. Briefly outline an existing health promotion initiative that has been designed to improve Indigenous health and wellbeing. **3 marks**
- b. You have been asked to develop a checklist of questions that could be used to evaluate the capacity of initiatives to improve Indigenous health and wellbeing. Outline four key questions people undertaking evaluations should consider. **4 marks**

Question 5 (10 marks)

The Australian Guide to Healthy Eating is a visual representation of two of the dietary guidelines.

- a. Identify and outline the two dietary guidelines illustrated by the Australian Guide to Healthy Eating. **4 marks**
- b. Outline two initiatives of Nutrition Australia and explain how they could increase levels of calcium consumption by Australians. **4 marks**
- c. Discuss two challenges faced by Australians in regard to bringing about dietary change. **2 marks**

END OF TASK



UNIT
4 Health and human development in a global context

AREA OF STUDY 1 HEALTH AND WELLBEING IN A GLOBAL CONTEXT

OUTCOME 1

Analyse similarities and differences in health status and burden of disease globally and the factors that contribute to differences in health and wellbeing

8 Comparing health status and burden of disease across countries	430
9 Sustainability and human development	500
10 Global trends and health and wellbeing	540

School-Assessed Coursework Unit 4 AOS 1

AREA OF STUDY 2 HEALTH AND THE SUSTAINABLE DEVELOPMENT GOALS

OUTCOME 2

Analyse relationships between the SDGs and their role in the promotion of health and human development, and evaluate the effectiveness of global aid programs

11 Sustainable Development Goals and the World Health Organization	580
12 Australian aid and non-government organisations (NGOs)	684
13 Programs addressing the Sustainable Development Goals	742

School-Assessed Coursework Unit 4 AOS 2

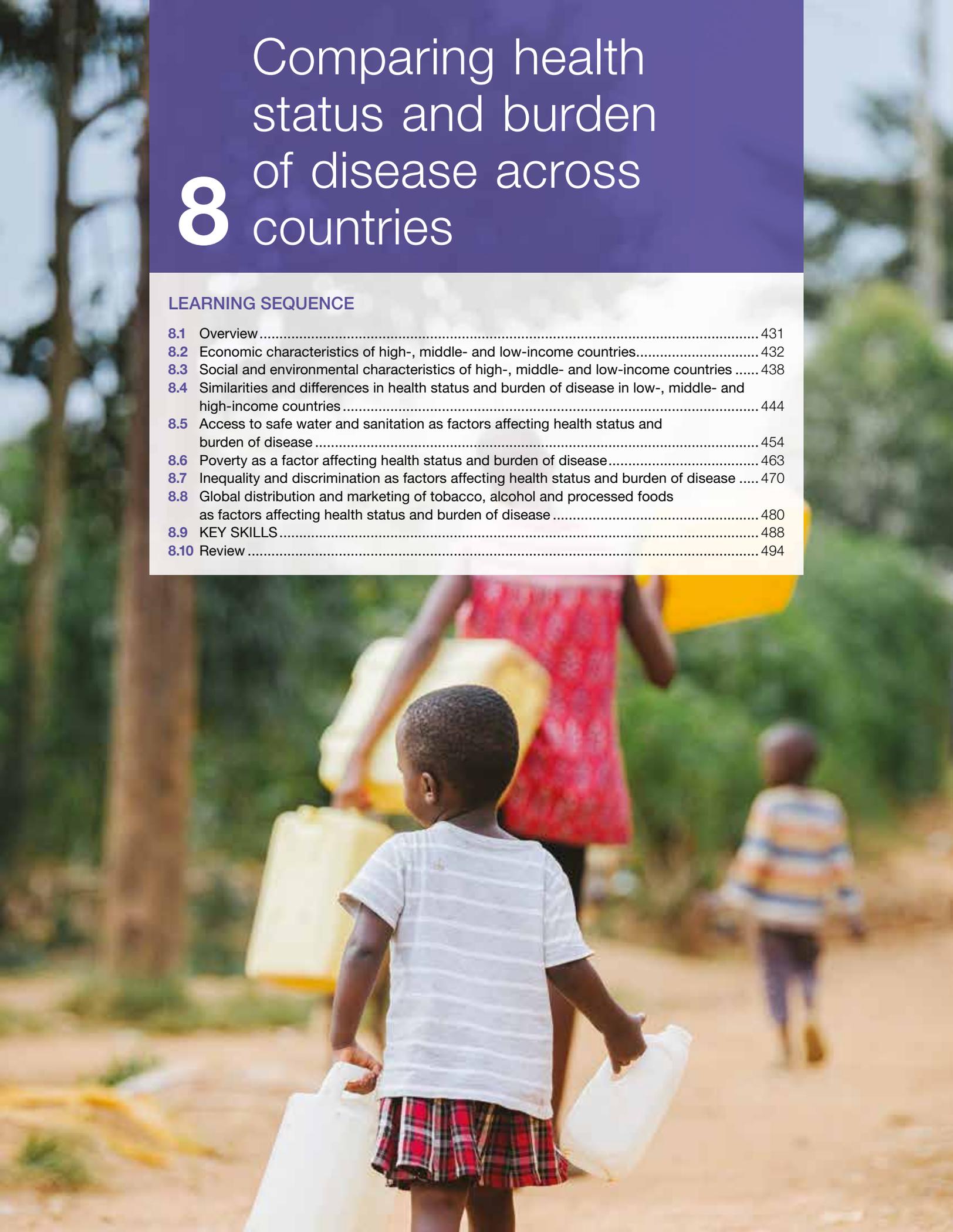


Comparing health status and burden of disease across countries

8

LEARNING SEQUENCE

8.1	Overview	431
8.2	Economic characteristics of high-, middle- and low-income countries.....	432
8.3	Social and environmental characteristics of high-, middle- and low-income countries	438
8.4	Similarities and differences in health status and burden of disease in low-, middle- and high-income countries.....	444
8.5	Access to safe water and sanitation as factors affecting health status and burden of disease	454
8.6	Poverty as a factor affecting health status and burden of disease.....	463
8.7	Inequality and discrimination as factors affecting health status and burden of disease	470
8.8	Global distribution and marketing of tobacco, alcohol and processed foods as factors affecting health status and burden of disease	480
8.9	KEY SKILLS	488
8.10	Review	494



8.1 Overview

Key knowledge	Key skills
Characteristics of high-, middle- and low-income countries	Describe characteristics of high-, middle-, and low-income countries
Similarities and differences in health status and burden of disease in low-, middle- and high-income countries, including Australia	Evaluate data to analyse similarities and differences between countries in relation to health status and burden of disease Compare health data and other information to analyse reasons for health inequalities within and between nations
Factors that contribute to similarities and differences in health status and burden of disease, including access to safe water; sanitation; poverty; inequality and discrimination (race, religion, sex, sexual orientation and gender identity); and global distribution and marketing of tobacco, alcohol and processed foods	Analyse factors that contribute to health status and burden of disease in different countries and discuss their impact on health and wellbeing Compare health data and other information to analyse reasons for health inequalities within and between nations

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Communicable diseases	Gross Domestic Product (GDP)
Discrimination	Gross National Income (GNI)
Extreme poverty	Human rights
Gender equality	Non-communicable diseases
Globalisation	Urban slums

Exam terminology

Describe Provide a general description

Evaluate Make a judgement, weigh up the pros and cons

Compare Show similarities and/or differences

Analyse Examine the components of; Look for links, patterns, relationships and anomalies

Discuss Give an overall account of

Resources

 **Digital document** Key terms glossary (doc-36130)

 **Exam question booklet** Topic 8 Exam question booklet (eqb-0062)

8.2 Economic characteristics of high-, middle- and low-income countries

KEY CONCEPT Understanding the economic characteristics of high-, middle- and low-income countries

Classifying countries into groups allows countries that experience similar characteristics to be grouped together for the purpose of guiding policies and interventions that may improve the level of health and wellbeing experienced. Successful strategies used in one country may be built upon and applied to other, similar countries to promote trade, increase incomes and improve health and wellbeing.

8.2.1 Classifying countries

Numerous systems have been developed to classify countries over time. More recently, one of the main ways to group countries has been to classify them as either developed or developing. Developed countries were considered to have a high level of economic development — including a range of industries, trading on the global market and high average incomes — and were not solely reliant on **primary production** such as mining and farming. Developing countries, on the other hand, had a low level of economic development and relied largely on primary production and **subsistence farming**.

Although still used in some instances, this system of classification is now seen as outdated as it is quite subjective and agreement could not be made on the specific criteria that should be met to classify a country as either developed or developing. As a result, a more modern system of classifying countries was developed by the World Bank and uses a country's **Gross National Income (GNI)** per capita, or average income, to classify countries into one of three main groups:

- high-income
- middle-income
- low-income.

Middle-income countries are often broken down into two further groups:

- upper middle-income
- lower middle-income (see **FIGURE 8.2**)

The income thresholds, or GNI per capita for each group, are updated on 1 July each year, to take into account changes in average incomes in the previous year. As a result, countries can change groupings from one year to the next. The thresholds are adjusted according to criteria set by the World Bank and not by dividing the countries into equal groups, which means that the income groups do not contain the same number of countries.

FIGURE 8.1 Chad is classified as a low-income country and largely relies on subsistence farming.

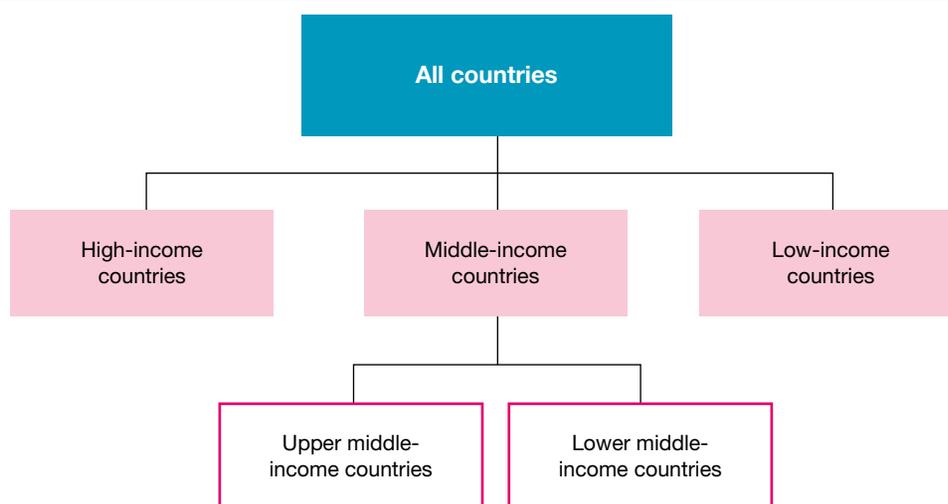


Primary production the process of producing natural products for human use such as plants and animals

Subsistence farming self-sufficient farming carried out by individuals to provide food for themselves and their family

Gross National Income (GNI) the total value of goods and services a country's citizens produce, including the value of income earned by citizens who may be working in an overseas country

FIGURE 8.2 All countries can be classified into one of three categories. Middle-income countries are sometimes broken down into a further two groups.



The figures shown in **TABLE 8.1** are for the 2020–21 financial year.

TABLE 8.1 Income thresholds and example countries for the World Bank income groupings classification system

	GNI per capita range	Examples of countries in this grouping	Number of countries in this group
High income	\$12 536 or more	Australia, Canada, Chile, Greece, Ireland, Japan, USA, United Kingdom	84
Upper middle income	\$4046–\$12535	China, Cuba, Fiji, Indonesia, Mexico, South Africa, Turkey, Russian Federation	52
Lower middle income	\$1036–\$4045	Cambodia, India, Nepal, Pakistan, Papua New Guinea	50
Low income	\$1035 or less	Chad, Zimbabwe, Uganda, Rwanda, South Sudan	32

It is important to remember that the World Bank system of classifying countries uses average incomes for each country and therefore doesn't acknowledge the variations that are experienced within any one country or between two countries in the same group. For example, China is classified as upper middle-income but average incomes vary considerably across China and some regions would be classified as low income if they were independent of the rest of the country. Fiji, a Pacific Island country, is another upper middle-income country but is quite different from China in relation to industry, population and culture.

Although variations exist between and within countries in the same groupings, there are identifiable characteristics that are common to each type of country.

8.2.2 Characteristics of high-, middle- and low-income countries

The characteristics of high-, middle- and low-income countries can be classified into three categories, as shown in **FIGURE 8.3**.

The characteristics discussed here (economic characteristics in this subtopic; social and environmental characteristics in subtopic 8.3) are not necessarily common to all high-, middle- or low-income countries, but they represent differences that are often experienced between the three groups. The extent of these differences will vary depending on which countries are being compared.

The economic, social and environmental characteristics are often related and affect each other. For example, a country with adequate infrastructure (environmental) is more likely to trade on the global market, which can contribute to high average incomes (economic). High average incomes mean that governments and individuals have more money to invest in education (social). Understanding the relationships between the factors can make it easier to identify a range of characteristics common to each income group.

Economic characteristics

A range of factors relating to the financial or economic state of a country can influence the opportunities and resources that are available for its citizens. ‘Poverty’ is a term commonly used to describe the lack of access to resources, often as the result of a lack of access to money. Low-income countries and, to a lesser extent, middle-income countries, often have a large proportion of their population living in poverty compared to high-income countries.

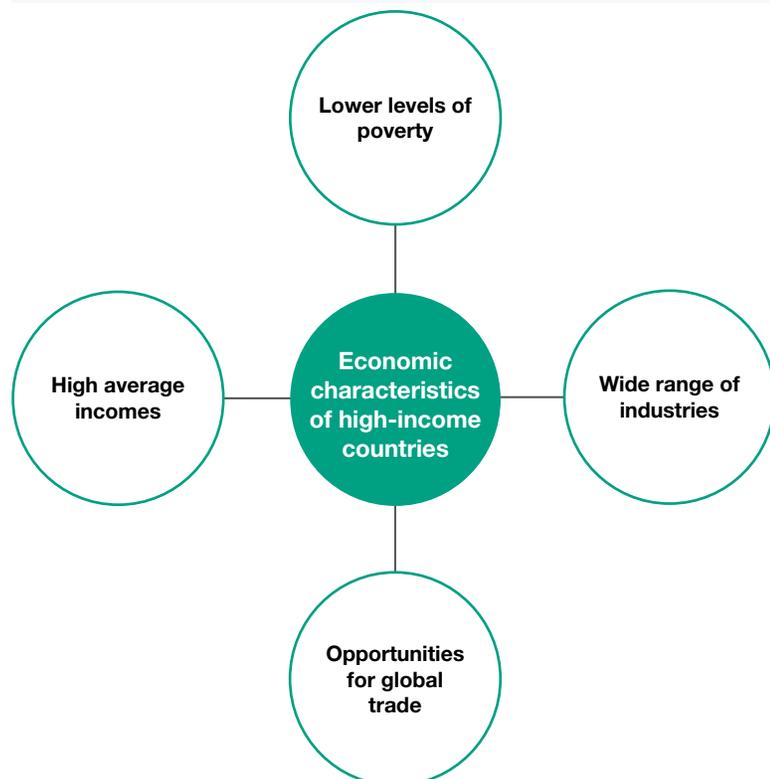
There are many reasons for the difference in the levels of poverty experienced between the three groups. They include the industries present in each country, opportunities for global trade and average incomes (see **FIGURE 8.4**).

High-income countries often have a wide range of industries including mining, processing, manufacturing, education, healthcare, scientific research and technology. Low-income countries, on the other hand, often have a limited range of industries, usually centred on farming and primary production. According to the World Bank, in 2020 around 3 per cent of the workforce in high-income

FIGURE 8.3 Characteristics of high-, middle- and low-income countries



FIGURE 8.4 Economic characteristics of high-income countries



countries worked in agriculture, compared to almost one-third in middle-income countries and up to 70 per cent and higher in many low-income countries. This reduces the ability of low-income countries to trade on the global market, as they may not be able to generate goods that other countries require. Middle-income countries often reflect aspects of both high- and low-income countries in relation to trade and many are in a transition period, experiencing increasing trade opportunities and growing economies.

Most industries experience highs and lows in relation to production and demand. Having a range of industries increases the probability that at least some of these industries will experience positive production and trade trends at any one time. If a country's industries revolve around one resource (such as food production), events such as drought can have a significant impact on this industry — if there are no other industries to take their place on the global market, trade can be affected.

Global trade is also affected by infrastructure (such as roads, ports and airports) and knowledge and experience, which assist in buying from and selling to other countries around the world. High-income countries generally have access to these resources, so they can transport goods from the place of production to an overseas destination, and benefit most from trading opportunities as a result. Many middle-income countries are in the process of building infrastructure and developing trading links around the world. Low-income countries often lack the infrastructure (see **FIGURE 8.6**), knowledge and production capabilities to produce a range of goods and services

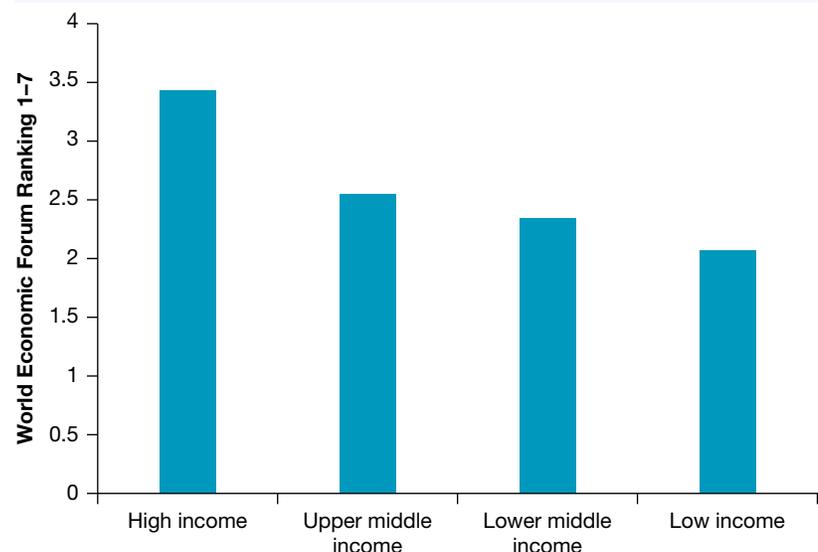
to trade on a global scale (see **FIGURE 8.7**). This prevents the economies of low-income countries from growing and contributes to the low average incomes they experience.

The level of poverty can be expressed as the proportion of those with incomes of less than US\$1.90 per day, known as **extreme poverty**. Low- and middle-income countries experience a greater proportion of the population living in extreme poverty than high-income countries (see **FIGURE 8.8**).

FIGURE 8.5 Adequate infrastructure like the shipping port in Melbourne assists in promoting economic development by contributing to increased global trade.



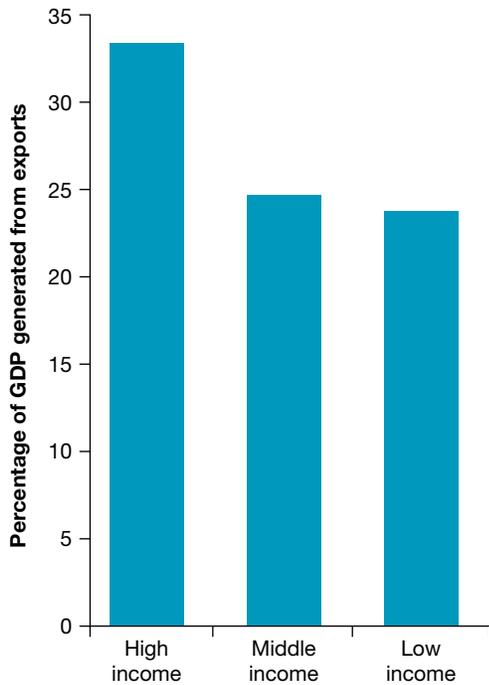
FIGURE 8.6 Logistics performance index: Quality of trade and transport-related infrastructure (1 = low to 5 = high)



Source: <https://data.worldbank.org/indicator/LP.LPI.INFR.XQ?view=chart>

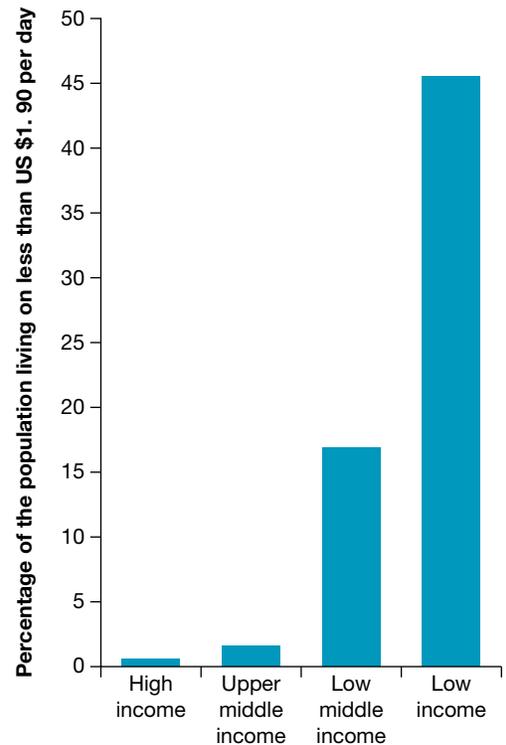
Extreme poverty living on less than US\$1.90 per day

FIGURE 8.7 The proportion of GDP generated by the export of goods and services, 2019



Source: Adapted from: <http://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?view=chart>

FIGURE 8.8 Proportion of the population living on less than US\$1.90 a day (PPP)



Source: Adapted from: <http://povertydata.worldbank.org/poverty/category/>

PPP refers to 'purchasing power parity', which provides a way to compare countries that have different currencies and costs of living. PPP takes a range of factors into account, such as average income and the cost of living, to provide a standard comparable currency. PPP is often expressed in US dollars (US\$) or as international dollars (PPP\$), which is a theoretical currency.

EXAM TIP

There are variations within and between all types of countries and you should avoid making definite statements that are not technically correct. For example, to say that 'people in low-income countries live on less than US\$1.90 per day' implies that all people in low-income countries live in extreme poverty, which is not true. Instead, say that 'people in low-income countries are more likely to live on less than US\$1.90 per day than those in high-income countries' as this statement is true and will be eligible for marks.

Gross National Income (GNI) per capita is the measure used to categorise countries according to the income groupings used by the World Bank. As a result, GNI per capita increases from low- to middle-income and from middle- to high-income countries. Average income can also be measured in relation to **Gross Domestic Product (GDP)** per capita. This measure is similar to GNI per capita, but is not adjusted to take into account the income earned by foreign citizens or the income earned by citizens working in other countries. As a result, GNI per capita is being used more as an accurate indicator of the average income of a country. Regardless of the measure used, lower incomes in low- and middle-income countries have an impact on many aspects of life, such as access to education, healthcare, housing, clean water and food. All of these factors have an impact on quality of life and health status.

Gross Domestic Product (GDP) a measure that reflects the economic state of a country. GDP is the value of all goods and services produced in a country in a 12-month period.

Classifying a country as high-, middle- or low-income only takes economic indicators into account, and these do not necessarily reflect the overall quality of life experienced. In addition to economic characteristics, social and environmental characteristics must be taken into consideration.

8.2 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

8.2 Quick quiz on	8.2 Exercise	8.2 Exam questions
---------------------------------	---------------------	---------------------------

Select your pathway

LEVEL 1 2, 3, 5	LEVEL 2 1, 4, 8	LEVEL 3 6, 7
---------------------------	---------------------------	------------------------

Test your knowledge

- Briefly explain the World Bank's income grouping classification system.
 - Explain why the income grouping system is more reliable than classifying countries as either 'developed' or 'developing'.
- Outline three economic characteristics common among high-income countries compared to low- and middle-income countries.
- Explain reasons for the lower level of global trade in most low- and middle-income countries compared to high-income countries.
- Explain how adequate infrastructure can assist in trading on the global market in middle-income countries.
- Identify the measure that reflects extreme poverty.

Apply your knowledge

- Explain how having a diverse range of industries could assist in reducing poverty.
- Discuss two ways that high-income countries could assist low-income countries in breaking the cycle of poverty.
- Use data from this subtopic to compare the following between high-, middle- and low-income countries:
 - quality of infrastructure promoting trade
 - proportion of people living on less than US\$1.90 per day.

8.2 Quick quiz on	8.2 Exercise	8.2 Exam questions
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Question 1 (2 marks)
Source: VCE 2014, *Health and Human Development Exam*, Q.8 (adapted); © VCAA
Low- and middle-income countries often share a number of social, environmental and economic characteristics.
Identify any two examples of characteristics common to low- and/or middle-income countries.

Question 2 (1 mark)
On **what** basis are countries classified according to the World Bank income classification system?

Question 3 (2 marks)
Identify two economic characteristics of a low- or middle-income country.

Question 4 (2 marks)
List two economic characteristics of a high-income country.

Question 5 (2 marks)
In the last decade, Country X has shown the following improvements:

- access to sanitation has improved, particularly in urban areas
- birth rates have steadily decreased
- growth of industries, particularly in the electronics and communication fields

- the introduction of social housing and a universal health scheme has been established
- increase in living standards, with very few families living on less than US\$1.90 per day
- construction and redevelopment of major roads and rail systems.

From the information above, **identify** two economic characteristics relevant to Country X.

More exam questions are available in your learnON title.

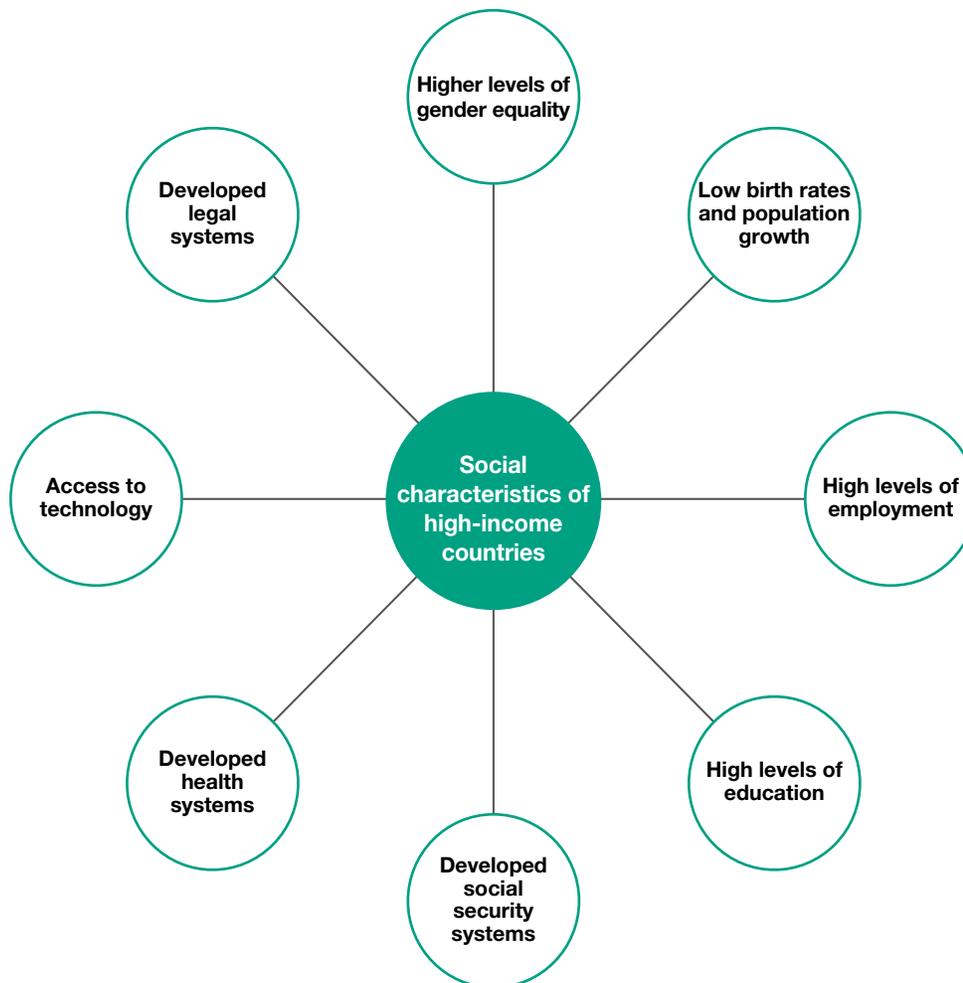
8.3 Social and environmental characteristics of high-, middle- and low-income countries

KEY CONCEPT Understanding the social and environmental characteristics of high-, middle- and low-income countries

8.3.1 Social characteristics

There are many social factors associated with high-, middle- and low-income countries. The social factors that are characteristic of high-income countries are summarised in **FIGURE 8.9**.

FIGURE 8.9 Social characteristics common among high-income countries



Gender equality

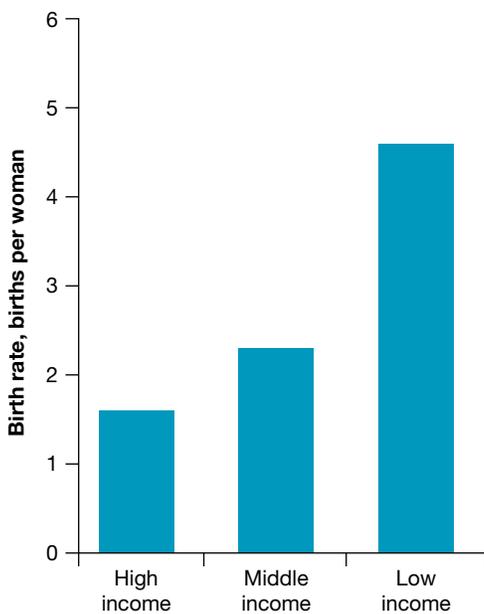
High-income countries often experience relatively high levels of **gender equality**. In these countries, both males and females have opportunities and choices in education, employment, community participation, family planning and recreation. In many low-income countries, however, females do not have the same opportunities as males in society. Females may have limited opportunities for education and often work in fields tending crops and/or spend significant time collecting water and preparing meals. Many middle-income countries are benefitting from greater levels of gender equality as more females in paid employment help to reduce levels of poverty and contribute to the country's productivity and economy.

Birth and population rates

Low birth rates (see **FIGURE 8.10**) and slow rates of population growth (see **FIGURE 8.11**) are characteristic of many high-income countries compared to middle-income — and especially low-income — countries.

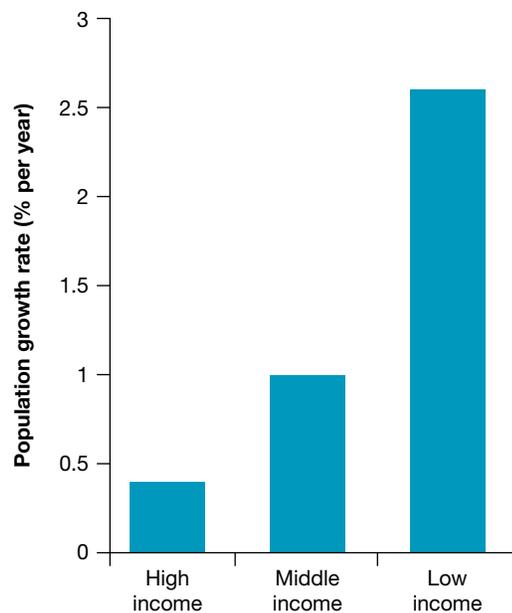
Access to contraception, choice in family planning, career choices, education, gender equality and culture contribute to this difference. High birth rates in many low- and middle-income countries can limit the ability of parents to care for all of their children and provide them with the resources required to live a healthy life. High population growth rates limit the ability of governments to provide services for its citizens such as education, healthcare and social security.

FIGURE 8.10 Birth rate, average number of births per woman, 2018



Source: Adapted from: <http://data.worldbank.org/indicator/SP.DYN.TFRT.IN?view=chart>

FIGURE 8.11 Population growth rate (% per year) by income grouping, 2019



Source: Adapted from: <http://data.worldbank.org/indicator/SP.POP.GROW?view=chart>

Education and employment levels

High rates of education and employment are characteristic of most high-income countries. People often have choices about the level of education and the type of career they pursue. Many low-income countries do not have a developed education system, so career options are often limited. In addition, families in low-income countries usually have to pay for their children to attend school, as opposed to middle- and high-income countries, where governments contribute significant funds to provide education opportunities.

Gender equality when males and females have equal rights, responsibilities and opportunities

Social security systems

High levels of economic development and relatively stable political systems increase the ability of governments in high-income countries to provide social security payments for those in need. Individuals who are unemployed, or unable to work due to illness or disability, are often provided with financial support to assist in promoting their health and wellbeing. Low- and middle-income countries often do not have the means to provide assistance to their citizens, and those who are unemployed or unable to work are driven further into poverty.

Health systems

High-income countries generally have public health systems. People are usually able to access basic healthcare when they need it regardless of their ability to pay. Those in low- and middle-income countries often lack access to suitable healthcare, which affects the level of health and wellbeing they experience.

Access to technology

Technology includes access to communication systems, the internet and medical technologies. It can be used to assist countries in developing their economies, building trade opportunities, furthering education and treating ill health. Technology is more accessible in high-income countries due to a combination of economic resources, infrastructure and education. Low-income countries often lack access to technology, and this impacts on the ability of citizens to gain an education and earn an income.

Legal systems

Most high-income countries experience strong political and legal systems. Unstable governments and political unrest are characteristic of many low-income and some middle-income countries and increase the risk of civil conflict, which is also more common in low-income countries.

A strong legal system is important for ensuring that human rights, such as the right to education and the right to live safely, are upheld. Many low-income countries and, to a lesser extent, middle-income countries, lack a strong legal system, and the health and wellbeing of their citizens can be affected as a result.

8.3.2 Environmental characteristics

Characteristics of the environment contribute to the level of health and wellbeing experienced in all countries. Aspects of the environment that are often characteristic of high-, middle- and low-income countries include the accessibility of food, water and sanitation, adequate housing, infrastructure and carbon dioxide emissions (see **FIGURE 8.13**).

FIGURE 8.12 Medical technology is more readily available in high-income countries.

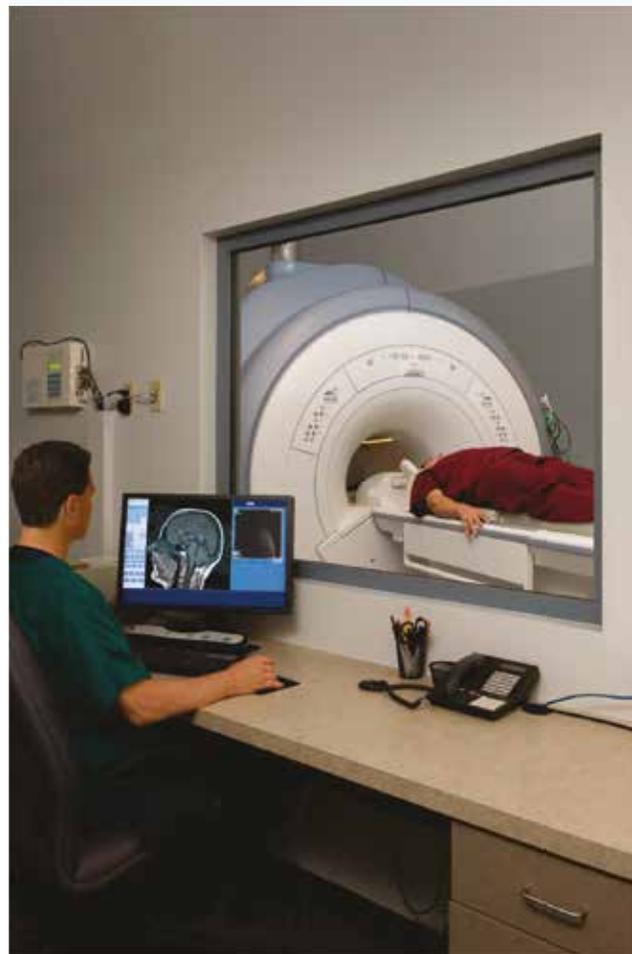
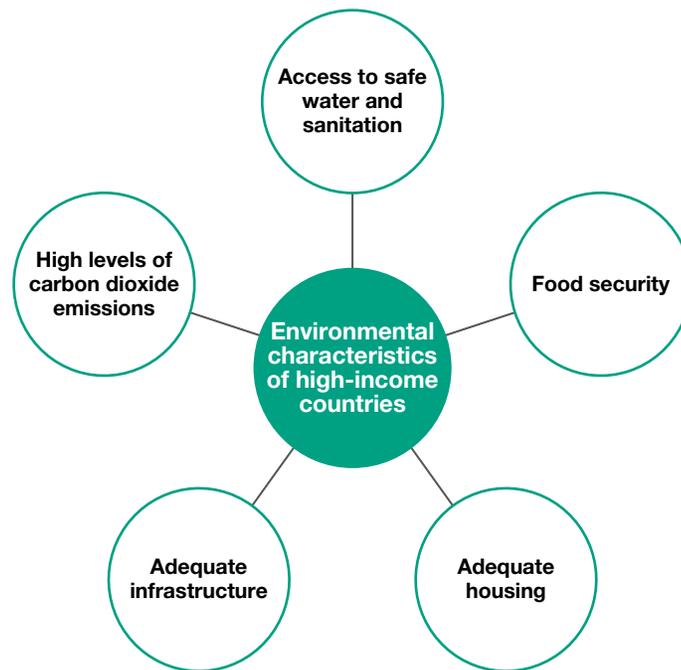


FIGURE 8.13 Environmental characteristics common among high-income countries.



Safe water and sanitation

Safe water and sanitation are characteristics of high-income and many middle-income countries. Access to safe water and sanitation is responsible for a large proportion of the variations in health and wellbeing between the three groups and will be explored in more detail later.

Food security

People in high-income countries generally have access to a quality food supply. Those in low-income countries, however, often lack food security. Natural disasters, such as floods and droughts, tend to have a more pronounced impact on the availability of food for those in low-income countries, as they lack the financial resources to purchase food in emergency situations.

Adequate housing

Compared to high-income countries, many people in low- and middle-income countries lack access to adequate housing. They often live in substandard housing with poor ventilation, lack of heating and cooling, poor resistance to infestation of disease-carrying organisms such as insects, lack of cooking facilities and running water, and poor protection from the elements. In many low- and middle-income countries, **urban slums** are also a common feature of cities compared to high-income countries.

Adequate infrastructure

Infrastructure is responsible for many differences between high-, middle- and low-income countries. High-income countries usually have adequate roads and transport systems, piped water, sewerage systems, electricity grids and telecommunication systems. People living in low- and middle-income countries often lack access to such facilities, especially in rural and remote areas and urban slums.

Urban slums a settlement, neighbourhood or region comprised of housing that does not provide the essential conditions required to live a healthy life

FIGURE 8.14 Urban slums are common in low-income countries.



Levels of carbon dioxide emissions

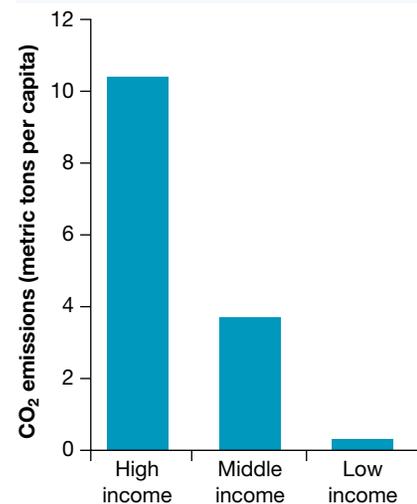
Due to the range of industries in high-income countries, these countries emit greater amounts of carbon dioxide (CO₂) per person into the atmosphere (see **FIGURE 8.16**). Carbon dioxide emissions have been linked to climate change and the associated effects on sea levels and changing weather patterns. Low- and middle-income countries are often the most affected by climate change as they lack the economic resources to effectively deal with the associated impacts.

The economic, social and environmental characteristics of high-, middle- and low-income countries contribute significantly to the differences in health status experienced in each type of country. Many of these factors and their relationships to health status will be explored in more detail later in this topic.

FIGURE 8.15 Adequate infrastructure in high-income countries contributes to resources such as a reliable electricity supply and adequate public transport systems.



FIGURE 8.16 Carbon dioxide emissions in high-, middle- and low-income countries



Source: Adapted from: <http://data.worldbank.org/indicator/EN.ATM.CO2E.PC>

EXAM TIP

Middle-income countries are often in the process of transitioning from low- to high-income and therefore share a range of characteristics common to both low- and high-income countries. For example, most middle-income countries have a proportion of residents living in poverty and a proportion with high average incomes. As a result, discussions about these countries should reflect both the positive and negative aspects of high- and low-income countries. For example, if discussing levels of education in middle-income countries, an answer could include that education levels are generally increasing and many people have sufficient access to education, however, there is still a significant proportion lacking access to adequate educational opportunities.

8.3 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

8.3 Quick quiz on	8.3 Exercise	8.3 Exam questions
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Select your pathway

■ LEVEL 1
1, 2, 5

■ LEVEL 2
3, 4, 6, 7, 9

■ LEVEL 3
8

Test your knowledge

1. Discuss three social characteristics of middle-income countries.
2. Discuss three environmental characteristics of high-income countries.
3. a. Explain what is meant by gender equality.
b. Explain two ways that gender equality can assist in reducing poverty in low-income countries.
4. Explain two ways that technology can assist a country in transitioning from low income to middle income.
5. Identify the factors that contribute to the difference in birth rates between high- and low-income countries.
6. Outline reasons for differences in the level of education experienced in high- and middle-income countries.

Apply your knowledge

7. Use data from subtopic 8.3 to compare the following between high- middle- and low-income countries:
 - a. birth rates
 - b. population growth
 - c. carbon dioxide emissions.
8. Outline two ways that economic, social and environmental characteristics in low-income countries are related. Ensure you include a reference to one economic, one social and one environmental characteristic in each response.
9. Draw a concept map that summarises the economic, social and environmental characteristics that are common among high-income countries.

8.3 Quick quiz on	8.3 Exercise	8.3 Exam questions
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Question 1 (2 marks)

Source: VCE 2019, Health and Human Development Exam, Q.6; © VCAA

According to the United Nations Development Programme's Human Development Report, in 2017 Australia had a Human Development Index (HDI) of 0.939, while Papua New Guinea had an HDI of 0.544. The World Bank classifies Australia as a high-income country and Papua New Guinea as a middle-income country.

Outline two characteristics, other than HDI, that could be used to classify countries as either high-income or middle-income countries.

Question 2 (2 marks)

List two environmental characteristics of a high-income country.

Question 3 (2 marks)

In the last decade, Country X has shown the following improvements:

- access to sanitation has improved, particularly in urban areas
- birth rates have steadily decreased
- growth of industries, particularly in the electronics and communication fields
- the introduction of social housing and a universal health scheme has been established
- increase in living standards, with very few families living on less than US\$1.90 per day
- construction and redevelopment of major roads and rail systems.

From the information above, **identify** two social characteristics relevant to Country X.

Question 4 (2 marks)

List two social characteristics of a high-income country.

Question 5 (2 marks)

Identify two environmental characteristics of a low- or middle-income country.

More exam questions are available in your learnON title.

8.4 Similarities and differences in health status and burden of disease in low-, middle- and high-income countries

► **KEY CONCEPT** Understanding the similarities and differences in health status and burden of disease in low-, middle- and high-income countries

To make detailed judgements about the level of health status and burden of disease experienced in different countries, key indicators such as life expectancy, mortality, morbidity and burden of disease provide valuable data.

There are more than 200 countries in the world and health status varies considerably. All graphs and tables will show the data relating to the global average, Australia and the World Bank income groups (including upper and lower middle-income countries where possible). When exploring data relating to each type of country, remember that there are variations within and between countries in each income group.

EXAM TIP

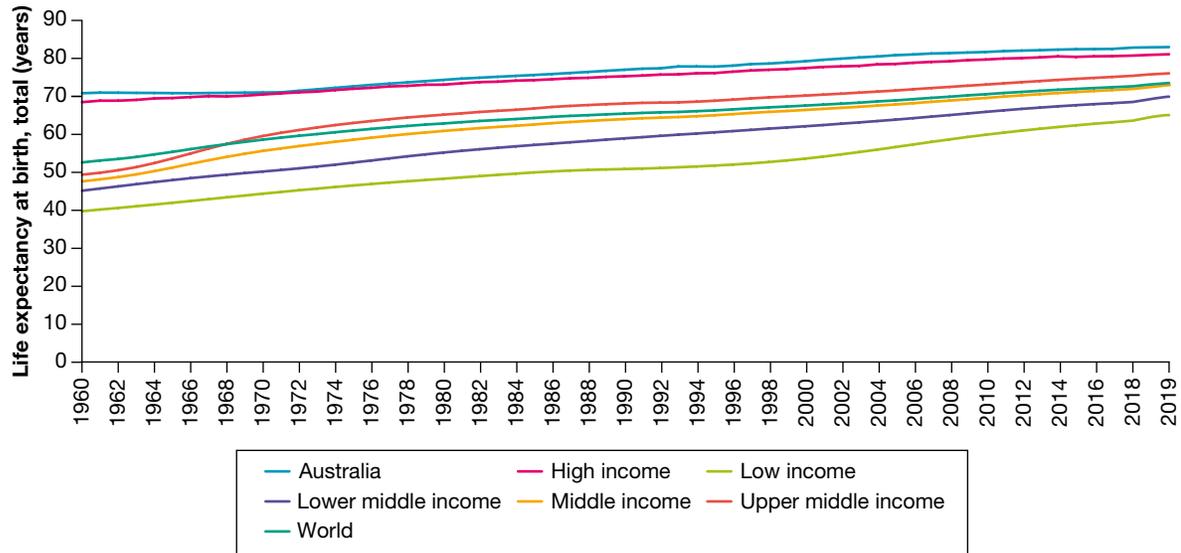
It is important to take note of both similarities and differences when exploring health status and burden of disease in low-, middle- and high-income countries. The differences are often obvious and are reflected in variations in life expectancy and rates of communicable diseases, mortality and DALY. Similarities may be less obvious but include similarities in relation to increasing life expectancy, decreasing under-five and maternal mortality rates and increasing rates of obesity and associated conditions in many countries.

8.4.1 Life expectancy

Life expectancy has increased in most countries over time (see **FIGURE 8.17**). Globally, life expectancy has more than doubled since 1900, with the most significant gains being achieved since 2000.

However, there are occasionally fluctuations in life expectancy within countries. For example, war, conflict and the spread of infectious diseases can have a significant impact on life expectancy in a relatively short period of time. Low- and middle-income countries are more susceptible to such issues and generally experience more severe fluctuations in life expectancy than high-income countries such as Australia. Many African countries, for example, experienced a significant decrease in life expectancy in the 1990s due to the AIDS epidemic.

FIGURE 8.17 Life expectancy at birth over time — globally, in Australia and in the World Bank income groups

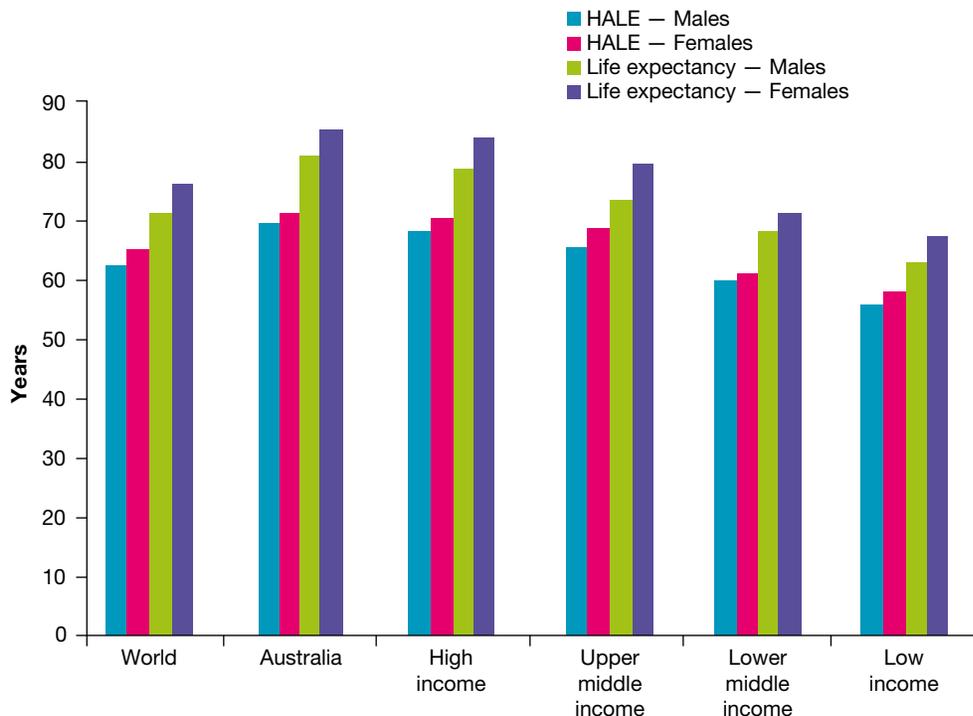


Source: Adapted from: <http://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=XD&view=chart>

The life expectancy and health-adjusted life expectancy (HALE) of the World Bank income groups in 2019 are shown in **FIGURE 8.18**. It can be seen that the lower the average income of the country, the lower the life expectancy and HALE. Although life expectancy and HALE decrease with level of income, a similarity in life expectancy across high-, middle- and low-income countries is that female life expectancy and HALE is higher than those of males. On average, women live longer than men in every country in the world. Overall, female life expectancy is 75.6 years and male life expectancy is 70.5 years. Globally, female life expectancy at birth passed male life expectancy at birth in the 1970s and in 2019, the difference reached around five years.

int-8517

FIGURE 8.18 Health-adjusted life expectancy (HALE) and life expectancy for males and females — globally, in Australia and in the World Bank income groups, 2019



Source: <https://vizhub.healthdata.org/gbd-compare/>, 2021

8.4.2 Mortality and morbidity

There are huge differences in mortality rates between countries with different income levels. Many factors account for these differences and these will be discussed in detail later. Mortality and morbidity rates give valuable information not only about the causes of death and illness, but about the resources that might be employed to close the gap between high-, middle- and low-income countries.

Child mortality and morbidity

The under-five mortality rate (U5MR) is one of the most important indicators of the level of health and wellbeing experienced in a country. The survival of a child is reliant on numerous factors. U5MR reports the number of deaths that occur in children under five years of age (per 1000 live births), and is a reflection of the:

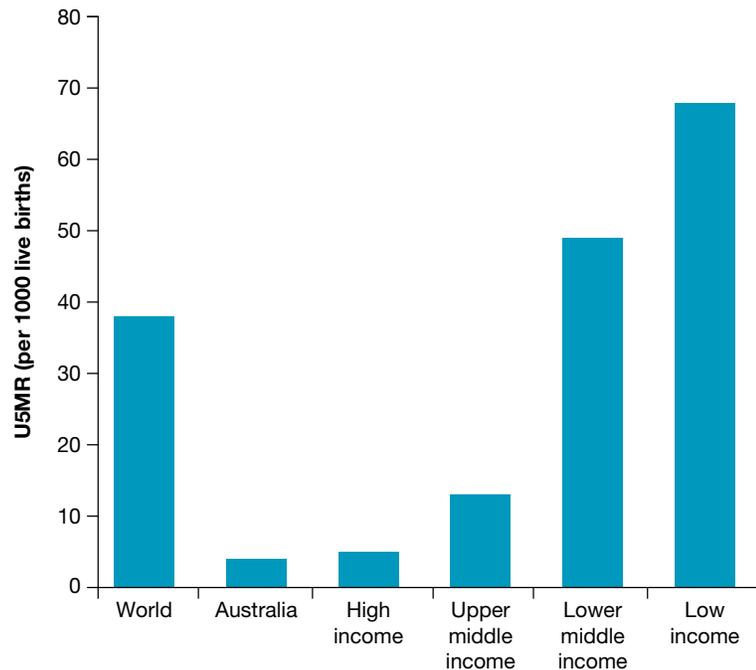
- nutritional and health status of mothers
- health literacy of mothers
- level of immunisation available
- availability of maternal and child health services
- income and food availability in the family
- availability of clean water and safe sanitation
- overall safety of the child's environment.

The U5MR varies considerably around the world but has improved in most countries over time. Low-income — and, to a lesser extent, middle-income — countries experience a higher U5MR than that in high-income countries like Australia (see **FIGURE 8.19**).

Undernutrition is an underlying factor contributing to the high rates of morbidity and mortality experienced in low- and middle-income countries. Children who are undernourished have an underdeveloped immune system and struggle to fight off disease as effectively as those who are adequately nourished. As a result, **communicable diseases** (such as diarrhoeal diseases, **malaria**, **human immunodeficiency virus (HIV)**) and **acquired immune deficiency syndrome (AIDS)**, which cause few deaths in Australia have a huge impact on mortality figures in low- and middle-income countries (see **TABLE 8.2**).

Australian children are more likely to experience mortality and morbidity due to congenital malformations, premature births and accidental causes such as injuries and poisoning.

FIGURE 8.19 Under-five mortality rate (U5MR) — globally, in Australia and in the World Bank income groups, 2019



Source: Adapted from: <http://data.worldbank.org/indicator/SH.DYN.MORT?> page=4

Communicable diseases

infectious diseases that are transmitted from the environment; including through air, water, food and other infected organisms (including other humans)

Malaria a communicable disease that is transmitted via infected mosquitoes

Human immunodeficiency virus (HIV) an infection that results in the gradual depletion and weakening of the immune system, resulting in increased susceptibility to other infections such as pneumonia and tuberculosis

Acquired immune deficiency syndrome (AIDS) the most advanced stage of HIV infection

TABLE 8.2 Under-five mortality rates for selected conditions, per 100 000, 2019

	Diarrhoeal	HIV/AIDS	Malaria	Injuries	Prematurity	Birth asphyxia and birth trauma	Congenital malformations
World	75.5	7.38	53.8	31.5	100.1	85.5	71.5
Australia	0.28	0.042	0	6.1	12.6	10.7	18.7
High income	0.48	0.17	0	9.3	21.2	6.7	24.5
Upper middle income	6.7	3	0.45	23	46.1	22.5	51.7
Lower middle income	95.7	6.6	49.2	31.6	129.6	112.4	76
Low income	168.7	20.7	181	57.2	135	152.3	115.8

Source: <https://vizhub.healthdata.org/gbd-compare/>, 2021

Since 1990, the global rate and number of child deaths have been reduced by more than half. Despite this progress, an estimated 5.2 million children under the age of five died in 2019, equivalent to more than 10 every minute. Around 99 per cent of these deaths occurred in low- and middle-income countries. As a result, the causes of childhood deaths in these countries are prominent when examining global figures.

Adult mortality and morbidity

Child mortality and morbidity patterns provide a valuable indicator of the overall health and wellbeing of a country. However, some countries experience low child mortality but high levels of adult mortality. This can be due to the impact of lifestyle factors such as tobacco smoking, excessive alcohol consumption and unsafe practices leading to HIV/AIDS, such as engaging in unprotected sex and illicit drug use involving sharing needles. To ignore adult mortality and morbidity figures would be to ignore an aspect of health status that requires attention in many low-, middle- and high-income countries.

Premature mortality among adults generally increases as average incomes decrease. **FIGURE 8.21** shows the proportion of people who can expect to live to age 65 globally, in Australia and in each of the four income groups. As with child mortality and morbidity, the causes of mortality and morbidity for adults differ depending on the level of income.

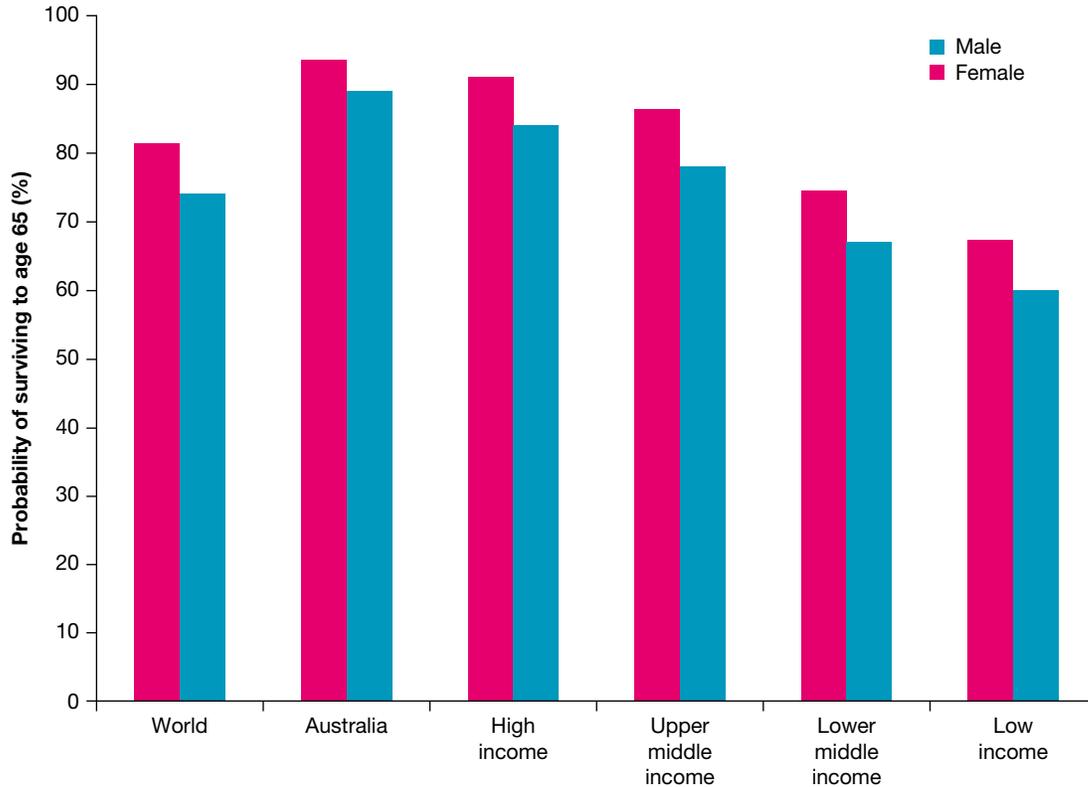
Although communicable diseases such as HIV/AIDS, tuberculosis and influenza contribute to significant differences in morbidity and mortality rates between adults in high-, middle- and low-income countries, **non-communicable diseases**, such as cancer, heart disease and type 2 diabetes, are also high in countries with lower incomes (see **FIGURE 8.22**) and have increased in line with increasing life expectancies and rising rates of obesity. This creates a ‘**double burden of disease**’ in many countries. It puts an added strain on the relatively basic healthcare available and contributes to poorer health status. When adults in a family become ill, the children may have to take care of the adults and themselves. This adds to the cycle of poverty and ill health.

FIGURE 8.20 Deaths due to diseases like malaria are uncommon in Australia because of adequate healthcare and good nutrition. Children contracting infectious disease in low- and middle-income countries are not always as fortunate.



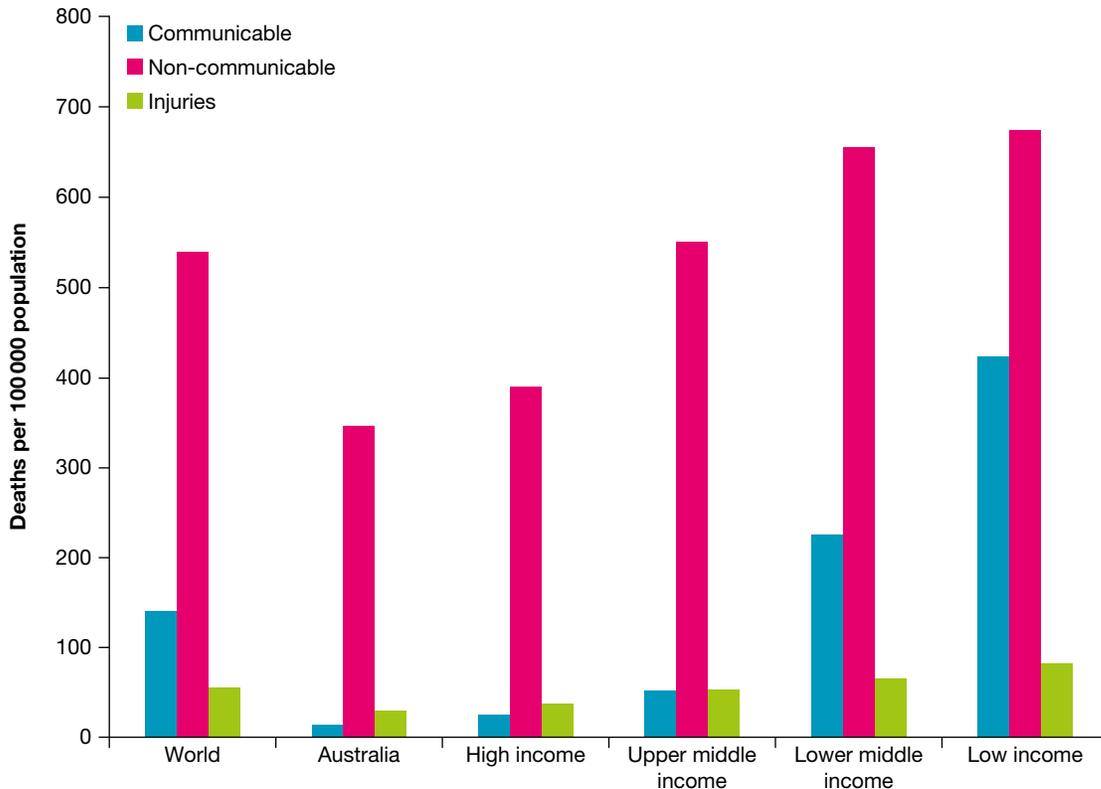
Non-communicable diseases conditions that are usually long-lasting and generally progress slowly. Non-communicable diseases are not spread through the environment and include cardiovascular disease, cancer, respiratory diseases and diabetes. **Double burden of disease** when conditions associated with both poverty and wealth exist side-by-side in one community, such as undernutrition and obesity

FIGURE 8.21 Proportion of the population that can expect to live to age 65 (%), males and females, 2019



Source: Adapted from: <http://data.worldbank.org/indicator/SP.DYN.TO65.FE.ZS?locations=XM&view=chart>

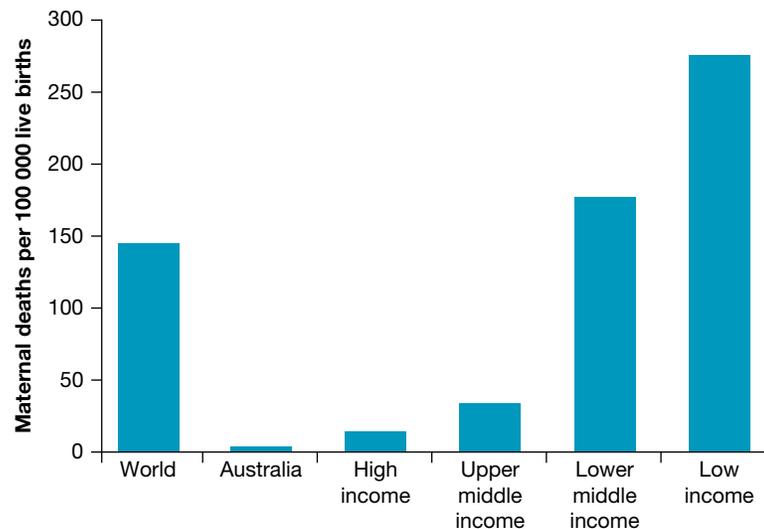
FIGURE 8.22 Mortality rates for broad disease and injury groups — globally, in Australia and in the World Bank income groups, 2019



Source: Adapted from: <http://vizhub.healthdata.org/gbd-compare>

Other causes of mortality and morbidity for people in low- and middle-income countries include those associated with pregnancy and childbirth, with maternal mortality rates being high compared to those in Australia (see **FIGURE 8.23**). Many of the problems that pregnant women face in low- and some middle-income countries are associated with the birthing procedure and lack of sufficient and available healthcare; this is a problem not often faced in Australia.

FIGURE 8.23 Maternal mortality ratio (per 100 000 live births), 2019



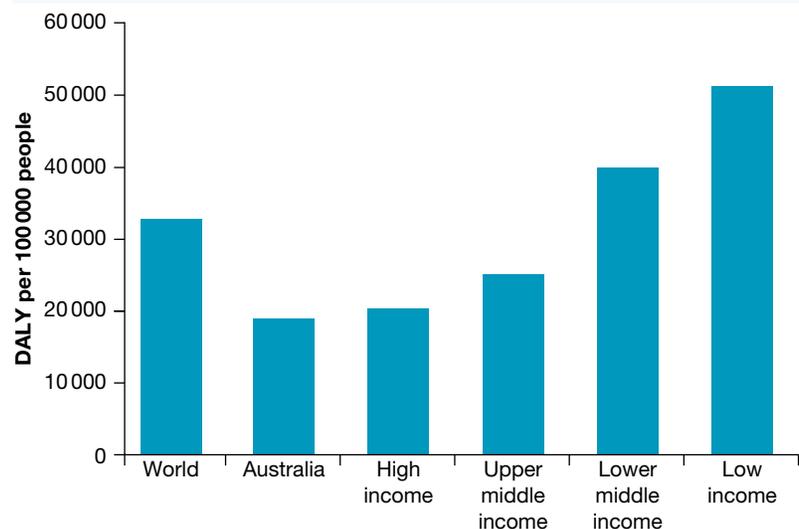
Source: Adapted from: <http://data.worldbank.org/indicator/SH.STA.MMRT?locations=RU>

8.4.3 Burden of disease

As discussed earlier, the rates of communicable diseases, non-communicable diseases and injuries are higher in middle- and particularly low-income countries when compared to high-income countries like Australia, contributing to higher rates of morbidity and mortality. As a result, low- and middle-income countries experience a greater burden of disease and higher rates of DALY compared to Australia (see **FIGURE 8.24**).

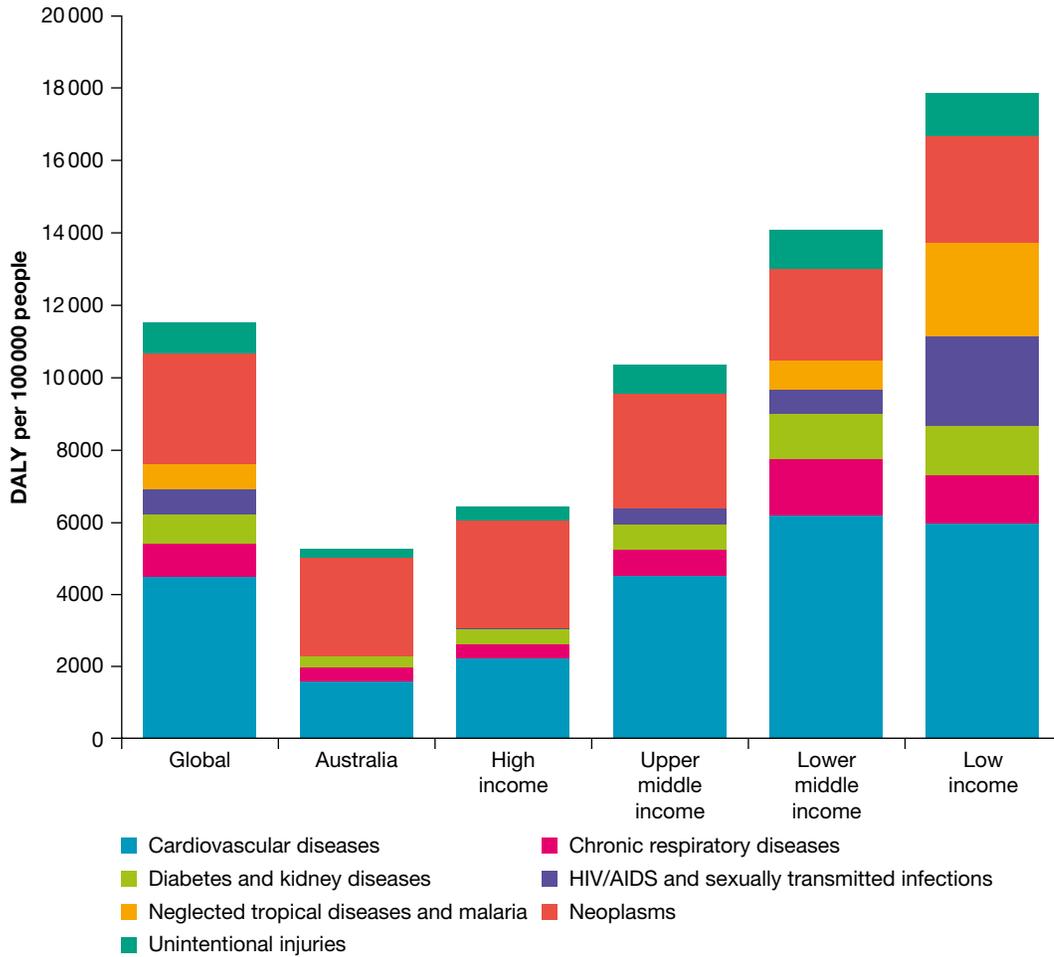
Years of life lost (YLL) rates for most causes are higher in low- and middle-income countries than in high-income countries, including Australia. Australia's well-developed health system means that many conditions that can cause premature death are often effectively treated, and this can extend life expectancy and reduce the rate of YLL that otherwise might have occurred. Treatment options are often limited in low- and middle-income countries, which can increase the risk of premature death and result in a higher rate of YLL (see **FIGURE 8.25**).

FIGURE 8.24 DALY per 100 000 people, 2019



Source: Adapted from: <http://vizhub.healthdata.org/gbd-compare>

FIGURE 8.25 YLL rate in selected groups and Australia due to selected causes, 2019



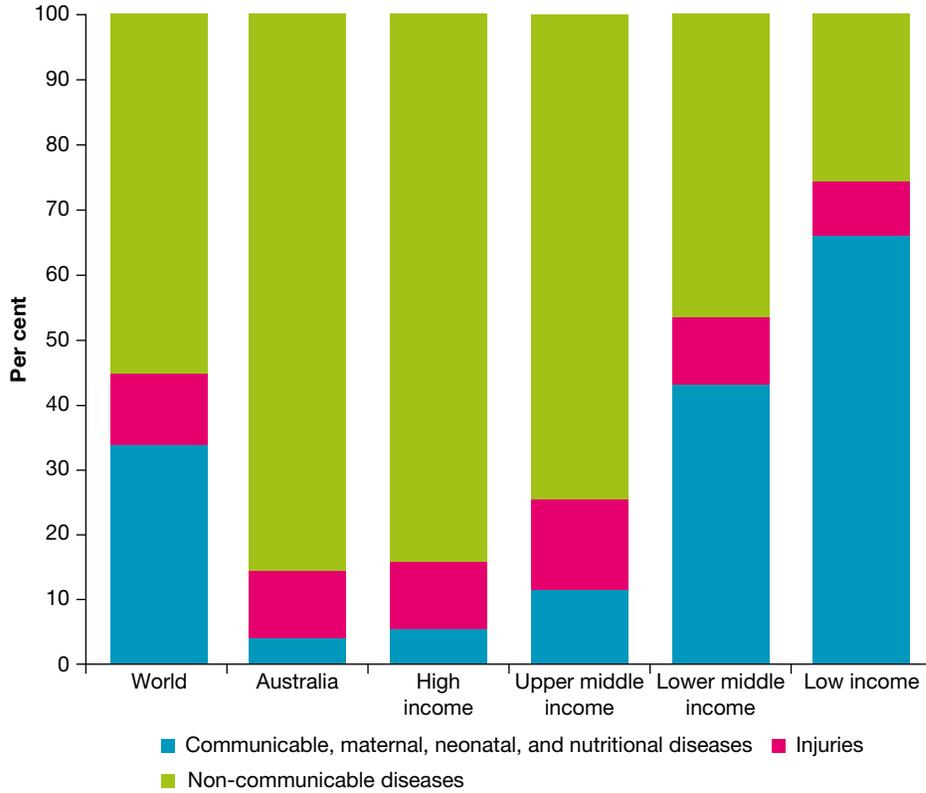
Source: <https://vizhub.healthdata.org/gbd-compare/>

When examining the proportion of total YLL contributed by non-communicable diseases such as cancer and cardiovascular disease, it can be seen that these conditions cause a higher proportion of YLL in Australia than in low-income countries (see **FIGURE 8.26**). It is important to remember, however, that overall YLL rates are significantly higher in low- and middle-income countries. As a result, most low- and middle-income countries still experience greater rates of YLL due to non-communicable diseases than Australia, but communicable diseases contribute even more YLL and therefore represent a greater proportion of the total.

Being able to treat many conditions in Australia can reduce the rate of YLL but often increases the rate of years lost due to disability (YLD) as people live with a range of diseases for long periods. In low- and middle-income countries, diseases are more likely to cause death, and this contributes to the higher rate of YLL in these countries compared to Australia.

The rate of YLD generally increases with life expectancy. When people live longer, they are more likely to experience chronic non-communicable conditions such as cardiovascular disease, cancer, musculoskeletal conditions including arthritis and osteoporosis, respiratory diseases, and neurological conditions such as dementia. As a result of this relationship, the rate of non-communicable diseases has increased in many low- and middle-income countries over time, but has not yet reached the level experienced in Australia because there is still a significant gap in life expectancy between the three types of countries.

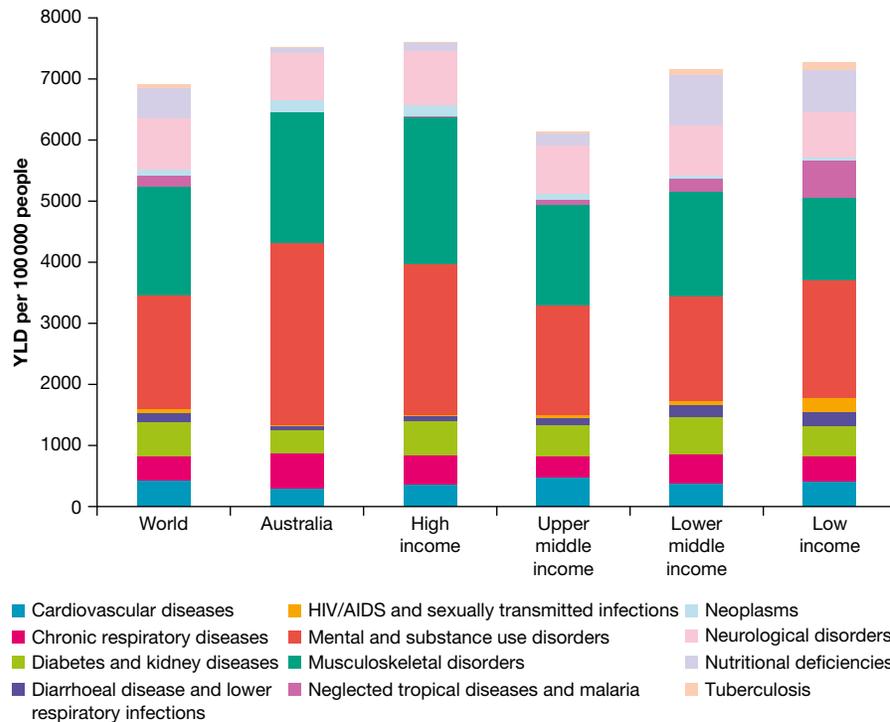
FIGURE 8.26 Years of life lost to certain conditions as a percentage of the total years of life lost, 2019



Source: <https://vizhub.healthdata.org/gbd-compare/>

FIGURE 8.27 shows the rate of YLD due to selected conditions in Australia compared to countries in selected income groups.

FIGURE 8.27 YLD rate in selected groups and Australia due to selected causes, 2019



Source: <https://vizhub.healthdata.org/gbd-compare/>

EXAM TIP

When comparing health status or burden of disease of two income groups, it is important to mention both groups in your response. Making reference to only one group does not demonstrate a comparison and will not receive full marks.

As explored in this subtopic, there are many similarities and differences that exist between income groups and these are summarised in **TABLE 8.3**.

TABLE 8.3 Similarities and differences in low-, middle- and high-income countries

Similarities	Differences
Considerable variations exist within each country, regardless of income group.	Life expectancy generally fluctuates more in low- and middle-income countries compared to high-income countries.
Life expectancy is increasing in all income groups.	Life expectancy is considerably higher in high-income countries compared to low-income countries (and to a lesser extent, middle-income countries).
Infant, under 5 and maternal mortality rates are decreasing in all income groups.	Mortality rates (including infant, under 5 and maternal) increase as average income decreases.
Non-communicable diseases (including cancer and cardiovascular disease) account for the greatest proportion of deaths in all countries.	Mortality rates due to infectious diseases (including HIV, malaria, tuberculosis and water-borne diseases) are considerably higher in low-income countries.
Rates of obesity and associated conditions are increasing in all income groups.	Many middle-income countries and some low-income countries experience a double burden of disease, in which conditions associated with under- and over-nutrition occur simultaneously.
	The rate of YLD increases as average income increases.
	The rate of DALY and YLL increase as average income decreases.

8.4 Activities

1. Access the **HIV/AIDS** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **Malaria** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

-  **Digital documents** HIV/AIDS worksheet (doc-32222)
Malaria worksheet (doc-32216)
-  **Weblinks** HIV/AIDS
Malaria

8.4 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

8.4 Quick quiz



8.4 Exercise

8.4 Exam questions

Select your pathway

■ LEVEL 1

2, 5

■ LEVEL 2

1, 3, 4, 6, 7, 8, 12, 13

■ LEVEL 3

9, 10, 11, 14

Test your knowledge

1. Using data, outline the general global trend in life expectancy since 1900.
2. Identify one similarity and one difference in life expectancy among the income groups shown in **FIGURE 8.17**.
3. Compare Australia's life expectancy and health-adjusted life expectancy to low- and middle-income countries.
4. Using data, outline the trend among the income groups evident in **FIGURE 8.19**.
5. What are the leading causes of mortality in low- and middle-income countries compared to Australia?
6. Explain why undernutrition is an underlying factor in many causes of mortality and morbidity in low- and middle-income countries.
7. Identify one difference and one similarity in mortality rates from non-communicable diseases between Australia and low-income countries from **FIGURE 8.22**.

Apply your knowledge

8. Suggest two reasons for the differences in U5MR experienced by low- and middle-income countries when compared to Australia.
9. Why do you think non-communicable diseases don't receive a lot of attention in low-income countries, where rates are often higher than in Australia?
10. Suggest reasons why communicable diseases are more common and often spread further in low- and middle-income countries compared with Australia.
11. **a.** Outline the relationship between average income and rate of DALY as shown in **FIGURE 8.24**.
b. Explain two reasons why this relationship exists.
12. Discuss differences in rates of YLL between Australia and low- and middle-income countries shown in **FIGURE 8.25**.
13. Identify one similarity and one difference between Australia and low-income countries as shown in **FIGURE 8.26**.
14. Explain why the rate of YLD may be lower in upper middle-income countries compared to Australia as shown in **FIGURE 8.27**.

8.4 Quick quiz



8.4 Exercise

8.4 Exam questions

Question 1 (1 mark)

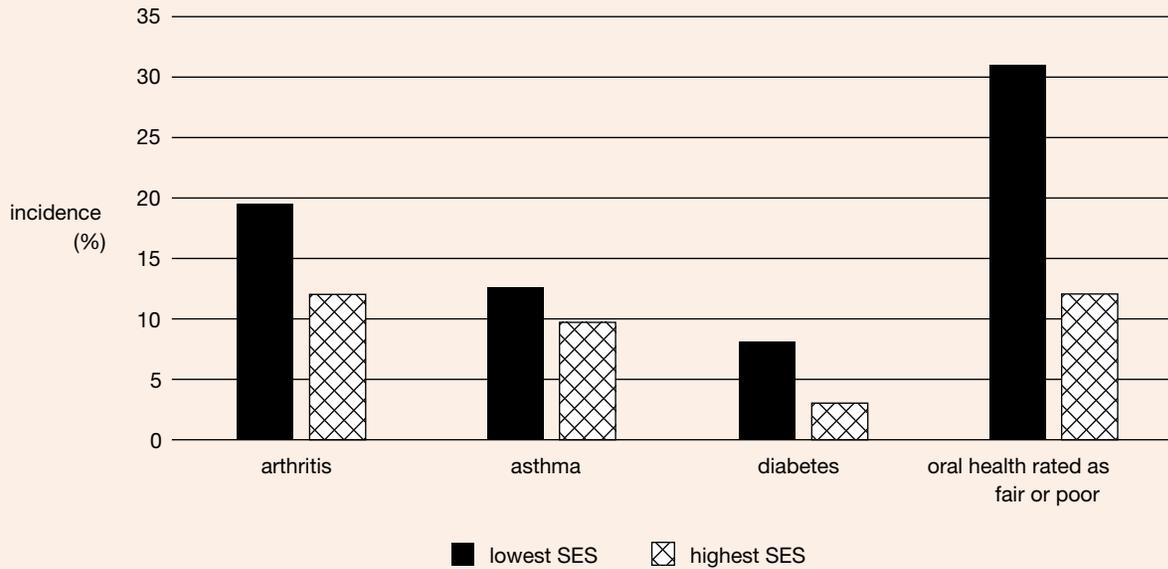
Source: VCE 2017, *Health and Human Development Exam*, Q.9.a (adapted); © VCAA

The graph shows the percentage of deaths that were attributed to high blood glucose levels for males and females aged 20–69 years according to country income group in 2012.

In **which** country income group is the percentage of high blood glucose deaths the highest for males?



Inequalities in selected chronic diseases



Question 2 (2 marks)

Source: VCE 2015, Health and Human Development Exam, Q.9.a; © VCAA

Indicators of health status for a range of countries

Country	Human Development Index* (2013)	Life expectancy at birth* (2013)	Under-five mortality rate (per 1000 live births)* (2013)	Maternal mortality ratio (deaths per 100 000 live births)† (2013)	Births attended by skilled personnel (%)‡
Australia	0.933	82.5	5	6	99.1
Turkey	0.759	75.3	14	20	91.3
Chad	0.375	51.2	150	980	16.6

Data: *United Nations Development Programme, 'Human Development Reports'

† The World Bank, maternal mortality ratio data

‡ World Health Organization, 'Global Health Observatory Data Repository'

** Australia 2009, Turkey 2008, Chad 2010

Using data from the table, **describe** the health status of Australia compared to Chad.

Question 3 (4 marks)

Comparison of key indicators for high-, middle- and low-income countries

Country	Income classification	Life expectancy at birth (years) (2015)	Adult mortality rate per 1000 (2012)	Under-5 mortality rate per 1000 (2015)
Australia	High-income country	83	59	4
China	Upper middle-income country	75	85	13
Papua New Guinea	Lower middle-income country	62	275	61
Zimbabwe	Low-income country	58	336	89

Source: Adapted from: www.who.int

Using data from the table, **describe** two differences in health status between a low-income country and a high-income country.

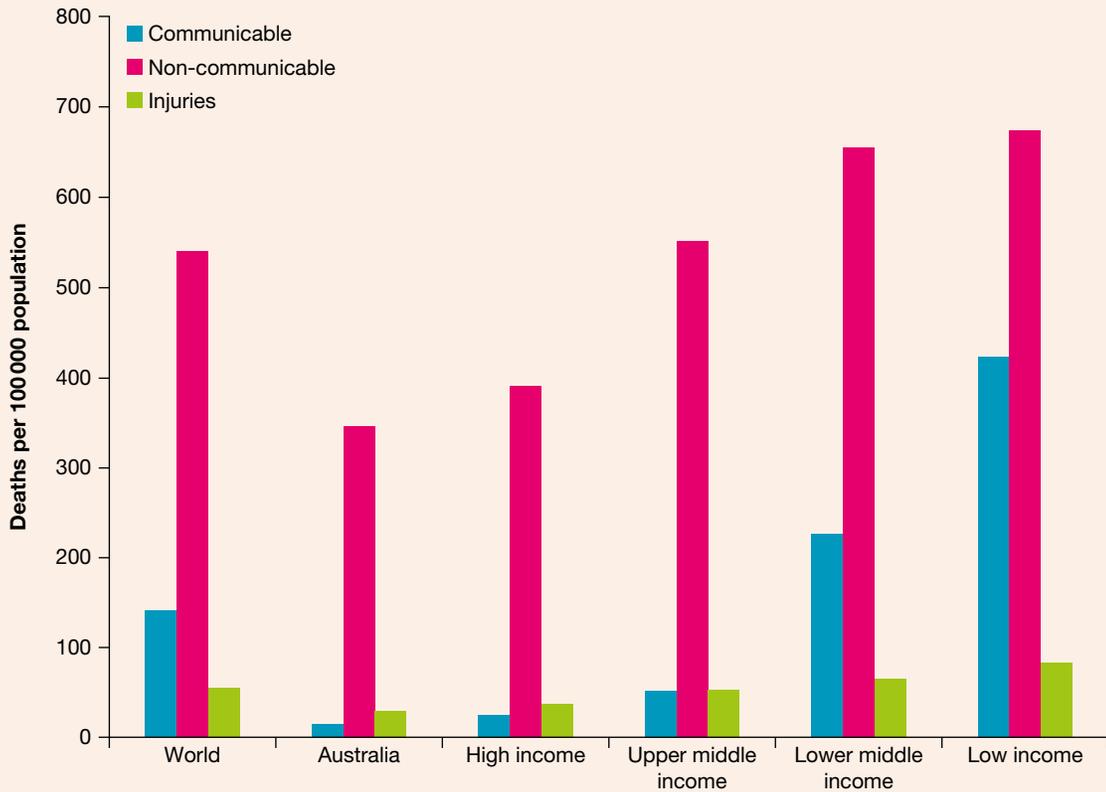
Question 4 (2 marks)

Give two reasons **why** the under-5 mortality rate in Australia is low.

Question 5 (2 marks)

Identify two similarities in mortality rates between low-, middle- and high-income countries.

Mortality rates for selected countries – globally, in Australia and in the World Bank income groups, 2015



Source: Adapted from <http://vizhub.healthdata.org/gbd-compare>

More exam questions are available in your learnON title.

8.5 Access to safe water and sanitation as factors affecting health status and burden of disease

KEY CONCEPT Understanding how access to safe water and sanitation contribute to similarities and differences in health status and burden of disease

There are many factors that contribute to the similarities and differences in health status and burden of disease experienced in high-, middle- and low-income countries. An understanding of these factors is essential in reducing the inequalities that exist globally.

Although each factor will be considered separately, it is often a combination of factors that impacts on health status and burden of disease. The factors shown in **FIGURE 8.28** will be examined in the rest of this topic.

Safe water and sanitation data are often considered together, but the impact of each of these factors will be explored separately where possible.

Unfortunately, many communities that lack access to safe water also suffer from lack of sanitation systems, and this contributes to lower health status and increased burden of disease. People living in rural and remote areas are often more likely to experience lack of access to safe water and sanitation because the infrastructure required to provide these resources is often unavailable.

8.5.1 Access to safe water

Sometimes referred to as ‘clean water’, safe water refers to water that is not contaminated with disease-causing pathogens such as bacteria and viruses, or chemicals such as lead and mercury. Safe water is required for a number of purposes, including:

- consumption — the human body consists of between 55 per cent and 75 per cent water. Water is a significant component of many body tissues and is essential for the optimal functioning of every cell in the body. The average adult loses around 2.5 to 3 litres per day and, as the body can’t store water for later use, it must be consumed regularly to ensure survival.
- food preparation and cooking — clean water is essential to wash food products and remove harmful pathogens that could otherwise lead to illness. Cooking often requires clean water to ensure food items are safe for human consumption.
- washing and hygiene — clean water is required to maintain high levels of personal hygiene and prevents infection through handwashing, bathing and showering.
- agriculture and production — clean water is required for the production of food and other products such as clothing and electricity.

How safe water affects health status and burden of disease

The average person requires a minimum of around 50 litres of safe water per day to survive, so a reliable and clean source of water is essential for every human.

In 2017, 2.2 billion people globally, or one in three people, did not have access to clean water in their home, that was free from contamination and available when needed. This deficit is responsible for around 3 per cent of total global DALY and just over 1.2 million deaths. A vast majority of the impact is experienced in low- and lower middle-income countries (see **FIGURE 8.30**).

FIGURE 8.28 Factors that contribute to similarities and differences in health status and burden of disease globally



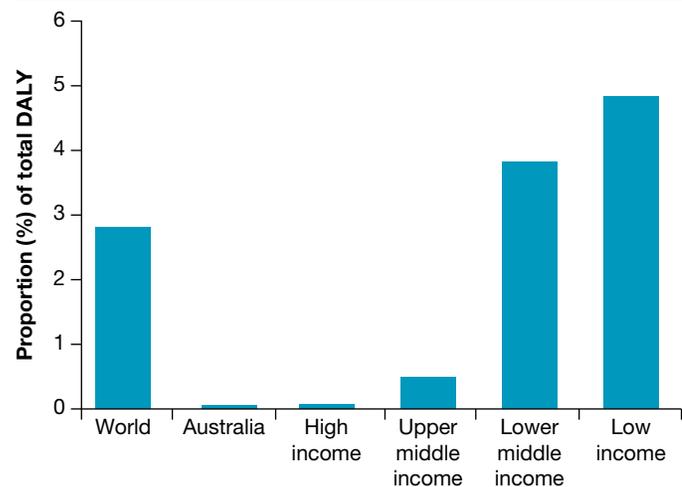
FIGURE 8.29 Safe water is essential for human survival.



Australia has a well-established and reliable water supply, although interruptions to this supply are sometimes experienced in some remote Aboriginal and Torres Strait Islander communities and as a result of natural disasters such as floods. However, emergency provisions can generally be supplied when clean tap water is unavailable.

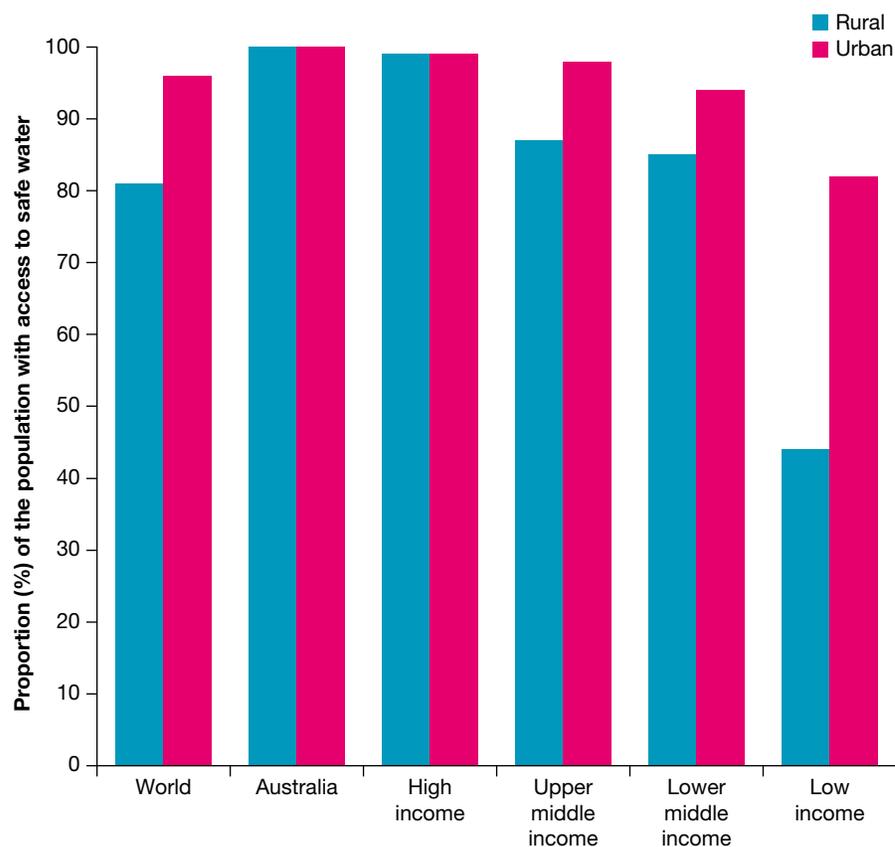
People in low- and middle-income countries are at greater risk of the effects of unsafe water as they are less likely to have the infrastructure to supply clean drinking water effectively, especially if they live in rural and remote areas (see **FIGURE 8.31**). Governments of these countries often lack strict controls on water quality and monitoring, or the money to provide clean water to those who need it.

FIGURE 8.30 Proportion of total DALY attributable to lack of access to safe water



Source: Adapted from: <http://vizhub.healthdata.org/gbd-compare>

FIGURE 8.31 Proportion of urban and rural populations with access to safe water (%), 2017



Source: Adapted from: <http://data.worldbank.org/indicator/SH.H2O.SAFE.UR.ZS>

Many diseases, including gastroenteritis, diarrhoea, dysentery and cholera, are waterborne and transmit easily from the water source to the individual. Children are particularly susceptible to the impacts of unsafe water as they are likely to experience repeated infection and account for a high proportion of total deaths from water-related causes, including the following:

- Diarrhoea causes 1.1 million preventable child deaths per year, nearly all in low- and middle-income countries. Diarrhoea can be caused by drinking unsafe water. Bacteria and other microbes present in the

water cause disease and illness such as cholera and dysentery. As the body dehydrates because of the diarrhoea, more water is consumed to relieve thirst, creating an often deadly cycle.

- Undernutrition causes 450 000 preventable child deaths per year, with most of these deaths occurring in low- and middle-income countries. Many cases of undernutrition are compounded by repeated bouts of diarrhoea and infections. This reduces the efficient functioning of the immune system, making the individual more susceptible to secondary infections and, in many cases, death.

Lack of access to safe water contributes to hundreds of millions of missed school days each year through a combination of ill health and time spent collecting water, which reduces levels of education and the potential to earn a decent income in the future. This contributes to a cycle of poverty that is responsible for many of the differences in burden of disease between high-, middle- and low-income countries.

In communities where water is not available, it is often women who have to trek long distances to collect water and then carry it back. They may have to make this trip many times in one day. This reduces their ability to look after their children and pursue education or paid employment, and contributes significantly to the development of physical ailments such as musculoskeletal conditions. According to the World Health Organization, women and children spend 125 million hours every day collecting water, which translates to \$24 billion in lost economic benefits each year. This contributes to the difference in burden of disease in low- and middle-income countries by affecting the economy and reducing the capacity of governments to provide resources such as healthcare, and this in turn increases the rate of morbidity, mortality and the number of DALY experienced.

Stagnant water (i.e. water without a current or flow) is required for malaria-carrying mosquitoes and many disease-causing bacteria to breed, and uncontrolled watercourses such as swamps and dams can provide perfect conditions for these organisms to reproduce. These conditions are also significant contributors to the differences in burden of disease between high-, middle- and low-income countries.

FIGURE 8.32 Unsafe water is a leading cause of death globally, yet is not a significant issue in most high-income countries, including Australia.



8.5.2 Access to sanitation

Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces, but can also refer to the maintenance of hygienic conditions through services such as garbage collection and wastewater disposal. Adequate sanitation requires a flushing toilet or covered **latrine** and the hygienic removal or containment of the waste products.

Globally more than 2 billion, or one in four, people lack access to basic sanitation. Almost 700 million of these people defecate in the open, for example in street gutters, behind bushes or into open bodies of water. This waste often seeps into water sources and contaminates the water that people will eventually consume.

Latrine a simple communal toilet facility, often a trench dug in the ground or a pit

FIGURE 8.33 People queue to use a toilet in Nigeria.



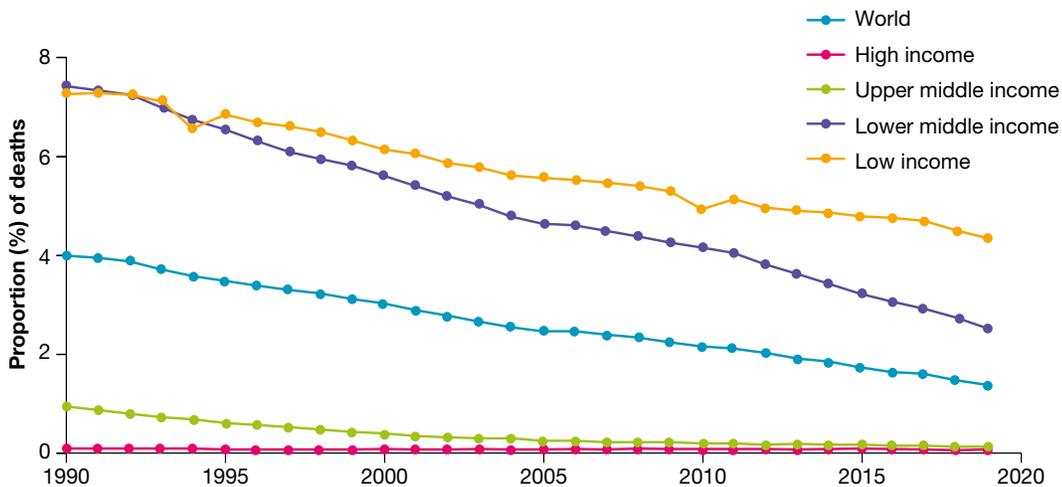
FIGURE 8.34 Many people lack access to adequate sanitation and are forced to relieve themselves into water courses, which can contaminate drinking water supplies.



How sanitation affects health status and burden of disease

In 2019, lack of sanitation contributed to more than 750 000 deaths, or around 2 per cent of all deaths globally (see **FIGURE 8.35**).

FIGURE 8.35 Proportion of total deaths attributable to lack of adequate sanitation



Source: Adapted from: <http://vizhub.healthdata.org/gbd-compare>

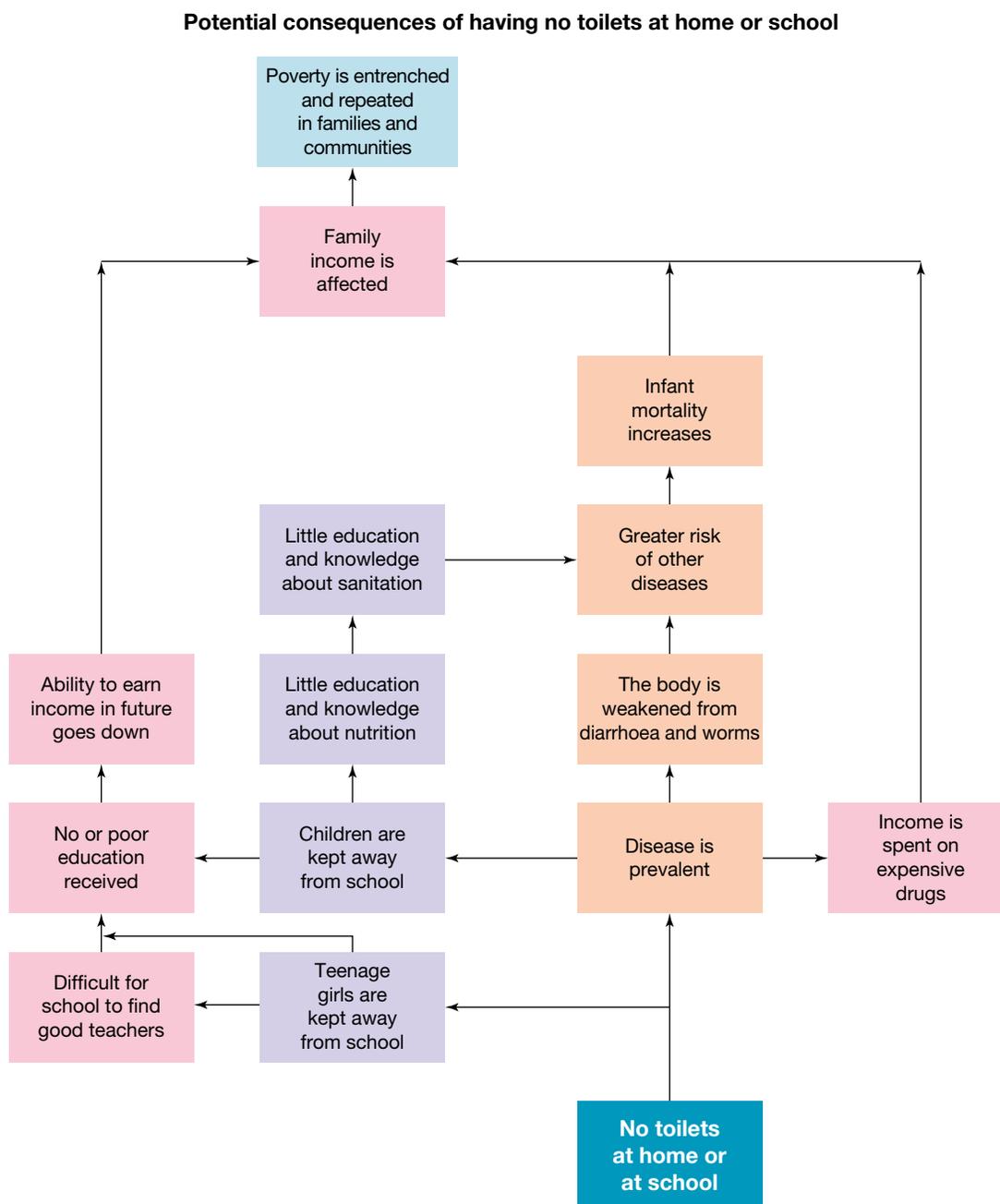
Inadequate sanitation is one of the main causes of contaminated water supplies in low- and middle-income countries and leads to an increased rate of DALY from infectious diseases such as diarrhoea, cholera and typhoid. As many as one in three people globally are infected with intestinal worms including hookworm, roundworm and whipworm. These infections occur as a result of soil contaminated with faeces. Adequate sanitation could entirely prevent this cause of death.

Because few schools in low- and middle-income countries have toilets, girls often don't attend, especially when they are menstruating. Sometimes schools have toilets but they are not segregated, and this also acts as a barrier to girls attending school. The majority of the 121 million children and youth currently not enrolled in school worldwide are female, with inadequate sanitation contributing to this trend.

Without private toilets, many cultures expect girls to wait until it is dark before they can relieve themselves. This exposes them to the danger of harassment, assault, animal attacks, discomfort, loss of dignity and sometimes illness. According to WaterAid, women and girls living without a toilet spend 266 million hours each day finding a place to relieve themselves. Nearly all of them live in low- and middle-income countries. This reduces their ability to receive an education or meaningful employment, driving them further into poverty (see **FIGURE 8.36**) and contributing to the differences in burden of disease between low-, middle- and high-income countries.

Repeated infections caused by inadequate sanitation require medical treatment. If treatment is available, the associated costs are often the responsibility of the individual or their family in low- and middle-income countries. These costs drain the family income further and make it more difficult to break the poverty cycle.

FIGURE 8.36 The many impacts of inadequate sanitation



Source: Adapted from WaterAid, *The state of the world's toilets 2007: report 2*.

8.5 Activities

1. Access the **Water** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **Sanitation in India** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

 Digital documents	Water worksheet (doc-32217) Sanitation in India worksheet (doc-32218)
 Weblinks	Water Sanitation in India

8.5 Exercises

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To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

8.5 Quick quiz



8.5 Exercise

8.5 Exam questions

Select your pathway

■ LEVEL 1

1, 5, 6, 7

■ LEVEL 2

2, 3, 4, 10, 11

■ LEVEL 3

8, 9, 12

Test your knowledge

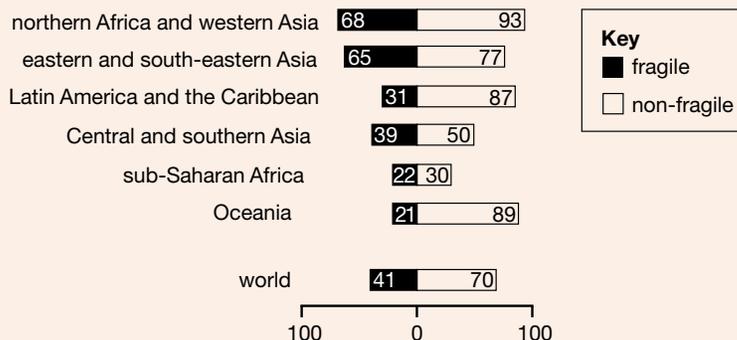
1. **a.** What is meant by 'safe water'?
b. Explain three reasons why safe water is essential for human life.
2. Discuss reasons why lack of clean water is generally not an issue in Australia.
3. Explain why children are particularly susceptible to the impacts of unsafe water.
4. Explain how lack of safe water contributes to poverty in low- and middle-income countries.
5. **a.** What is sanitation?
b. Explain why a lack of sanitation often has greater impacts on females compared to males.
6. How can unregulated watercourses lead to increased rates of malaria infection?
7. List five conditions that can be caused by unsafe water and sanitation.

Apply your knowledge

8. Discuss how access to safe water contributes to similarities and/or differences in burden of disease between high-, middle- and low-income countries.
9. Explain how lack of access to sanitation contributes to similarities and/or differences in health status between high-, middle- and low-income countries.
10. Using data, discuss the difference in the proportion of deaths attributable to lack of sanitation between high-, middle- and low-income countries.
11. Discuss two ways that inadequate sanitation impairs family incomes and increases the risk of poverty. (You can refer to **FIGURE 8.36** for this.)
12. Explain how having access to clean water can enhance the lives of those who currently lack it.

Question 1 (7 marks)

Source: VCE 2019, Health and Human Development Exam, Q.12; © VCAA

Proportion of the population using basic sanitation services in fragile and non-fragile states, 2015 (percentage)Source: Adapted from United Nations, *The Sustainable Development Goals Report 2018*, United Nations, New York, 2018, o. 19; © 2018 United Nations

The World Bank classifies countries as fragile or non-fragile. A fragile state is a country that experiences conflict, violence and instability.

- Describe** sanitation. **1 mark**
- Using information from the graph, **compare** the use of basic sanitation services in fragile and non-fragile states. **2 marks**
- Explain** how the use of basic sanitation services contributes to differences in both health status and burden of disease. **4 marks**

Question 2 (2 marks)

Source: VCE 2017, Health and Human Development Exam, Q.15.a; © VCAA

Describe what is meant by 'safe water and sanitation'.**Question 3 (2 marks)**

Source: VCE 2010, Health and Human Development Exam, Section B, Q.4.a; © VCAA

In developing regions most of the burden of collecting drinking water falls on women and girls.

Explain how this burden may impact on human development.**Question 4 (3 marks)**

Comparison of key indicators for high-, middle- and low-income countries, 2015

Income classification	Life expectancy at birth (year)	Maternal mortality rate per 100 000	Under-5 mortality rate per 1000	Population with access to safe water (%)	Population access to adequate sanitation (%)
High-income countries	81	10	6	100	99
Upper middle-income countries	75	54	19	95	80
Lower middle-income countries	68	251	53	89	52
Lower income countries	62	496	76	66	28

Source: Adapted from: <http://data.worldbank.org/>

Using data from the table, **explain** how access to adequate sanitation could contribute to differences in health status between high- and low-income countries.

Question 5 (2 marks)

Outline two reasons why a lack of access to safe water may impact on the ability of children to attend school.

More exam questions are available in your learnON title.

8.6 Poverty as a factor affecting health status and burden of disease

KEY CONCEPT Understanding how poverty contribute to similarities and differences in health status and burden of disease

Poverty refers to deprivation. This deprivation often stems from lack of income but presents as a lack of material resources such as food, shelter, clean water and healthcare, and deprivation of intangible resources such as social inclusion, and opportunities for education and decision-making.

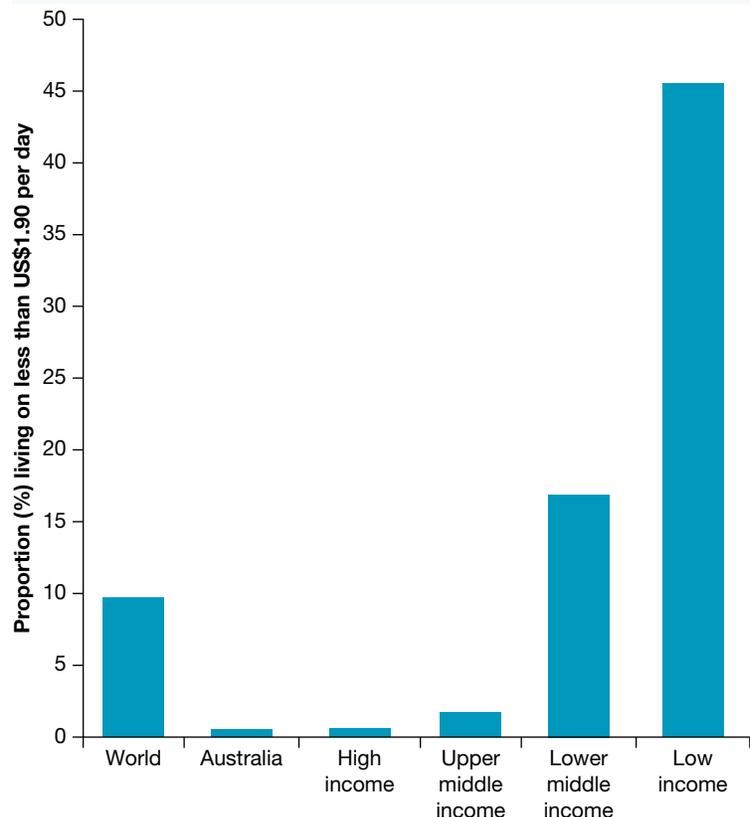
8.6.1 What is poverty?

From an individual perspective, poverty is generally defined in terms of income and is measured in a number of different ways:

- *Those living on less than a certain amount per day (often US\$1.90 a day).* This is referred to as absolute poverty or extreme poverty (see **FIGURE 8.37**).
- *Those living on less than 50 per cent of their country's average income.* This is referred to as relative poverty.

Although rates of extreme poverty are low in Australia, there are a number of people living in relative poverty, particularly those in low socioeconomic groups. The variations in health status that this contributes to are explored in subtopic 4.7.

FIGURE 8.37 Proportion living on less than US\$1.90 per day, 2017 (2011 PPP) (% of population)



Source: World Bank, 2019.

8.6.2 How poverty affects health status and burden of disease

However it is measured, poverty contributes to differences in burden of disease by reducing access to a range of resource (see **FIGURE 8.38**).

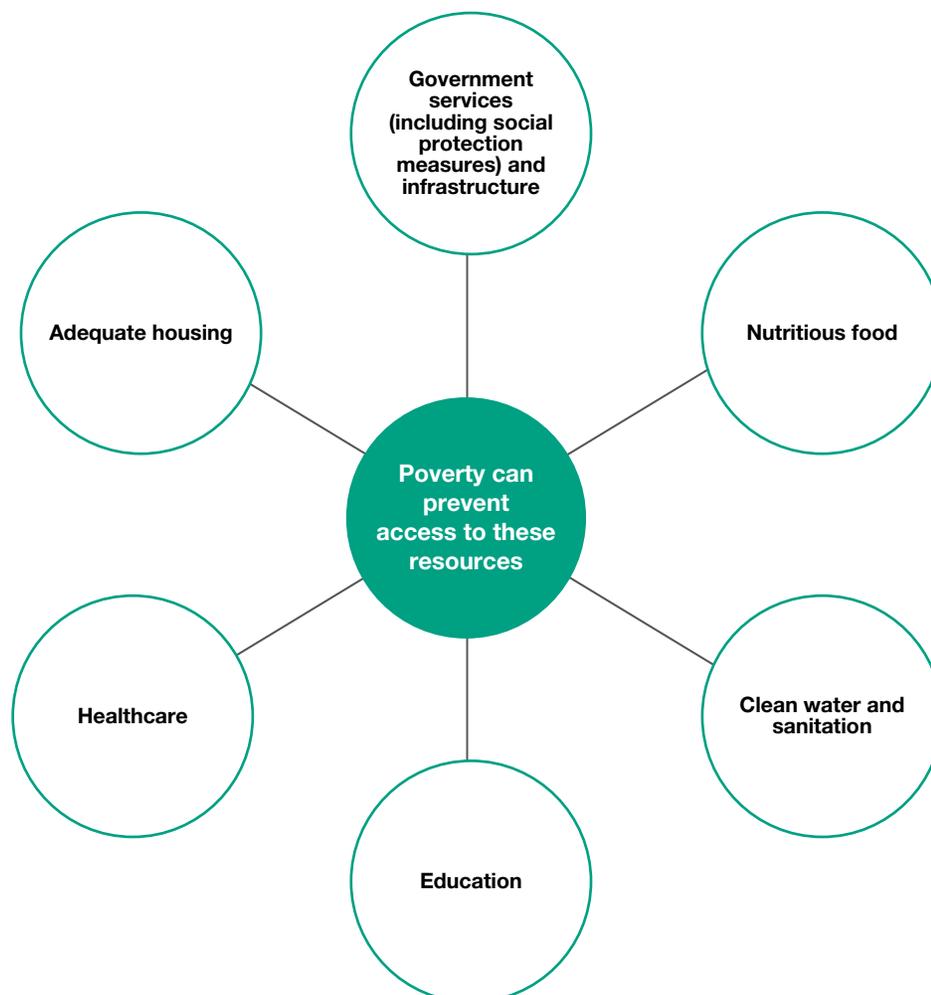
Poverty and government services, social protection measures and infrastructure

Recall that Gross National Income (GNI) is the total value of goods and services a country's citizens produce, including the value of income earned by citizens who may be working in an overseas country. It is a reflection of the wealth of a country and indicates how much money the government is able to spend on services and infrastructure.

The level of GNI affects the government's ability to provide access to clean water, sanitation, health services, public education and social protection measures (such as pensions, welfare and disability payments). The more money the government generates through taxation and investment, the greater the opportunity it has to provide these resources to its citizens.

However, the GNI of a country does not determine how the wealth is distributed. In many countries, it is common for a few people to control most of the wealth, leaving a majority of the country with living standards well below the wealthy few. This divide in wealth means that low- and middle-income

FIGURE 8.38 Poverty reduces access to a range of resources that contribute to differences in burden of disease between high-, middle- and low-income countries.

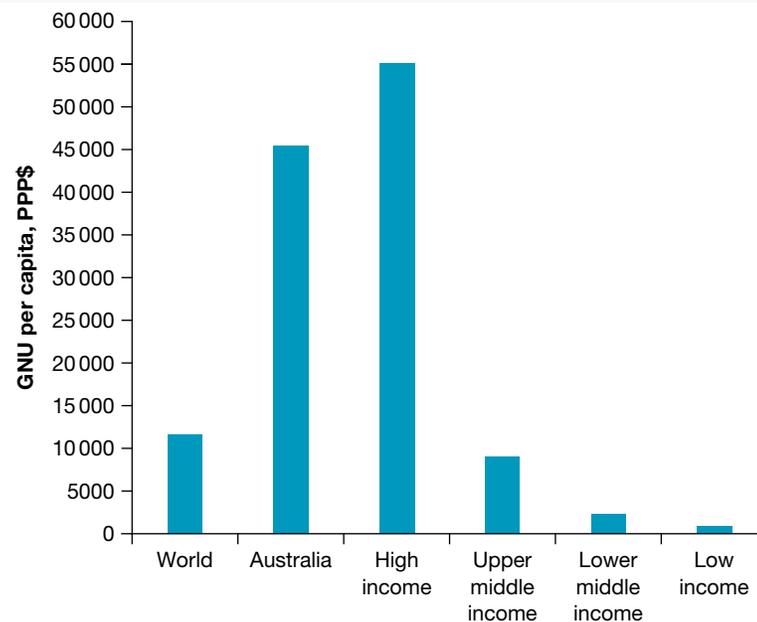


countries experience the concerns associated with poverty, such as high rates of communicable diseases and higher rates of child and adult mortality, which most high-income countries do not experience. Yet they are also likely to experience issues and diseases associated with wealth that are also common in high-income countries, such as obesity, diabetes and cardiovascular disease. Experiencing issues and diseases associated with both poverty and wealth in one country is referred to as a ‘double burden of disease’.

In high-income countries such as Australia, higher average incomes mean that the variation in how wealth is distributed has a smaller impact than in low- and middle-income countries.

GNI per capita (or per person), in Australia and the World Bank income groups, is shown in **FIGURE 8.39**.

FIGURE 8.39 GNI per capita, (current US\$)



Source: <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD>

Poverty and nutritious food

Undernutrition is often the result of an inability to afford nutritious foods. Undernutrition decreases immune function, which increases the risk of infection and premature death, especially among children. Pregnant women who cannot access nutritious foods are more likely to die as a result of their pregnancy and have babies who are more susceptible to premature mortality due to underdeveloped body systems.

Poverty and access to clean water and sanitation

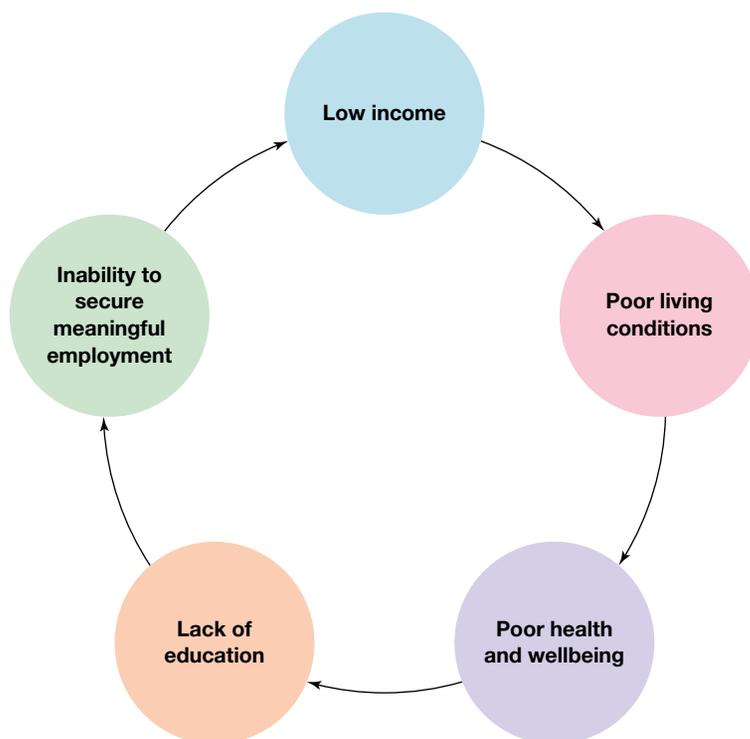
Poverty also restricts the ability of governments to provide resources such as clean water and sanitation. This further increases the risk of infectious diseases including diarrhoeal disease, which is a leading cause of death among children in low- and middle-income countries.

Poverty and education

Reduced access to education results in lower literacy rates. This reduces opportunities for employment, perpetuating the cycle of poverty and the associated impacts such as limited access to food, water and healthcare, which contributes to higher rates of morbidity and premature mortality. Lower literacy rates result in lower levels of health literacy, which is a risk factor for ill health and premature mortality from conditions associated with poverty such as HIV/AIDS. In low- and middle-income countries, many

governments do not have the funds available to provide education for their people. This means it is often only the wealthy who can afford to pay for their children to be educated. As a result, employment prospects are lower, and the cycle of poverty and poor health and wellbeing is likely to continue (see **FIGURE 8.40**).

FIGURE 8.40 The cycle of poverty can be broken with education, but education often requires payment.



It is compulsory for all Australian children between the ages of six and 15 or 16 (depending on the state or territory) to be enrolled in school. Many of the expenses required to run the education system are met by the government through tax revenue. This allows people from all socioeconomic status groups the opportunity to educate their children, contributing to higher health status and lower burden of disease in Australia.

FIGURE 8.41 Australia's health system, including Medicare and public hospitals, increase access to health services regardless of an individual's ability to pay.

Poverty and healthcare

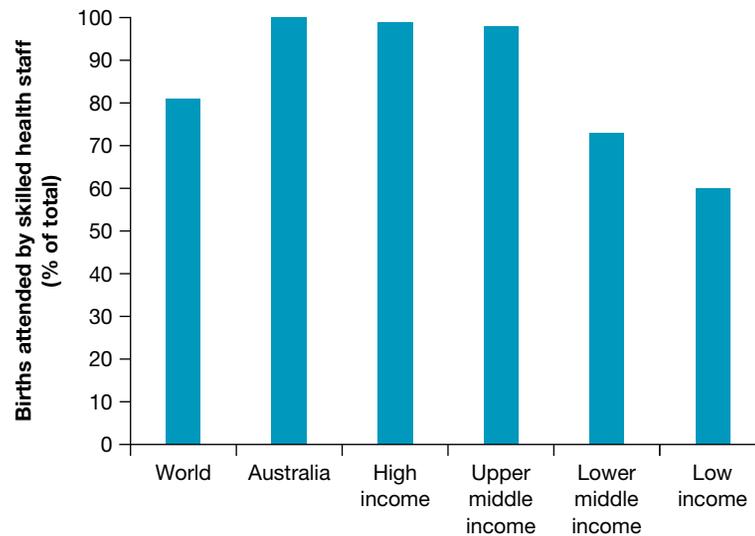
Poverty usually results in the inability of individuals, including children and pregnant women, to afford healthcare. Medicare and the Pharmaceutical Benefits Scheme (PBS) ensures all Australians have access to a range of health professionals and services such as doctors, hospitals and essential medicines. Few countries have a universal healthcare scheme such as Medicare, so only those who can afford to pay for healthcare can receive treatment. As a result,



children in low- and middle-income countries are much more likely to die from conditions that are often easily treatable in high-income countries like Australia.

According to the WHO, more than 280 000 women die each year from preventable complications during pregnancy or childbirth, and most of these deaths occur in low- and middle-income countries. In Australia, most women can access maternal healthcare through Medicare, regardless of their ability to pay (see **FIGURE 8.42**).

FIGURE 8.42 Percentage of births attended by skilled health personnel, 2016



Source: Adapted from: <https://data.worldbank.org/indicator/SH.STA.BRTC.ZS?view=chart>

Poverty and housing

For many people, more time is spent in the home than anywhere else. In many populations, especially in low- and middle-income countries, poverty means that many people live in inadequate housing, which contributes to ill health.

Many houses rely on solid fuels such as coal and wood for indoor heating but do not have adequate ventilation, such as chimneys, and therefore have high levels of indoor air pollution. As a result, the World Health Organization has listed indoor air pollution as the eighth most important risk factor and says it is responsible for 2.7 per cent of the global burden of disease. Indoor air pollution has been shown to increase the risk of pneumonia among children under five years, and chronic respiratory disease and lung cancer among adults over 30. Women and children are often most at risk of indoor pollution as they are exposed to it for longer periods of time. People in high-income countries generally rely on cleaner methods of energy production and therefore experience lower levels of illness and death due to indoor pollution.

Adequate housing can reduce the risk of infectious diseases such as malaria by reducing exposure to the mosquitoes that spread it. Low-income countries often lack adequate protection from such risks compared to high-income countries.

FIGURE 8.43 Cooking indoors without adequate ventilation contributes to indoor air pollution but is the only option for millions of people living in poverty.



A reliable electricity supply increases the ability of families to promote health and wellbeing and break the cycle of poverty by increasing opportunities for education, healthy food intake, access to technology and temperature control.

Many communities live in areas that are subject to extreme temperatures. If there is a lack of insulation and/or heating and cooling, there is an increased risk of death from pre-existing conditions (such as heart conditions) as the body attempts to maintain body temperature. The type of heating (such as solid fuels) can also increase the risk of respiratory diseases.

8.6 Activity

Access the **Poverty** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

 **Digital document** Poverty worksheet (doc-32219)

 **Weblink** Poverty

8.6 Exercises

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To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

8.6 Quick quiz



8.6 Exercise

8.6 Exam questions

Select your pathway

■ LEVEL 1
1, 4

■ LEVEL 2
2, 3, 5

■ LEVEL 3
6, 7, 8, 9

Test your knowledge

- What is meant by 'poverty'.
 - Explain two ways that poverty can be measured.
- Explain how housing contributes to variations in burden of disease between Australia and low-income countries.
- Briefly explain how adequate housing can promote health status.
- Briefly explain the cycle of poverty.
- Outline two ways that education can impact health status.

Apply your knowledge

- Using **FIGURE 8.37**, discuss the difference in the levels of poverty between high-, middle- and low-income countries.
 - Explain three ways this difference can contribute to differences in burden of disease.
- Identify two groups within Australia that are more likely to experience poverty than the rest of the population. (You may need to refer to topic 4.)
 - Outline two similarities between the groups identified in part **a** and those living in low- and middle-income countries.
- Explain two ways that poverty can increase the risk of infectious diseases such as malaria, HIV/AIDS and/or diarrhoeal disease.
- Explain how reducing poverty may promote two dimensions of health and wellbeing.

Question 1 (3 marks)

Source: VCE 2020, Health and Human Development Exam, Q.10.c (adapted); © VCAA

What is meant by 'extreme poverty'?

Question 2 (2 marks)

Source: VCE 2011, Health and Human Development Exam, Section A, Q.5; © VCAA

In low-income countries the leading cause of death is pneumonia, followed by heart disease, diarrhoea, HIV/AIDS and stroke. In high-income countries the leading cause of death is heart disease, followed by stroke, lung cancer, pneumonia and asthma.

Briefly **explain** how income may influence differences in the causes of death between low-income and high-income countries.

Question 3 (2 marks)

Source: VCE 2005, Health and Human Development Exam, Q.3.ii (adapted); © VCAA

Infectious and parasitic diseases in the World Health Organization Africa Region (which includes Zimbabwe) contribute 56% of the DALYs. In the World Health Organization Western Pacific Region (which includes Australia) the relevant figure is 1.9%.

Source: Adapted from Annex Table 3, Burden of Disease in DALYs by cause, sex and mortality stratum in WHO regions, estimates for 2002 in WHO, World Health Report 2003, WHO, Geneva

Explain how low levels of income may cause the differences in the contribution of infectious and parasitic diseases to total DALYs in Zimbabwe and Australia.

Question 4 (3 marks)

Read the following text.

In 2005, Mozambique signed a new law that gave women equal rights as members of a household. Women finally received the legal right to divorce, create pre-nuptial agreements and inherit property.

The Family Law legally redefined the status of women and overhauled marriage laws.

The law also limited marriage to women of 18 years of age and older. Men were now no longer the defacto head of household, and women are able to work outside the home without acquiring permission and can buy and manage financial assets.

Source: <http://endpoverty2015.org/goals/genderequity>

Describe how the above changes may improve the health of Mozambique's women.

Question 5 (3 marks)

Comparison indicators for high-, middle- and low-income countries

Country	Income classification	Life expectancy at birth (years) (2015)	Gross national income per capita (ppp int \$) (2015)	Adult mortality rate per 1000 (2012)	Government expenditure on health per capita US\$ (2014)	Under-5 mortality rate per 1000 (2015)
Australia	High-income country	83	45320	59	6031	4
China	Upper-middle income country	75	14320	85	420	13
Papua New Guinea	Lower-middle income country	62	2800	275	92	61
Zimbabwe	Low-income country	58	1710	336	58	89

Sources: www.who.int/whosis/en/index.html and <http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD>

Using information in the table, **outline** the relationship between income and life expectancy in the above table.

More exam questions are available in your learnON title.

8.7 Inequality and discrimination as factors affecting health status and burden of disease

KEY CONCEPT Understanding how inequality and discrimination contribute to similarities and differences in health status and burden of disease

Equality and freedom from **discrimination** are basic **human rights**. According to the United Nations Universal Declaration of Human Rights:

- All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.
- Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.

Unfortunately, not all people have their human rights upheld, and discrimination against specific groups contributes to inequalities in health status and burden of disease compared to other population groups.

As average incomes and living conditions have improved, so too has health status. Yet this increase in income, living conditions and health status has not occurred universally among all countries and between all population groups within countries.

Inequality in health status often occurs as a result of an inability to access resources such as education, employment and healthcare. Quite often, discrimination is the reason these resources remain out of reach for many. Groups who are discriminated against experience inequality in relation to a range of outcomes, including:

- having higher rates of depression and anxiety
- having higher rates of premature death, including under-five mortality
- being more likely to be the victim of intentional violence.

Discrimination when a person or group of people is treated differently than other people, often a result of factors such as race, religion, sex, sexual orientation and gender identity.

Human rights relates to the freedoms and conditions to which every person is entitled

FIGURE 8.44 Human rights are universal, meaning every person is entitled to certain conditions and treatment. Unfortunately, not everyone has their rights upheld.



Although many countries, including Australia, have implemented laws to make discrimination illegal, many minority groups still experience discrimination and inequalities in health status around the world, including:

- those from minority racial groups, including indigenous peoples and migrants
- those from minority religious groups
- females
- people on the LGBTQIA spectrum
- those who identify as a gender different from the sex assigned to them at birth.

8.7.1 Race and its affect on health status and burden of disease

According to the Australia Human Rights Commission, ‘racial discrimination is when a person is treated less favourably than another person in a similar situation because of their race, colour, descent, national or ethnic origin or immigrant status’.

Racial discrimination occurs around the world and often results in social exclusion, preventing millions of people from participating in the society in which they live in relation to education, access to healthcare, community participation, employment and housing.

Indigenous peoples and ethnic minorities are two groups who are often discriminated against due to their race. According to the WHO, ‘in almost every country in the world, minorities and indigenous peoples are among the poorest and most vulnerable of groups, suffer greater ill health and receive poorer quality healthcare than other segments of the population. More often than not, this ill health and poorer healthcare are the result of poverty and discrimination’.

According to the *State of the World’s Indigenous Peoples* (UN, 2009):

- Indigenous people suffer higher rates of ill health and disability, and have dramatically shorter life expectancy than other groups living in the same countries.
- Discrimination, racism and a lack of cultural understanding and sensitivity prevent access to healthcare for many indigenous people. Many health systems do not reflect the social and cultural practices and beliefs of indigenous peoples.
- The world’s 370 million indigenous peoples are among the world’s most marginalised people, and are often isolated politically and socially within the countries where they reside by the geographical location of their communities, and their separate histories, cultures, languages and traditions.
- Indigenous peoples are often among the poorest in the world, and the poverty gap between indigenous and non-indigenous groups is increasing in many countries around the world. This influences indigenous peoples’ quality of life and their right to optimal health and wellbeing.

FIGURE 8.45 Discrimination contributes significantly to the poorer health status experienced by indigenous populations worldwide, including in Australia.



FIGURE 8.46 Displaced persons often have no choice but to live in refugee camps where they rely on others for the provision of basic resources such as food and water.



According to DeLaet et al. (2015), racial minorities experience worse physical and mental health and wellbeing in terms of morbidity and mortality in all geographic regions in which such comparative data are available. According to Donna Ah Chee, from the Central Australian Aboriginal Congress (CAAC), ‘as a life stressor, racism directly and negatively affects the cardiovascular system causing high blood pressure/hypertension and heart disease. It seriously affects mental health and wellbeing causing depression, anxiety and other psychological and psychiatric disorders and racism contributes to low birth weight of newborns, as well as premature birth’.

In some cases, victims of racial discrimination become displaced from their homes as they are forced to flee and live in foreign countries as refugees or become displaced in their own country. Displacement has a flow-on effect as this new living environment may lack food and water, educational opportunities for children, employment opportunities for adults, and healthcare. The number of people displaced from their homes has increased dramatically in recent years, contributing to higher rates of illness and premature death among these groups.

8.7.2 Religion and its affect on health status and burden of disease

Every day, many members of religious or belief communities face discrimination based on their religion or belief. This often results in an inability to realise their human rights and participate in the community in which they live in terms of accessing public education, health services and employment. In extreme cases, some people are arrested or killed due to their religious beliefs.

As in many other countries, religious minorities have faced discrimination in Australia. Muslim and Jewish Australians have been particularly targeted by acts of discrimination including being sworn at, spat on, told they do not ‘belong’ in Australia and denied jobs.

According to VicHealth, religious discrimination has been shown to contribute to increased rates of:

- anxiety
- depression
- psychiatric disorders
- stress
- decreased life satisfaction
- self-rated poor health status
- tobacco smoking
- alcohol abuse
- drug use.

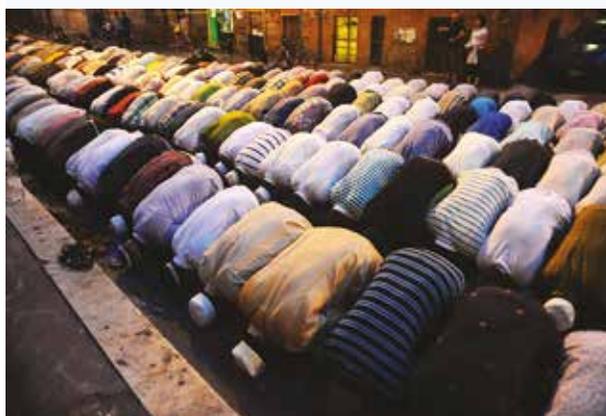
These outcomes and risk factors contribute to the higher rates of burden of disease experienced by those who are victims of religious discrimination across the world.

8.7.3 Sex and its affect on health status and burden of disease

Sex refers to the physiological characteristics, including the DNA and sex organs, present in an individual at birth. In most cases, people are born as either male or female, although some people are born with a combination of both male and female characteristics, referred to as ‘intersex’.

When women have the same power and control over their lives as men do, their health status improves. In a global context, however, females often have less power and less control over resources than males. This in turn typically leads to disadvantage in the economic, political, social, educational and health domains. Women in Australia

FIGURE 8.47 Globally, millions of people experience discrimination due to their religious beliefs.



generally have the same opportunities for education, employment and community participation as men do, which increases the health status experienced by women in Australia.

There are also differences between the sexes that negatively affect men, such as the higher levels of risk-taking, higher rates of smoking and higher levels of violence. On a global scale, however, sex inequalities impact women's health status more severely than they do men's.

When financial resources are limited, they are often allocated to areas deemed to be of greatest importance. The lower status of women in many low- and middle-income countries can mean they often miss out on opportunities for education and employment. This helps explain the fact that two-thirds of the 775 million people in the world who lack basic literacy skills are female (UN, 2020). Consequently, many women work in jobs that are often badly paid, dangerous and laborious, which directly puts their health and wellbeing at risk. Sex work is an example of this, as it raises the levels of HIV/AIDS infections. Globally, women earn 24 per cent less than men, and up to 75 per cent of female employees work in informal jobs that are not protected under law in low- and middle-income countries.

Women who are educated, however, are more likely to have healthier children. They are also more likely to adopt health-promoting behaviours such as having their children immunised and implementing methods to reduce the transmission of infectious diseases such as malaria and diarrhoeal disease. Educated women also tend to have fewer children. This means that the children they do have generally have greater opportunities and better access to resources such as education, food and healthcare, contributing to higher levels of health status and lower burden of disease.

Globally, females have less say in decisions affecting their lives than males. Societal norms in many countries make men the sole decision makers. This can affect the role that women play in society and also their health and wellbeing. For example, one study on the impact of a cyclone in Bangladesh noted that many women perished with their children at home as they had to wait for their husbands to return and make an evacuation decision.

In many countries, women are expected to abide by their father's or husband's decisions. Violence may result if the woman challenges the man's authority. It may be socially acceptable for a man to have more than one sexual partner and he may not use protection with any of them. His wife may face an increased risk of contracting sexually transmissible infections (including HIV/AIDS) but not be in a position to protect herself. Women may also be the last fed and so may not receive enough nutrients, leading to malnourishment. Adequate nourishment is a basic need to prevent ill health and premature mortality.

Women also lack influence on a national scale in many countries. Women hold an average 3 per cent of seats in national parliaments in Pacific Island countries, and an average of 10 per cent of seats in western Asia. The lack of input that women have in governments can contribute to women having little say in the issues that affect their health and wellbeing, such as male perpetrated violence (see the following case study on domestic violence in Papua New Guinea).

FIGURE 8.48 Females are often responsible for laborious jobs, such as collecting water, which can cause back and neck injuries, impacting on physical health and wellbeing.



FIGURE 8.49 Educated girls have a greater ability to escape poverty.



CASE STUDY

Violence against women in PNG an 'emergency', says Human Rights Watch

The Papua New Guinea government is failing to protect victims of family violence, according to a new report by Human Rights Watch.

The report, titled Bashed Up: Family Violence in PNG, found that women are left unprotected, even when they have gone to great lengths to seek help.

It accused the government of neglecting survivors' needs for safety, services and justice, and found women often had no choice but to live with abusive partners.

More than two thirds of PNG women have experienced family violence. In some parts of the country, 80 per cent of men admit they have been responsible for sexual violence against their partner.

Two years ago the PNG government passed the Family Protection Act which set new penalties for family violence and was designed to protect and assist victims.

But Human Rights Watch (HRW) Australia director Elaine Pearson says the situation on the ground is still dire.

'We spoke to woman after woman who told us really harrowing accounts of how they'd been attacked by their husbands, sometimes with knives (or) burnt with hot sticks,' she told Pacific Beat.

'After these attacks they'd gone to the police, but there were remarkably similar stories from women about the lack of responsiveness of police.

'Too often police were simply ignoring their claims or telling them they should go back to their husbands because there really weren't any other options.'

Women told to 'solve it at home'

The report found that police and prosecutors rarely pursue criminal charges against perpetrators, even in the most serious cases of rape or murder.

We spoke to woman after woman who told us really harrowing accounts... Too often police were simply ignoring their claims or telling them they should go back to their husbands.

One woman interviewed for the HRW report suffered multiple broken bones and went to police 17 times asking for the arrest of her husband, but they refused.

Monica Paulus, co-founder of the Highlands Women Human Rights Defenders movement, says women often encounter resistance from police, especially if the offender is a powerful member of the local community.

'Police will tell them "go back and solve it at home",' she said.

'Most times if it's a very senior person then that's what the response will be. They look at the status of the man who is involved as the perpetrator.'

Ms Paulus said women trying to escape violence were also battling poverty, traditions that tie them to their husband's families, and a lack of safe houses.

She said women who wanted to pursue their cases in village courts also had to pay several fees and were often saddled with paying for medical reports documenting their injuries. Often cases dragged on for so long, women gave up.

Accusations of sorcery could be raised against a woman, particularly if the husband wanted to remarry, said Ms Paulus.

'Sorcery accusations all too often become a form of family violence, with abusive husbands threatening or using sorcery accusations to silence and control women,' the report said.

More support services needed

In recent years there has been more training for police and 14 family and sexual violence units have been set up in police stations, partly-funded by the Australian government.

But Ms Pearson said more needs to be done.

'We hope the government takes this report seriously and the government will implement regulations for the Family Protection Act,' she said.

‘We would like police officers to start issuing protection orders as a matter of course rather than as an exception.’

She also called for Port Moresby to fund more support services for women fleeing domestic violence.

Source: ‘Violence against women in PNG an “emergency”, says Human Rights Watch’, Jemima Garrett, ABC News, <https://www.abc.net.au/news/2018-01-08/violence-against-women-in-png-an-emergency-watchdog/9283286>

CASE STUDY REVIEW

1. Outline reasons for women staying with abusive partners in Papua New Guinea.
2. In 2019, there were no women in the government of Papua New Guinea. Explain how having women represented in the government could improve health status among women in Papua New Guinea.
3. Explain how inequality and discrimination based on sex contributes to poverty in countries like Papua New Guinea.

Of the 280 000 women who die each year from complications during pregnancy, 99 per cent are in low- and middle-income countries. Women are often neglected with regard to healthcare and other services and essential supplies, and this increases mortality rates.

The next sections explore the impact of two particularly significant issues for females in low- and middle-income countries: forced marriage and female genital mutilation.

Forced marriage

Forced marriage occurs when one or both of the parties is married against his or her will. Forced marriage is considered a violation of human rights and viewed by some as a form of slavery.

Although outlawed in many countries, forced marriage still occurs and can have devastating consequences for those involved, particularly females. More than 13 million girls under the age of 18 are estimated to be forced into marriage each year, quite often with much older men.

When girls are forced into marriage, they are often withdrawn from school and regularly become pregnant before their bodies are adequately developed to deal with pregnancy and childbirth. As a result, pregnant girls are more likely to experience conditions such as obstetric fistula (see the following boxed text on this condition) and other complications such as excessive bleeding, due to their pregnancy. Although not as common in high-income countries, maternal mortality is a leading cause of death for females aged 15–19 in low- and middle-income countries.

Obstetric fistula is caused by prolonged obstructed labour when a female will spend days in labour without any medical help or pain relief. If the female survives this ordeal, the baby will be stillborn and the internal injuries sustained by the mother can cause internal holes in the vaginal walls, bladder and rectum. This causes the female to develop urinary incontinence and sometimes bowel incontinence as well.

Many fistula survivors are abandoned by their husbands, rejected by their society and forced to live a life of shame and despair. They may spend the rest of their lives as destitute outcasts unless they can access healthcare to repair the damage.

Child brides face a higher risk of contracting HIV/AIDS because they often marry older men with greater sexual experience. For example, girls aged 15–19 are two to six times more likely to contract HIV/AIDS than boys of the same age in sub-Saharan Africa.

Child brides are less likely to be educated and more likely to live in poverty, further increasing the risk of numerous impacts on health and wellbeing and health status.

Female genital mutilation

Female genital mutilation (FGM) describes procedures that intentionally alter or cause injury to the female genital organs for non-medical reasons. Knives, scissors, scalpels, pieces of glass or razor blades are used

to cut or remove tissue such as the clitoris from the genitals. FGM is carried out in more than 25 countries around the world on girls between infancy and the age of 15. In some countries such as Somalia, Egypt and Gambia, up to 90 per cent of females have been subjected to FGM.

FGM is often carried out in the name of culture or religion, but no religion specifies that this procedure should occur.

UNICEF estimates that more than 200 million females live with FGM and up to 3 million girls are thought to be subjected to this practice each year. Having no benefit for women or girls, FGM can cause severe pain, excessive bleeding (haemorrhage), infections, shock, psychological problems and death.

8.7.4 Sexual orientation and its affect on health status and burden of disease

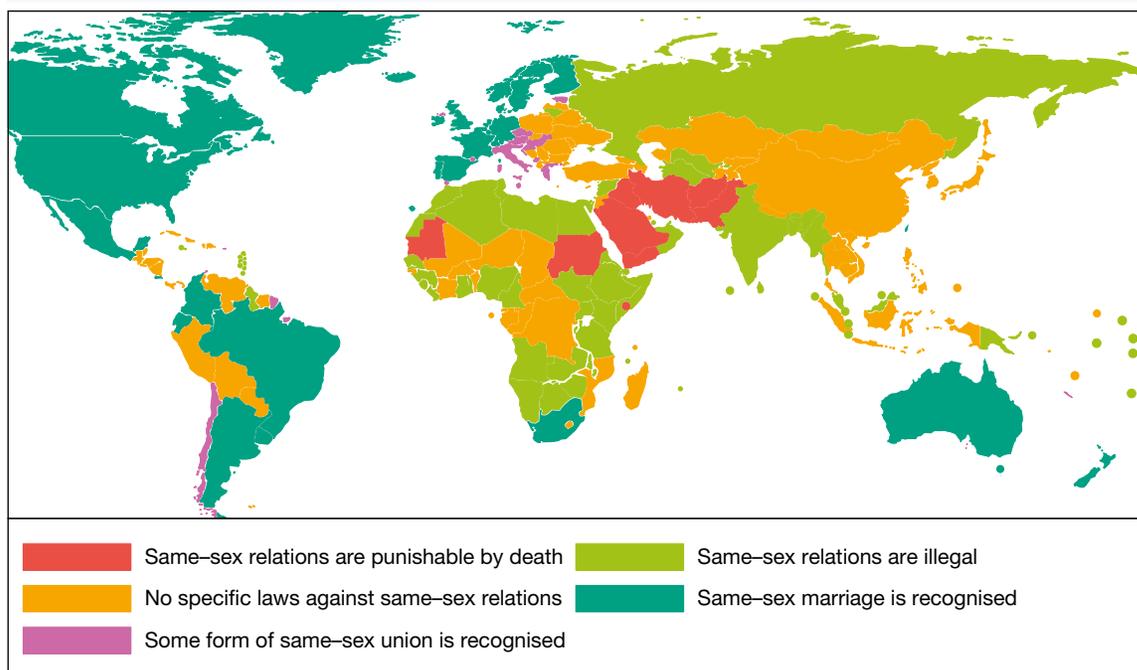
Sexual orientation describes the sex that an individual is sexually and romantically attracted to. It is also associated with discrimination and inequality around the world.

Classifications of sexual orientation include heterosexual (those attracted to members of the opposite sex); homosexual — usually described as gay (males who are attracted to males) or lesbian (females who are attracted to females); bisexual (attracted to both sexes); or asexual (not attracted to either sex).

Those who do not identify as heterosexual are often subjected to discrimination, including being:

- refused jobs
- refused opportunities for education
- refused healthcare
- subjected to sexual assault
- subjected to physical beatings
- subjected to criminal proceedings
- subjected to the death penalty (see **FIGURE 8.50**).

FIGURE 8.50 Legal status relating to sexual orientation and acts

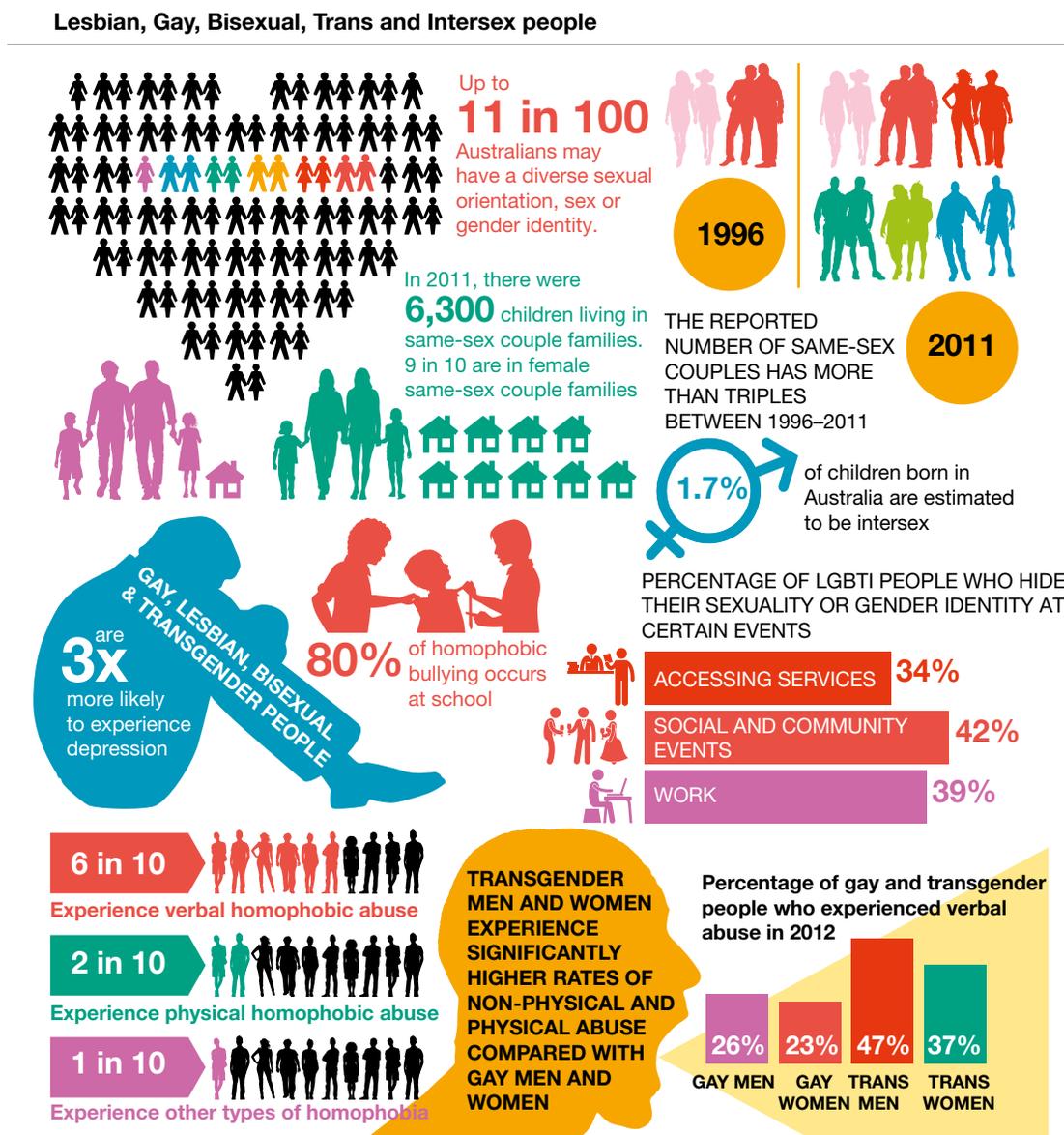


Source: Data source from International Lesbian, Gay, Bisexual, Trans and Intersex Association (ILGA) 2019, *State sponsored homophobia 2019: a world survey of sexual orientation laws: criminalisation, protection and recognition*.

8.7.5 Gender identity and its affect on health status and burden of disease

Gender identity describes how individuals perceive themselves as male, female, a blend of both, or neither. One's gender identity can be the same or different from the sex assigned at birth. People can be cisgender (a person whose gender identity is consistent with the sex assigned to them at birth), transgender (a person who identifies with the opposite sex to that assigned to them at birth) or gender non-conforming individuals (individuals who do not identify as either gender, or identify with a combination of both male and female genders).

FIGURE 8.51 Infographic relating to sexual orientation and gender identity



Source: © Australian Human Rights Commission 2019.

Individuals who are transgender or gender non-conforming are at higher risk of discrimination in most societies and experience:

- higher rates of mental disorders
- higher rates of physical and sexual assault
- increased rates of self-harm including suicide.

Gender identity should not be confused with sexual orientation. Sexual orientation refers to the sex that an individual is sexually and romantically attracted to, while gender identity describes how individuals perceive themselves.

8.7 Activity

Access the **Girl effect** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital document** Girl effect worksheet (doc-32220)
-  **Weblink** Girl effect

8.7 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

8.7 Quick quiz

on

8.7 Exercise

8.7 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 4, 6

■ LEVEL 2

3, 5, 7, 8, 11

■ LEVEL 3

9, 10

Test your knowledge

1. Briefly explain the difference between 'discrimination' and 'inequalities in health status'.
2. **a.** What is meant by 'human rights'?
b. Identify four groups that experience discrimination globally.
3. **a.** Explain what is meant by 'racial discrimination'.
b. Discuss how racial discrimination can impact on burden of disease.
4. Explain what is meant by 'displacement'.
5. Outline the impacts that religious discrimination can have on health and wellbeing and health status.
6. Explain the difference between sexual orientation and gender identity.
7. Explain how gender equality impacts burden of disease in Australia compared to low-income countries.
8. Use **FIGURE 8.51** to answer the following questions.
 - a.** What proportion of Australians are thought to be of diverse sexual orientation or gender identity?
 - b.** What change was there in the number of same-sex couples between 1996 and 2011?
 - c.** What proportion of LGBTI (lesbian, gay, bisexual, transgender and intersex) people had hidden their sexuality or gender identity when accessing services? How could this impact on health and wellbeing?
 - d.** How much more likely are gay, lesbian, bisexual and transgender people to experience depression?
 - e.** What types and rates of abuse are experienced by those with diverse sexual orientation or gender identity?

Apply your knowledge

9. Explain two ways that displacement of people from their homes can impact:
 - a. health and wellbeing
 - b. health status
 - c. burden of disease.
10. Do you think the status of women in Australia is the same as it is for men? Explain.
11. Explain how sexual orientation and gender identity can contribute to variations in health status within countries.

8.7 Quick quiz



8.7 Exercise

8.7 Exam questions

Question 1 (4 marks)

Source: VCE 2018, *Health and Human Development Exam*, Q.9; © VCAA

Answer the following.

- a. **Explain** the term 'discrimination'. **2 marks**
- b. **Explain** how discrimination might contribute to differences in health status and burden of disease. **2 marks**

Question 2 (2 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.8.b; © VCAA

In many developing countries, women are less likely than men to be fully employed. **Identify** two reasons why this might occur.

Question 3 (2 marks)

Source: VCE 2007, *Health and Human Development Exam*, Q.7.d (adapted); © VCAA

The World Food Programme (WFP) is the food aid part of the United Nations. Food aid is one way to promote food security, which is defined as access of all people at all times to the food needed for an active and healthy life. One of the core policies for the World Food Programme is

- to improve the nutrition and quality of life of the most vulnerable people at critical times in their lives.

In January 2002, the World Food Programme and the government of Sudan launched a five-year program to improve maternal and child nutrition. The World Food Programme recognises that women are the first and fastest solution to reducing poor nutrition. Experience shows that in the hands of women, food aid is far more likely to reach children. Seven out of ten of the world's hungry are women and girls. The World Food Programme seeks to give over half its food aid to females.

Source: Adapted from: World Health Organization, World Food Programme <http://www.wfp.org/english>. Accessed March 2007

Describe how inequality and discrimination may impact on the access to food by women in Sudan.

Question 4 (2 marks)

Outline the negative health outcomes that can be linked to inequality and discrimination.

Question 5 (2 marks)

Explain how inequality and discrimination can impact on the health status of girls in a low- or middle-income country.

More exam questions are available in your learnON title.

8.8 Global distribution and marketing of tobacco, alcohol and processed foods as factors affecting health status and burden of disease

KEY CONCEPT Understanding how the global distribution and marketing of tobacco, alcohol and processed foods contribute to similarities and differences in health status and burden of disease

Improving technology has led to a decrease in barriers to communication, trade, transport and other forms of contact. The result has been increased **globalisation**. Globalisation makes it easier for companies to distribute, market and sell their services and products in all corners of the globe. While some services and products can enhance health status, including certain pharmaceuticals and improved farming techniques, others can be detrimental to health status, including tobacco, alcohol and processed foods.

8.8.1 Tobacco

In recent decades, many tobacco manufacturers have been targeting low- and middle-income countries in an attempt to make up lost revenue experienced in high-income countries. The laws, taxes, regulations and public awareness campaigns that operate in many high-income countries such as Australia are often non-existent in low- and middle-income countries. As smoking rates have decreased in many high-income countries as a result of these interventions, distribution and **marketing** has increased in low- and middle-income countries in an attempt to increase global sales.

According to the WHO, tobacco use is growing fastest in low-income countries — over 80 per cent of the world's 1.3 billion smokers now live in low- and middle-income countries. It has been estimated that more than 80 per cent of the world's tobacco-related deaths will be in low- and middle-income countries by 2030.

In India, almost one-quarter of deaths among middle-aged men are caused by smoking. In addition, it has been predicted that as many as 100 million Chinese men currently under 30 years of age will die from tobacco use. The increasing rates of women smoking in low- and middle-income countries is also a concerning trend. In the past, smoking has traditionally been considered a male activity. As a result, tobacco companies have invested heavily, trying to tap into the female market through advertising and promotion. Children have also been influenced by advertising campaigns in low- and middle-income countries, and rates of children who smoke have increased. The ability to purchase single cigarettes in many low- and middle-income countries has contributed to this trend because it makes the purchase of tobacco more affordable for those living in poverty.

FIGURE 8.52 Tobacco companies have targeted low- and middle-income countries, leading to an increase in tobacco use among populations in these countries.



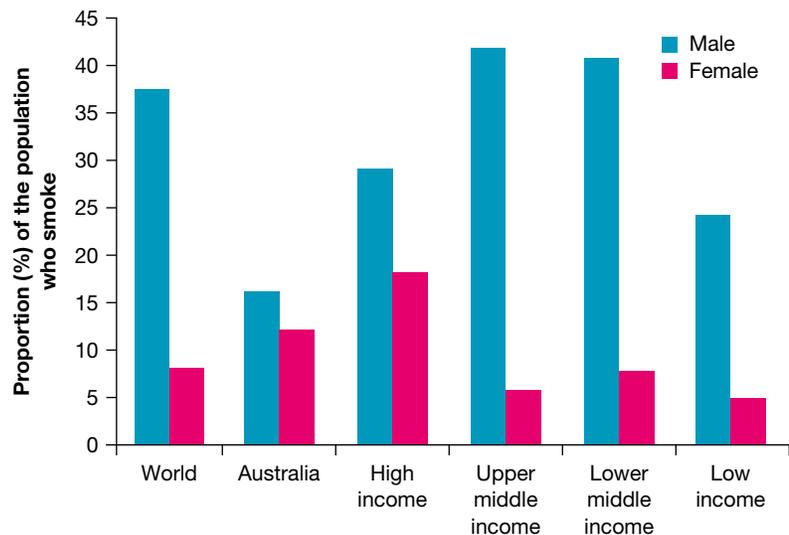
Globalisation the process whereby boundaries between countries are reduced or eliminated allowing individuals, groups and companies to act on a global scale. It can be described as transforming the different societies of the world into one global society. A reduction in barriers to trade, communication and transport contributes to this process.

Marketing the activities of a company associated with selling a product or service, including advertising, selling and delivering products to people

Low- and middle-income countries often have rapid population growth and developing economies, which brings new wealth and a desire to be more like western cultures. These factors, as well as tobacco industry distribution and marketing, and lack of education and health promotion interventions, are leading to an increase in both the rate of smoking and number of smokers in low- and middle-income countries.

In Australia, interventions by governments and non-government organisations, including advertising and packaging laws, increased taxation on cigarettes, and laws restricting smoking in public places, have led to a decrease in smoking rates. Despite these improvements, as in many low- and middle-income countries, tobacco smoking is still a major concern in Australia.

FIGURE 8.53 Predicted prevalence of tobacco use for those aged 15 and over, 2020



Source: Adapted from: <https://apps.who.int/iris/bitstream/handle/10665/330221/9789240000032-eng.pdf?ua=1>

Global distribution and marketing of tobacco and its affect on health status and burden of disease

Higher rates of smoking in low- and middle-income countries is contributing to an increased burden of disease, particularly an increase in premature death. Many of these are the result of cancer, cardiovascular disease and respiratory conditions associated with smoking.

Tobacco smoking can also affect health status and burden of disease in low- and middle-income countries indirectly. As financial resources are often scarce, money that is spent on tobacco may leave less money available to spend on food, clothing, education and basic healthcare. This increases the risk of conditions that are not necessarily caused by tobacco use itself, such as infectious diseases.

FIGURE 8.54 As many as 100 million Chinese men currently under 30 will die from tobacco use.

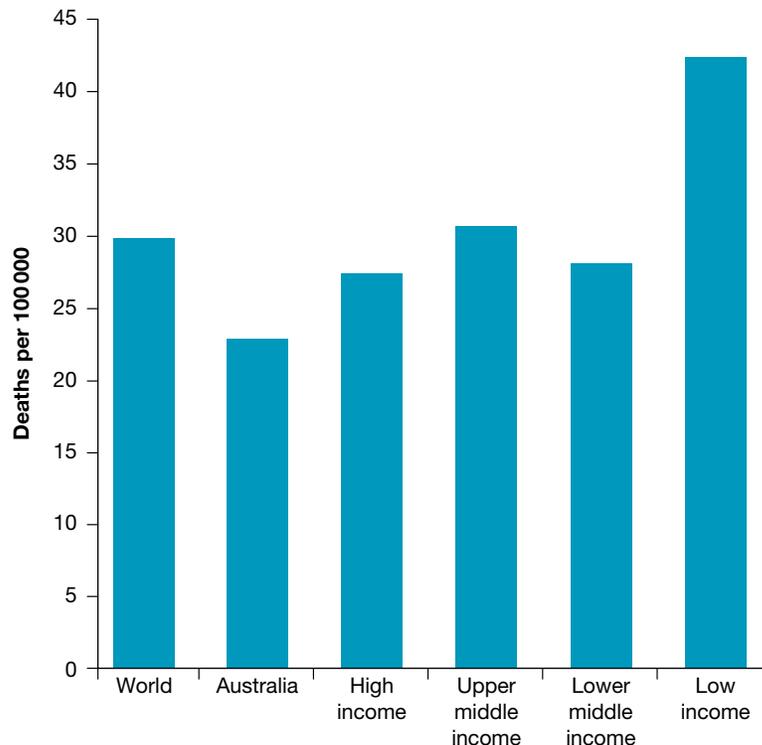


8.8.2 Alcohol

Global alcohol consumption increased in the 20 years to 2010 and has remained fairly stable since then, but the average amount of alcohol consumed in the different incomes groups has changed. Like tobacco companies, alcohol manufacturers have experienced a decrease in revenue in many high-income countries and are therefore increasingly marketing their products towards people in low- and middle-income countries. Many alcohol producers would have neglected this market in the past, but low- and middle-income countries now provide them with an additional source of income. Alcohol use is associated with about 3.5 per cent of global deaths and the impact of alcohol use will increase in low- and middle-income countries if this trend continues.

As in many low- and middle-income countries, alcohol consumption is a significant concern in Australia (see **FIGURE 8.55**). This is despite education and public awareness campaigns relating to alcohol misuse. However, accessibility of healthcare in Australia may reduce the measurable impact of alcohol misuse compared with that in low- and middle-income countries.

FIGURE 8.55 Age-standardised mortality rate per 100 000 due to alcohol consumption, 2019



Source: <https://vizhub.healthdata.org/gbd-compare/>

Global distribution and marketing of alcohol and its affect on health status and burden of disease

Low- and middle-income countries experiencing an increase in alcohol consumption are often those that have no cultural relationship with alcohol consumption and lack the resources to educate the population about alcohol, or to control alcohol consumption and care for those suffering the negative effects associated with excessive drinking, such as liver disease, cardiovascular disease and cancer. Alcohol misuse can dominate people's lives, which decreases the opportunities for them to lead healthy lives.

As with tobacco, if an individual's limited income is spent on alcohol, there may be less available to spend on food, clothing, shelter and healthcare. This directly impacts on the standard of living and increases the burden of disease.

8.8.3 Processed foods

Processed foods relate to any food items that have been deliberately changed before being made available to eat. Food processing can be as basic as drying or freezing a food to maintain freshness, or as complex as creating a food item from a range of ingredients such as a jar of pasta sauce, a cake mix or a microwave meal. Many processed foods are healthy and safe to consume on a regular basis, such as canned fruit and frozen vegetables. Others contain significant amounts of added salt, sugar and/or fat and should be consumed only sometimes and in small amounts, such as frozen pizzas, fast food hamburgers and French fries.

It is generally the unhealthier processed foods that are actively marketed to consumers and contribute to a range of negative health outcomes.

Global distribution and marketing of processed food and its affect on health status and burden of disease

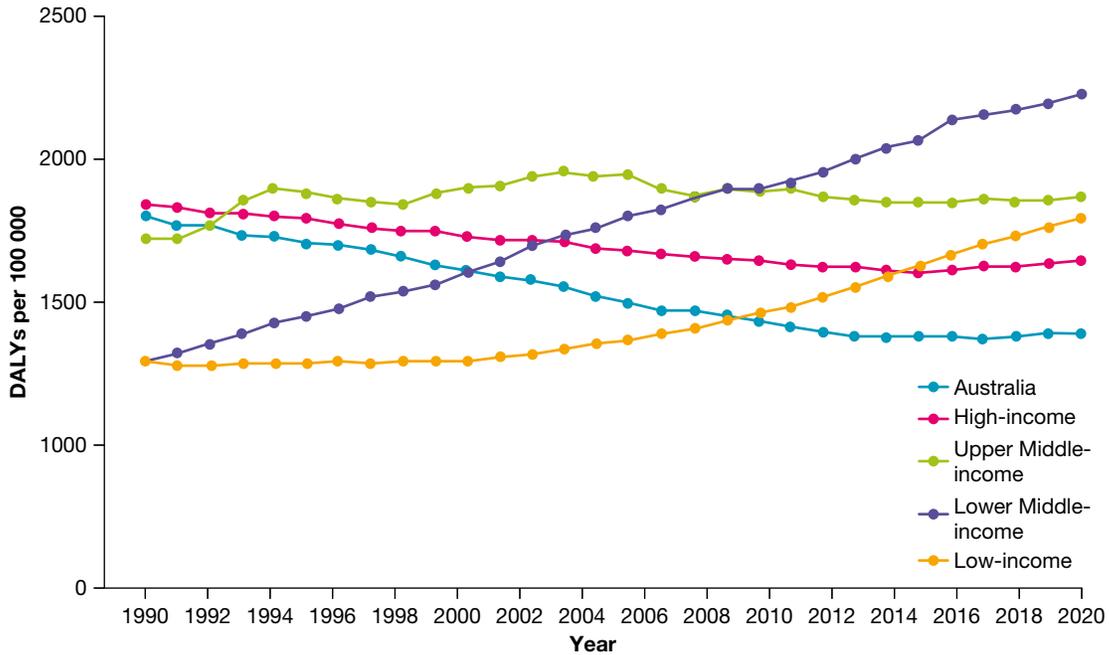
Companies producing processed foods have been marketing their products in low- and middle-income countries for years. Increasing incomes, and the migration of many people from rural areas to major cities, has increased access to processed foods, while the marketing of these products has increased their consumption in many low- and middle-income countries. As a result, many people have neglected their traditional diets, which are often low in fat, for westernised foods. These are often high in fat, salt and/or sugar and contribute to a more energy-dense diet (see **TABLE 8.4**). This is contributing to an increased incidence of lifestyle diseases such as obesity, hypertension and cardiovascular disease.

TABLE 8.4 Global and regional per capita food consumption (kJ per capita per day), actual and estimated

Region	1964–66	1974–76	1984–86	1997–99	2015	2030
World	9865	10 188	11 109	11 728	12 301	12 761
Low- and middle-income countries	8594	9004	10 251	11 217	11 924	12 468
High-income countries	12 330	12 824	13 414	14 142	14 403	14 644

Processed foods have been marketed in Australia for many years and have contributed to the high rates of overweight, obesity and related conditions, such as cardiovascular disease and type 2 diabetes, experienced in this country. According to the WHO, these causes of burden of disease are on the rise in low- and middle-income countries (see **FIGURE 8.56**). The rates of obesity among people of high socioeconomic status in Brazil and India are now comparable with the United States and Australia. Higher rates of obesity will result in higher rates of the associated conditions including cardiovascular disease, hypertension and diabetes. The WHO predicts the incidence of stroke deaths will double in the low- and middle-income countries over the next 20 years. China is already experiencing the effects of westernised diets, with more than one million people dying of stroke each year. High salt intake is thought to be largely responsible for this trend.

FIGURE 8.56 DALY per 100 000 people due to high body mass index over time



Source: Adapted from: <http://vizhub.healthdata.org/gbd-compare>

Many low- and middle-income countries now face a ‘double burden’ of disease. They are still experiencing high rates of undernutrition and other conditions associated with poverty, such as infectious diseases, in addition to increasing rates of conditions associated with wealth, such as obesity and cardiovascular disease. Quite often, the effects of obesity and undernutrition exist side by side in the same community. Chronic disease associated with a high intake of processed foods also impacts health status. For example, people with diabetes or cardiovascular disease may not be able to earn an income, which reduces their standard of living and may further increase their risk of chronic illness and premature death. Under-resourced health systems in many low- and middle-income countries mean that treatment for conditions related to obesity may not be available, further contributing to mortality rates that are already higher than those in high-income countries.

FIGURE 8.57 Many companies have been marketing their products in low- and middle-income countries for years, contributing to a range of impacts on health status.



8.8 Activity

Access the **Tobacco marketing** weblink and worksheet in the Resources tab and then complete the worksheet.

 **Digital document** Tobacco marketing worksheet (doc-32221)

 **Weblink** Tobacco marketing

8.8 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

8.8 Quick quiz

on

8.8 Exercise

8.8 Exam questions

Select your pathway

■ **LEVEL 1**

2, 3, 4, 7

■ **LEVEL 2**

1, 5, 6, 8, 9

■ **LEVEL 3**

10, 11

Test your knowledge

1.
 - a. Explain what is meant by the term 'globalisation'.
 - b. With a partner, brainstorm ways that globalisation could improve health status in low- and middle-income countries.
2. Explain the term 'global marketing'.
3. Outline three reasons for increasing rates of tobacco use in low- and middle-income countries.
4. Explain why tobacco companies have been specifically targeting low- and middle-income countries.
5. Discuss how excessive alcohol consumption could impact the burden of disease in Australia.
6.
 - a. According to **FIGURE 8.55**, which income group has the highest rate of deaths per 100 00 attributable to alcohol consumption?
 - b. Suggest reasons that might account for the higher rate of death attributable to alcohol consumption in these countries.
7.
 - a. Explain what is meant by 'processed foods'.
 - b. Are all processed foods unhealthy? Explain.
8.
 - a. Graph the energy intake for the world, high-, middle- and low-income countries using the data from **TABLE 8.4**.
 - b. Describe two trends from your graph.
 - c. Suggest reasons for the trends identified in part **b**.
 - d. Explain how these trends could impact on health status and burden of disease in both high-income and low- and middle-income countries.

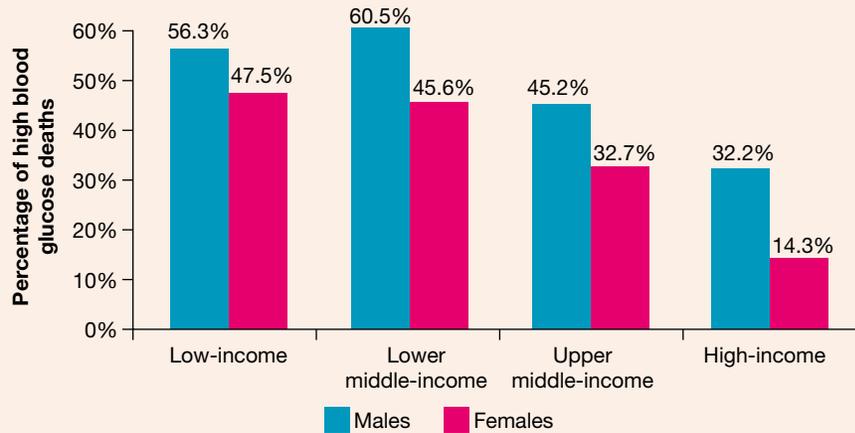
Apply your knowledge

9.
 - a. Outline the difference in tobacco use rates for males and females in Australia compared to middle-income countries.
 - b. Suggest reasons that might account for the differences identified in part **a**.
10. Discuss how tobacco use could contribute to poverty in low- and middle-income countries.
11.
 - a. Use **FIGURE 8.56** to compare the rate of DALY due to high body mass index between Australia and low-income countries over time.
 - b. Suggest reasons that may account for the difference in part **a**.

Question 1 (2 marks)

Source: VCE 2017, *Health and Human Development Exam, Q.9.b (adapted)*; © VCAA

The graph shows the percentage of deaths that were attributed to high blood glucose levels for males and females aged 20–69 years according to country income group in 2012.



The graph shows that there are differences in the percentage of deaths attributed to high blood glucose between high-income and low-income countries. **Discuss** how global marketing and access to healthcare could have contributed to these differences.

Question 2 (2 marks)

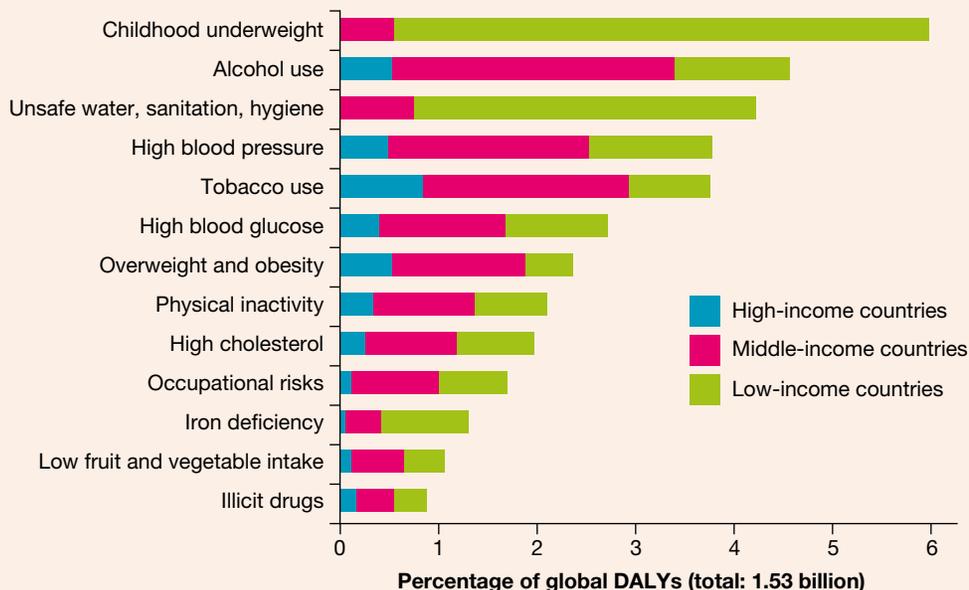
Source: VCE 2016, *Health and Human Development Exam, Q.14.a*; © VCAA

Obesity is placing a heavy burden on the world's population in both rich and poor countries. Almost 30 per cent of people globally are now either obese or overweight. Two-thirds of the obese population now live in developing countries, which also experience high rates of undernutrition.

Explain how global marketing has contributed to the increase in the number of people who are overweight or obese.

Question 3 (4 marks)

Source: VCE 2012, *Health and Human Development Exam, Section B, Q.3.b (adapted)*; © VCAA



- From the graph, **select** one of the risk factors common to all three income levels for which global marketing and distribution plays a role.
- Discuss** the influence that global marketing and distribution might have on the risk factor selected in part i.

Question 4 (3 marks)

Source: VCE 2010, Health and Human Development Exam, Section A, Q.9; © VCAA

The following table indicates the leading causes of death in 2004 globally, compared with the leading causes of death predicted in 2030.

TABLE 1 Leading causes of death globally – ranked 1 to 15 for 2004 and 2030 (predicted)

Leading causes of death, 2004 and 2030 compared			
2004		2030	
Diseases or injury	Rank	Rank	Diseases or injury
Ischaemic heart disease	1	1	Ischaemic heart disease
Cerebrovascular disease	2	2	Cerebrovascular disease
Lower respiratory infection	3	3	Lower respiratory infection
Chronic obstructive pulmonary diseases	4	4	Chronic obstructive pulmonary diseases
Diarrhoeal diseases	5	5	Road traffic injury
HIV/AIDS	6	6	Trachea, bronchus, lung cancer
Tuberculosis	7	7	Diabetes mellitus
Trachea, bronchus, lung cancer	8	8	Hypertensive heart diseases
Road traffic injury	9	9	Stomach cancer
Prematurity and low birthweight	10	10	HIV/AIDS
Neonatal infection and other	11	11	Nephritis and nephrosis
Diabetes mellitus	12	12	Self-inflicted injuries
Malaria	13	13	Liver cancer
Hypertensive heart diseases	14	14	Colon and rectum cancer
Birth asphyxia and birth trauma	15	15	Oesophagus cancer

Source: Adapted from: www.who.int, p.33

- a. Global marketing is considered to have a major influence on health status. **Select** one leading cause of death that is predicted to rise in ranking from 2004 to 2030 that could be due to the influence of global marketing. **1 mark**
- b. **Describe** how global marketing might contribute to this increased ranking. **2 marks**

Question 5 (2 marks)

Source: VCE 2004, Health and Human Development Exam, Q.1; © VCAA

Over 1300 million people in the world are current smokers (World Bank, 1999). If this behaviour continues in the twenty-first century the use of tobacco will lead to one billion deaths, eighty per cent of which will occur in low-income countries. Within twenty years, tobacco dependence could become the world's single largest cause of premature death or years lived with disability.

Outline how global marketing and distribution has contributed to increased smoking rates in low- and middle-income countries.

More exam questions are available in your learnON title.

8.9 KEY SKILLS

8.9.1 Describe characteristics of high-, middle-, and low-income countries



KEY SKILL Describe characteristics of high-, middle-, and low-income countries

Tell me

In order to describe characteristics of high-, middle- and low-income countries, a range of factors relating to each characteristic (economic, social and environmental) should be known.

It is important to remember that there are variations within and between countries in each income group, so making definite statements should be avoided. For example, it is incorrect to say: 'People in low-income countries are not educated, whereas those in high-income countries are.' Although differences in education are a social characteristic of high-, middle- and low-income countries, this statement implies that no-one in low-income countries is educated and everyone in high-income countries is, which is not true.

A more accurate statement would be: 'People in low-income countries are less likely to be educated than those in high-income countries.' As a general rule, phrases such as 'more (or less) likely to', 'higher (or lower) levels of', 'experience higher (or lower) rates of' ensure that the statement is not applied to every person within an income group.

Further, the characteristic should be phrased in relation to the focus of the question. For example, if the question asks for a social characteristic of a low-income country, simply using the term 'education' does not provide the context required to be considered a correct answer. 'Lower levels of education' would be appropriate in this instance. For high-income countries, 'high levels of education' would be acceptable. If a comparison between two types of countries is required, both countries should be referenced in the answer.

Show me

Each characteristic should be understood in enough detail to describe what it relates to. In the following example, gender equality is described and the differences in gender equality between high-, middle- and low-income countries are discussed.

Gender equality exists when both males and females experience the same opportunities in the society in which they live.¹ This relates to education, employment, income and decision-making that affect them. In high-income countries like Australia, women generally have the same opportunities as males and have greater choice in aspects of their life such as education and employment. In many middle- and low-income countries, however, females do not have the same opportunities as males in society.² Females may have limited opportunities for education and often work in fields tending crops and/or spend significant time collecting water and preparing meals.³

1 Gender equality is described.

2 A comparison between Australia and low- and middle-income countries is made.

3 Specific effects of gender inequality are provided.

Practise the key skill

1. Describe one economic and one environmental characteristic common among high-income countries.

8.9.2 Evaluate data to analyse similarities and differences between countries in relation to health status and burden of disease

tlvd-1922

KEY SKILL Evaluate data to analyse similarities and differences between countries in relation to health status and burden of disease

Tell me

Data analysis and evaluation is the focus of this key skill. Data may come in the form of tables, maps, charts, infographics and other graphs. As well as being able to use and interpret the data, it is important to be able to make statements about health status and burden of disease and the similarities and differences that occur between Australia and middle- and low-income countries. In order to do this effectively, it is necessary to have a thorough knowledge of the concepts of health status and burden of disease (including knowledge of the differences that occur in health status and burden of disease within and between countries).

Refer to the key skill ‘Use data to describe and evaluate the health status of Australians’ in section 2.6.1 for an explanation of interpreting data and evaluating the health status of Australians.

Once the data are evaluated and statements made, possible reasons for the similarities and differences can be explored.

Show me

TABLE 8.5 shows selected indicators for Australia and Brazil. By using the data presented in this table, it is possible to describe the health status of Australia compared with Brazil and explain possible reasons for a similarity and difference as shown in the data.

TABLE 8.5 Selected health indicators for Australia and Brazil

	Life expectancy, 2019		Under-five mortality rate, per 1000 live births, 2019	Adult literacy rates	% of total DALY attributed to:		
					Communicable diseases	Injuries	Non-communicable diseases
	Males	Females					
Australia	81.3	84.8	3.6	99*	3.34	5.74	90.92
Brazil	72.4	79.4	13.9	93	12.16	11.93	75.92

*Assumed rate for Australia.

Source: WHO, World Bank and IHME data.

A suggested approach is as follows:

Health status in Australia is better than that in Brazil according to the data presented in **TABLE 8.5**.⁴ The under-five mortality rate is lower in Australia than Brazil at 3.6 and 13.9 deaths per 1000 live births respectively.⁵ Safe water and sanitation may be more readily available for those in Australia compared to those in Brazil, which may contribute to this difference.⁶ Children are often the most susceptible to conditions such as cholera and dysentery, which can occur when clean water and sanitation are not readily available. These conditions can cause

4 A general statement about the overall health status experienced in the two countries is made.

5 A specific difference is identified, with evidence from the table used to support the statement. Use specific figures where appropriate.

6 A possible reason for the difference is identified.

death and may contribute to the difference in the under-five mortality rate between the two countries.⁷ In both Australia and Brazil, non-communicable diseases contribute to the greatest proportion of DALYs (90.92 per cent and 75.92 per cent of total DALY respectively).⁸ The marketing of processed foods in Australia and Brazil may contribute to deaths associated with non-communicable diseases such as cancer and cardiovascular disease. This factor could contribute to these two countries experiencing these conditions as the leading causes of death.⁹

⁷ Possible differences in water and sanitation are used to explain the difference in the under-five mortality rate.

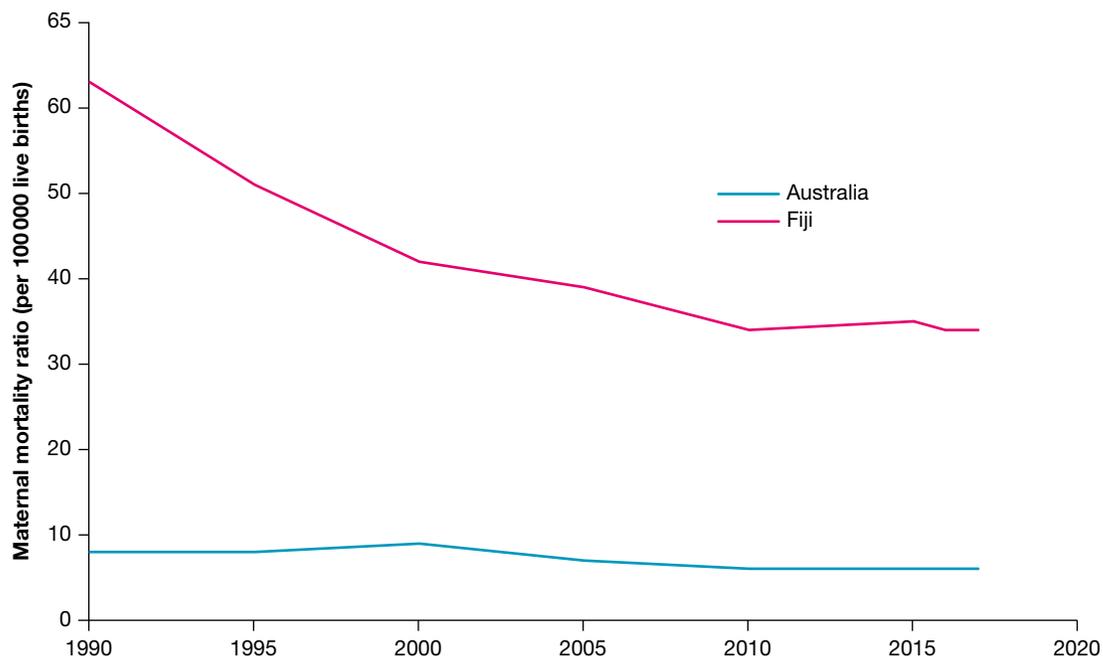
⁸ A similarity is identified with supporting evidence from the table included.

⁹ A possible reason is identified and linked to the similarity provided.

Practise the key skill

2. **FIGURE 8.58** shows the maternal mortality ratio over time in Australia and Fiji, an upper middle-income country. Using data from the graph, outline one similarity and one difference between Australia and Fiji

FIGURE 8.58 Maternal mortality ratio (per 100 000 live births) in Australia and Fiji from 1990 to 2017



Source: Adapted from: World Bank Data, 2021.

8.9.3 Analyse factors that contribute to health status and burden of disease in different countries and discuss their impact on health and wellbeing



tlvd-1923

KEY SKILL Analyse factors that contribute to health status and burden of disease in different countries and discuss their impact on health and wellbeing

Tell me

The factors set out in the study design are the ones that should form the focus of this key skill. They are:

- access to safe water
- sanitation
- poverty

- inequality and discrimination (race, religion, sex, sexual orientation and gender identity)
- global distribution and marketing of tobacco, alcohol and processed foods.

In addition to familiarity with these factors, it is necessary to be able to explain key aspects of each factor and how they contribute to health status and burden of disease. In particular, it is important to understand how these factors contribute to the differences and similarities in health status and burden of disease in Australia when compared with low- and middle-income countries.

This skill also requires links to be made between each factor and aspects of health and wellbeing (physical, social, emotional, mental and/or spiritual).

Show me

In the following example, poverty is first described. Then it is discussed in relation to its impact on health status and burden of disease, and the associated impacts on health and wellbeing in low-income countries compared to Australia.

Poverty relates to deprivation of resources and often occurs as a result of low income.¹⁰ Poverty can be measured using extreme poverty, which is a measure of the proportion of the population living on less than US\$1.90 per day. It can also be measured using relative poverty, which is a measure of the proportion of a population living on less than 50 per cent of the average income of the country in which they reside.¹¹

Poverty in low-income countries is more prevalent than in high-income countries like Australia. This means that those in low-income countries are less able to afford products that can enhance health status and reduce burden of disease including food, safe water and healthcare.¹² As a result, those in low-income countries are more susceptible to conditions such as diarrhoeal disease, which contribute significantly more DALY in low-income countries from under-five and maternal mortality¹³ compared to Australia, where the ability to access these resources is greater, due to higher average incomes.

From an individual perspective, poverty can mean that families do not have enough food to eat. This can lead to not having enough energy¹⁴ to complete daily tasks such as going to school, which is an aspect of physical health and wellbeing.¹⁵ Poverty can mean that children cannot attend school. This can mean that they do not have the opportunity to socialise with children their own age, which impacts social health and wellbeing. If individuals are not able to participate in activities such as education, employment and recreation due to poverty, they may feel that they are not connected to the world they live in, which is an aspect of spiritual health and wellbeing.¹⁶

10 The meaning of poverty is stated.

11 Two measures of poverty are identified and explained.

12 Factors that link poverty to burden of disease are identified to make the eventual link to burden of disease more meaningful.

13 Specific links to health status and burden of disease are provided.

14 A specific link is made between poverty and physical health and wellbeing.

15 The dimension of health and wellbeing is identified.

16 Links are also made to two other dimensions of health and wellbeing, showing a greater level of understanding than linking to one dimension only.

Practise the key skill

3. Explain what is meant by 'sanitation'.
 4. Explain how sanitation can contribute to variations in health status and burden of disease between low-income countries and Australia.
 5. Explain how sanitation can promote the health and wellbeing of females globally.
-

8.9.4 Compare health data and other information to analyse reasons for health inequalities within and between nations



tlvd-1924

KEY SKILL Compare health data and other information to analyse reasons for health inequalities within and between nations

Tell me

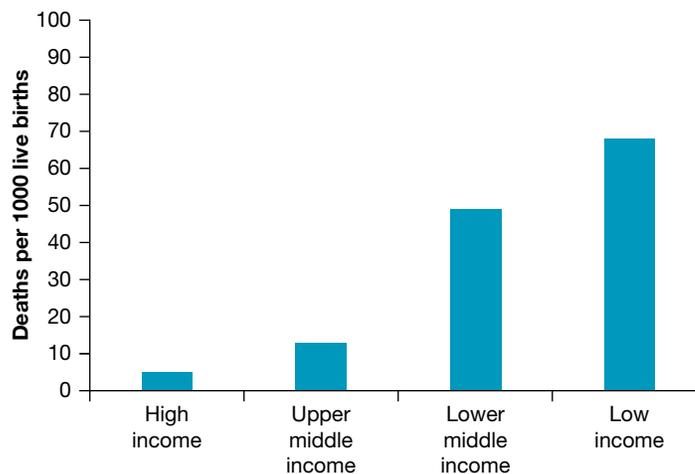
This skill requires the interpretation of information. The information can come in the form of data or other formats such as case studies.

The information will provide stimulus that can be used to analyse reasons for health inequalities within and between countries. The information may relate to health outcomes, such as life expectancy, or factors that contribute to differences, such as discrimination and access to safe water.

Show me

The following discussion uses data in **FIGURE 8.59** to explain the relationship between average income and under-five mortality, and then discusses reasons for the relationship.

FIGURE 8.59 Under-five mortality rate (per 1000 live births) in World Bank income groups, 2019



Source: Adapted from: <https://data.worldbank.org/indicator/SH.DYN.MORT>

As average income decreases, the rate of under-five deaths increases.¹⁷ For high-income countries, the under-five mortality rate is around 5 per 1000 live births. This increases to around 15 per 1000 live births for upper middle-income, 50 per 1000 live births for lower middle-income and 70 per 1000 live births for low-income countries.¹⁸

Higher average incomes in high-income countries increase the capacity of people to afford resources such as food.¹⁹ Adequate food promotes immune system function and assists in fighting off infectious diseases, which are a leading cause of death for children under-five globally.²⁰

In low-income countries, low average incomes prevent many people from accessing these resources, which contributes to the higher rates of mortality for those aged under five.²¹ Compared to those in high-income countries, governments in low-income countries are less able to afford installing infrastructure such as safe water and sanitation systems.²²

¹⁷ The relationship between average income and under-five mortality is stated.

¹⁸ Data with the correct unit are used to clarify the relationship.

¹⁹ A link between average income and food availability is established.

²⁰ The relationship between food intake and under-five mortality is described.

²¹ A comparison between low- and high-income countries is presented.

²² The relationship between average income and the provision of infrastructure is stated.

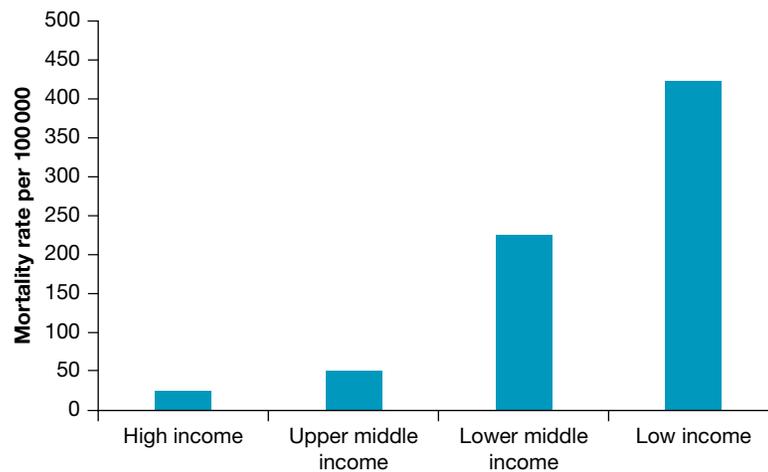
As a result, many children are forced to drink unsafe water, increasing their risk of diseases including diarrhoeal diseases, which are leading causes of under-five deaths.²³

²³ Infrastructure and, specifically, access to water and sanitation, is used to provide a reason for the relationship stated at the beginning of the response.

Practise the key skill

6. **FIGURE 8.60** shows the mortality rate for communicable (infectious) diseases in the World Bank income groups.
 - a. Using data, outline the difference in mortality rates due to communicable diseases between low- and high-income countries.
 - b. Identify two factors and explain how each may contribute to the difference outlined in part a.
7. Rates of depression are higher for transgender people compared to cisgender people. Discuss possible reasons for this difference.

FIGURE 8.60 Mortality rate due to communicable diseases (per 100 000) World Bank income groups, 2019



Source: Adapted from: <http://vizhub.healthdata.org/gbd-compare>

8.10 Review

8.10.1 Topic summary

8.2 Economic characteristics of high-, middle- and low-income countries

- Countries can be classified as high-, middle- and low-income.
- There are many characteristics common to high-, middle- and low-income countries, including economic, social and environmental characteristics.
- Most of the world's population live in low- and middle-income countries.
- Economic characteristics of high-income countries include low levels of poverty, a wide range of industries, opportunities for global trade and high average incomes.

8.3 Social and environmental characteristics of high-, middle- and low-income countries

- Social characteristics of high-income countries include higher levels of gender equality, low birth rates and population growth, high levels of employment, high levels of education, developed social security systems, developed health systems, access to technology and developed legal systems.
- Environmental characteristics of high-income countries include access to safe water and sanitation, food security, adequate housing, adequate infrastructure and high levels of carbon dioxide emissions.

8.4 Similarities and differences in health status and burden of disease in low-, middle- and high-income countries

- Low- and middle-income countries are more susceptible to fluctuations in their health status.
- Low- and middle-income countries generally have lower life expectancy and higher death rates than high-income countries.
- Child and adult mortality rates are higher in low- and middle-income countries than they are in Australia.
- As the average income decreases, so does health status. Low-income countries, for example, experience worse health status than middle- and high-income countries.
- Low- and middle-income countries experience much higher rates of communicable disease such as HIV/AIDS and malaria.
- Many low- and middle-income countries are experiencing economic growth and have a small percentage of wealthy people. As a result, they experience a 'double burden'. While dealing with the issues of a low-income country (such as undernutrition and communicable diseases), they also have to deal with diseases of affluence that usually affect high-income countries (such as cardiovascular disease and obesity).

8.5 Access to safe water and sanitation as factors affecting health status and burden of disease

- Clean water is required for a range of human functions. Lack of access to safe water contributes to the high rates of infectious diseases and premature death in low- and middle-income countries.
- Sanitation relates to the safe removal of human waste from the immediate environment. Around a third of the world's population lack access to adequate sanitation, contributing to higher rates of infectious diseases and U5MR.

8.6 Poverty as a factor affecting health status and burden of disease

- Millions of people in low- and middle-income countries live on less than US\$1.90 per day, which contributes to poor health status by limiting access to food, water, healthcare, education and shelter.

8.7 Inequality and discrimination as factors in health status and burden of disease

- Minority population groups are often discriminated against in education, employment and social inclusion, resulting in poorer health status.

8.8 Global distribution and marketing of tobacco, alcohol and processed foods as factors in health status and burden of disease

- Low and middle-income countries have been specifically targeted by manufacturers of tobacco, alcohol and processed foods, and this is contributing to an increase in non-communicable diseases in these countries.

8.10.2 Key terms

Acquired immune deficiency syndrome (AIDS) the most advanced stage of HIV infection

Communicable diseases infectious diseases that are transmitted from the environment; including through air, water, food and other infected organisms (including other humans)

Discrimination when a person or group of people is treated differently than other people, often a result of factors such as race, religion, sex, sexual orientation and gender identity.

Double burden of disease when conditions associated with both poverty and wealth exist side-by-side in one community, such as undernutrition and obesity

Extreme poverty living on less than US\$1.90 per day

Gender equality when males and females have equal rights, responsibilities and opportunities

Globalisation the process whereby boundaries between countries are reduced or eliminated allowing individuals, groups and companies to act on a global scale. It can be described as transforming the different societies of the world into one global society. A reduction in barriers to trade, communication and transport contributes to this process.

Gross Domestic Product (GDP) a measure that reflects the economic state of a country. GDP is the value of all goods and services produced in a country in a 12-month period.

Gross National Income (GNI) the total value of goods and services a country's citizens produce, including the value of income earned by citizens who may be working in an overseas country

Human immunodeficiency virus (HIV) an infection that results in the gradual depletion and weakening of the immune system, resulting in increased susceptibility to other infections such as pneumonia and tuberculosis

Human rights relates to the freedoms and conditions to which every person is entitled

Latrine a simple communal toilet facility, often a trench dug in the ground or a pit

Malaria a communicable disease that is transmitted via infected mosquitoes

Marketing the activities of a company associated with selling a product or service, including advertising, selling and delivering products to people

Non-communicable diseases conditions that are usually long-lasting and generally progress slowly. Non-communicable diseases are not spread through the environment and include cardiovascular disease, cancer, respiratory diseases and diabetes.

Primary production the process of producing natural products for human use such as plants and animals

Subsistence farming self-sufficient farming carried out by individuals to provide food for themselves and their family

Urban slums a settlement, neighbourhood or region comprised of housing that does not provide the essential conditions required to live a healthy life

8.10.3 Extended response: build your exam skills

tlvd-
2883

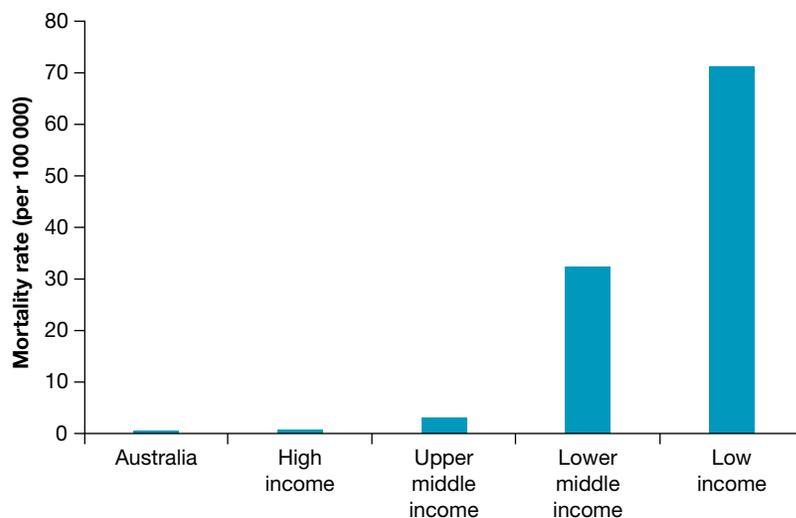
The following relates to tuberculosis (TB), an infectious disease.

Source 1

- TB is a contagious bacterial disease that especially affects the lungs, causing fever-like symptoms and destruction of tissue. It can also spread to many other parts of the body, causing secondary problems and often death if not treated.
- TB spreads through the air from one person to another. The bacteria can be released into the air when a person with the bacteria in their lungs or throat coughs, speaks, or sings. People nearby may breathe in these bacteria and become infected.
- TB is NOT spread by shaking someone's hand, sharing food or drink, touching bed linens or toilet seats, sharing toothbrushes or kissing.
- TB can be prevented through a range of interventions, including vaccination.
- TB can be effectively treated with appropriate medical care.

Source 2

The following graph shows age-standardised mortality rates (per 100 000) due to TB in Australia and the World Bank income groups in 2019.



Source: Adapted from IHME, 2021.

Source 3

According to the AIHW, in Australia:

- at the beginning of the twentieth century, TB was a major cause of death, ranking second among males and first among females.
- deaths from TB were virtually eliminated by the 1980s. In 1907 the death rates were 121 and 93 deaths per 100 000 population for males and females respectively; by 2000 they were less than 1 per 100 000.
- those with a healthy immune system may be able to avoid clinical illness even if infected, but in those with a weakened immune system the chances of becoming ill are greater.
- instances of TB still occur in migrant populations and in persons with immunity-depressing conditions such as HIV/AIDS.

Source: AIHW 2005. *Mortality over the twentieth century in Australia: Trends and patterns in major causes of death*. Mortality Surveillance Series no. 4. AIHW cat. no. PHE73. Canberra: AIHW.

Use the information provided and your own knowledge to analyse reasons that may account for the change in health status relating to TB in Australia over time and the variations in health status due to TB that exist between Australia and low-income countries.

10 marks

TIPS

- First, break the question down into parts.
- Once the question is broken down, remember to incorporate your own knowledge relating to reasons for changes in health status in Australia over time. Old public health and biomedical interventions are particularly relevant in this instance. Your understanding of low-income countries should also be used to discuss why the improvements experienced in Australia are not universal.
- When using data, ensure to use the correct units and approximate the values the data presents.
- Colour coding should be used to ensure all elements of the question are addressed and citing the relevant sources in the response will help to ensure that all are included at some stage in the response.

8.10 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

8.10 Exam questions

8.10 Exam questions

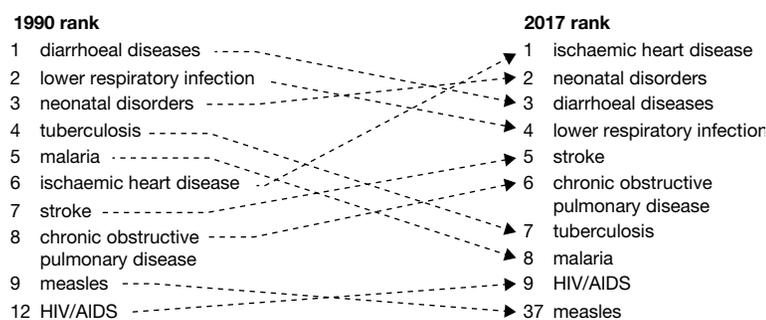
Question 1 (8 marks)

Source: VCE 2020, Health and Human Development Exam, Q.9; © VCAA

a. **Outline** two characteristics of a low-income country.

2 marks

Ranking of diseases in low-income countries, both sexes, all ages, per cent of total deaths



b. Use one of the diseases listed in the diagram above to **explain** how the global distribution and marketing of tobacco may have contributed to the change in the percentage of total deaths in low-income countries between 1990 and 2017.

2 marks

c. The percentage of total deaths due to tuberculosis and malaria decreased between 1990 and 2017. For either tuberculosis or malaria **explain** how the biomedical and social models of health may have led to a reduction in the percentage of total deaths caused by your selected disease between 1990 and 2017.

4 marks

Question 2 (11 marks)

Source: VCE 2020, Health and Human Development Exam, Q.10; © VCAA

Country	Life expectancy at birth 2018	Under five mortality rate (death per 1000 live births)	Maternal mortality ratio 2017	Access to basic drinking water services	Access to basic sanitation services (%) 2017	Total fertility (live births per woman) 2018	GNI per capita (US\$) 2018
Afghanistan	64	62	638	67	43	45	550
Australia	83	4	6	100	100	1.8	53250
Mexico	75	13	33	99	91	2.1	9180
Italy	83	3	2	99	99	1.3	33770
Fiji	67	26	34	94	95	2.8	5860

Sources: UNICEF, *The State of the World's Children 2019: Children, food and nutrition: Growing well in a changing world*, UNICEF, New York, 2019, pp. 192, 193, 196, 197, 200, 201, 240 and 241 (all except GNI per capita); The World Bank, GNI per capita, Atlas method (current US\$), <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD>

- a. **Identify** one country that would be considered a middle-income country and use data from the table above to justify your response. **2 marks**
- b. Using data from the table above, **discuss** how access to basic drinking water and basic sanitation services could have an impact on health status. **3 marks**
- c. **Describe** how poverty and inequality and discrimination based on sex could have an impact on health status and health and wellbeing. **6 marks**

Question 3 (3 marks)

Besides income, **outline** one economic, one social and one environmental characteristic of middle-income countries.

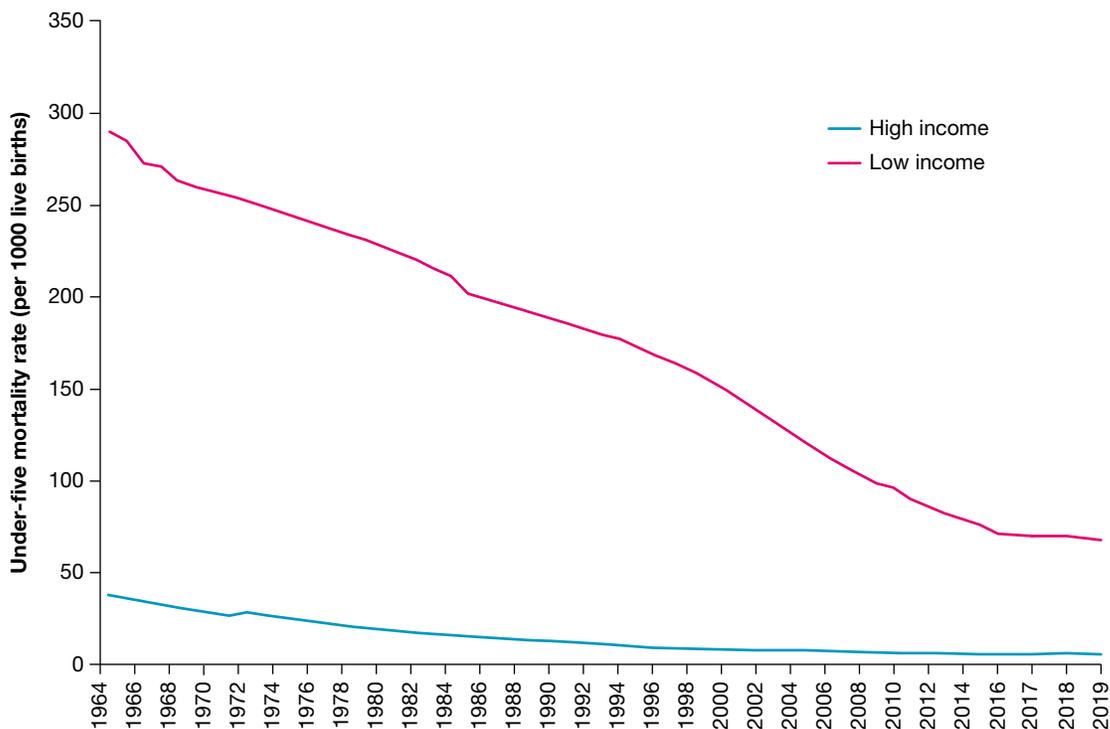
Question 4 (3 marks)

Explain how discrimination can contribute to inequality in health status within countries.

Question 5 (8 marks)

FIGURE 8.61 relates to the U5MR over time in low- and high-income countries (per 1000 live births).

FIGURE 8.61 Under-five mortality rate (per 1000 live births) in low- and high-income countries over time



Source: <http://data.worldbank.org/indicator/SH.DYN.MORT?locations=XM&view=chart>

- a. Using data, **outline** one similarity between low- and high-income countries in relation to the U5MR. **1 mark**
- b. **Identify** one factor and **explain** how it may contribute to the similarity identified in part a. **2 marks**
- c. Using data, **outline** the difference between low- and high-income countries in relation to the U5MR in 2017. **1 mark**
- d. **Identify** two factors and **explain** how each may contribute to the difference identified in part c. **4 marks**

on Resources

- Digital document** Key terms glossary (doc-36130)
- Exam question booklet** Topic 8 Exam question booklet (eqb-0062)
- Interactivities** Crossword (int-6893)
Definitions (int-6894)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 8 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 8.1 Key terms glossary (doc-36130)
- 8.4 HIV/AIDs worksheet (doc-32222)
Malaria worksheet (doc-32216)
- 8.5 Water worksheet (doc-32217)
Sanitation in India worksheet (doc-32218)
- 8.6 Poverty worksheet (doc-32219)
- 8.7 Girl effect worksheet (doc-32220)
- 8.8 Tobacco marketing worksheet (doc-32221)
- 8.10 Summary (doc-36143)
Key terms glossary (doc-36130)

Exam question booklets

- 8.1 Topic 8 Exam question booklet (eqb-0062)
- 8.10 Topic 8 Exam question booklet (eqb-0062)

Weblinks

- 8.4 HIV/AIDs
Malaria
- 8.5 Water
Sanitation in India
- 8.6 Poverty
- 8.7 Girl effect
- 8.8 Tobacco marketing

Teacher-led videos

- 8.9 Key skill: Describe characteristics of high-, middle- and low-income countries (tlvd-1921)

Key skill: Evaluate data to analyse similarities and differences between countries in relation to health status and burden of disease (tlvd-1922)

Key skill: Analyse factors that contribute to health status and burden of disease in different countries and discuss their impact on health and wellbeing (tlvd-1923)

Key skill: Compare health status and other information to analyse reasons for health inequalities within and between nations (tlvd-1924)

- 8.10 Extended response: build your exam skills (tlvd-2883)

Interactivities

- 8.4 Proportion of the population that can expect to live to age 65 (%), males and females, 2019 (int-8518)
Mortality rates for broad disease and injury groups – globally, in Australia and in the World Bank income groups, 2019 (int-8519)
YLL rate in selected groups and Australia due to selected causes, 2019 (int-8520)
Years of life lost to certain conditions as a percentage of the total years of life lost, 2019 (int-8521)
YLD rate in selected groups and Australia due to selected causes, 2019 (int-8522)
- 8.8 DALY per 100 000 people due to high body mass index over time (int-8523)
- 8.10 Crossword (int-6893)
Definitions (int-6894)

To access these online resources, log on to www.jacplus.com.au.

9 Sustainability and human development

LEARNING SEQUENCE

9.1 Overview	501
9.2 The economic dimension of sustainability	502
9.3 The social dimension of sustainability	507
9.4 The environmental dimension of sustainability	512
9.5 The concept of human development	517
9.6 The advantages and limitations of the Human Development Index.....	523
9.7 KEY SKILLS	531
9.8 Review	533



9.1 Overview

Key knowledge	Key Skills
The concept and dimensions of sustainability (environmental, social, economic) and its role in the promotion of health and wellbeing	Explain sustainability (environmental, social, economic) and its importance in the promotion of health and wellbeing in a global context
The concept of human development, including advantages and limitations of the Human Development Index	Explain the Human Development Index and evaluate its usefulness in measuring human development of countries

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Biodiversity	Human Development Index
Economic sustainability	Non-renewable resources
Ecosystem	Renewable resources
Environmental sustainability	Social sustainability
Human development	Sustainability

Exam terminology

Explain Make plain, make clear (may require reasons)

Evaluate Make a judgement, weigh up the pros and cons

Resources

 **Digital document** Key terms glossary (doc-36131)

 **Exam question booklet** Topic 9 Exam question booklet (eqb-0063)

9.2 The economic dimension of sustainability

KEY CONCEPT Understanding the concept of sustainability — economic sustainability

Promoting health and wellbeing is the goal of governments, non-government groups and individuals globally. Ensuring improvements in health and wellbeing are sustainable is an important consideration in this process.

9.2.1 Sustainability

Sustainability is defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. This refers to meeting today's needs and planning the country's growth without creating problems or depleting resources for future generations. The United Nations considers three dimensions of sustainability, which are related to the three types of characteristics of low-, middle- and high-income countries explored in topic 8. Like the characteristics, the three dimensions of sustainability are related and influence each other. For example, sustainable access to clean water (environmental sustainability) can promote social sustainability as girls will not have to spend time collecting water and are more likely to be able to access a decent education. A more educated population will be more innovative in relation to developing new industries (economic sustainability).

The three dimensions are often referred to as the three pillars of sustainability, as they all play a role in achieving overall sustainability (see **FIGURE 9.1**).

FIGURE 9.1 The three dimensions of sustainability are all important in promoting overall sustainability.



on Resources

Teacher-led video Concepts of sustainability (tlvd-0265)

9.2.2 Economic sustainability

This dimension relates to the capacity of future generations to earn an income and the efficient use of resources to allow economic growth over time. Low- and middle-income countries often experience low levels of economic sustainability.

Economic sustainability means ensuring that average incomes in all countries are adequate to sustain a decent standard of living and continue to rise in line with inflation and living costs in the future. Adequate incomes also mean that the government receives more funds through taxation and can provide public services to promote the health and wellbeing of its citizens. There are many ways that economic sustainability can promote health and wellbeing and some examples include:

- *ensuring that all people can earn a decent income* — This allows people to purchase health-promoting resources including food, shelter, education and basic healthcare. This promotes physical health and wellbeing by providing energy and

Sustainability meeting the needs of the present without compromising the ability of future generations to meet their own needs

Economic sustainability ensuring that average incomes in all countries are adequate to sustain a decent standard of living and continue to rise in line with inflation and living costs in the future

the means to prevent and treat many common conditions. Mental health and wellbeing is also promoted as individuals feel confident that they can provide for their family.

- *increasing the capacity of governments to provide services and infrastructure* — The provision of infrastructure for clean water and sanitation promotes physical health and wellbeing by reducing the risk of infectious diseases. Public education and transport systems promote the ability of people to earn an income in the future, which contributes to positive thought patterns and promotes mental health and wellbeing.
- *ensuring children can stay in school* — Economic sustainability means children will not be forced into labour due to poverty; instead they may remain at school. This promotes social interaction, which is an aspect of social health and wellbeing. Education can assist in providing a sense of meaning and purpose in life, promoting spiritual health and wellbeing.

EXAM TIP

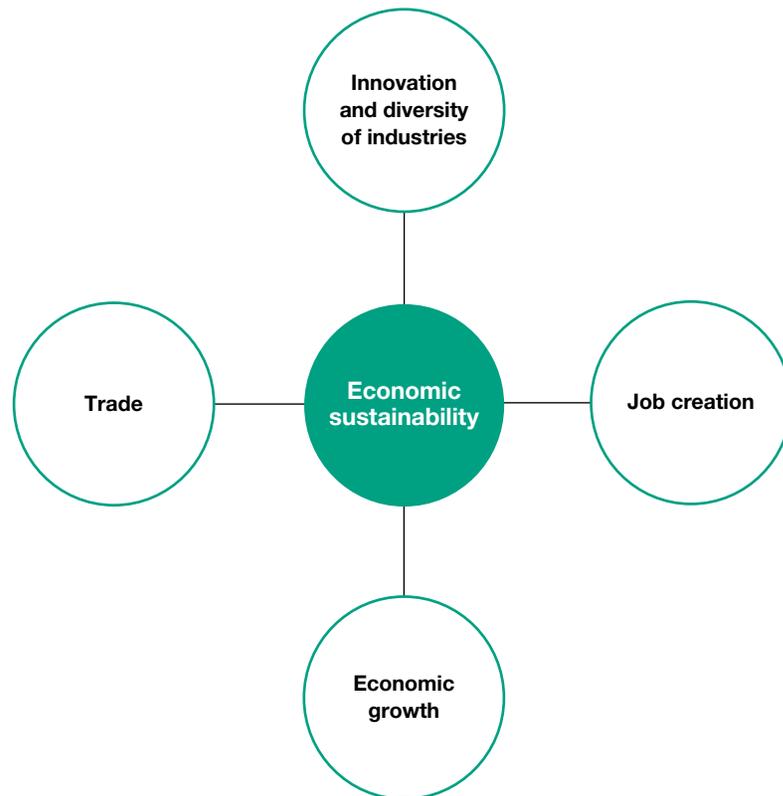
Each dimension of sustainability has the potential to promote health and wellbeing in countless ways and it is not possible to explore each possible impact in this topic. It is important to practise making links between the three dimensions of sustainability and the five dimensions of health and wellbeing. Provided the explanation is logical, it will be eligible for marks.

FIGURE 9.2 Economic sustainability increases governments' capacity to build and maintain infrastructure, such as transport systems.



To ensure economic sustainability and the associated benefits for health and wellbeing, consideration must be given to the factors identified in **FIGURE 9.3**.

FIGURE 9.3 Considerations for economic sustainability

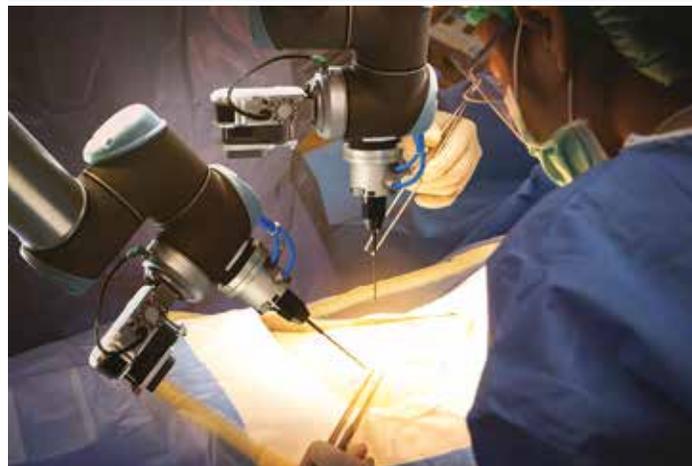


Innovation and diversity of industries

Countries require a range of industries to promote economic growth and stability. Many low- and middle-income countries rely on agriculture as their sole industry, which is heavily dependent on factors such as weather patterns and global markets, which are unstable and can prevent the economy from growing. A range of industries are required to ensure that interruptions to specific industries (such as a drought for the agricultural industry) will not cause economic catastrophe within a country. Research and development is required to establish industries that can provide sustainability and be a vehicle for economic growth.

Diversity of industry is a concern for all countries. Many of the established industries in high-income countries are undergoing significant change due to technological advancements including robotics and automation. As a result, new and innovative industries must be developed to ensure average incomes can be maintained and improved for the next generation.

FIGURE 9.4 Technological advancements, such as robotics, require high-income countries to develop new industries to maintain high average incomes.



Job creation

Job creation is a particular concern in low- and middle-income countries, but all countries experience the negative impacts of unemployment. Adequate employment opportunities are a vital component of economic sustainability because people can earn a wage, avoid poverty and contribute to their country's economy. As the world's population grows, economic sustainability will mean more jobs are required so all people of working age have the opportunity to work. Ensuring industries continue to evolve is an important part of job creation.

Economic growth

Ensuring economic sustainability requires sustained growth in Gross National Income (GNI) per capita to counter the impact of inflation, and to ensure that governments can continue to provide services, infrastructure and developments relating to industry. Although the GNI per capita is growing in most countries, if all people are to share in the benefits of a growing economy, a more equitable distribution of income is required.

Future generations must be able to enjoy the health-related benefits of sustained economic growth, therefore, the means by which economic growth is achieved must be a consideration for the current generation. For example, depleting natural resources such as coal may provide economic growth for the current generation, but this resource will not be available for future generations to use for their own economic growth. Achieving economic growth must not be done in a manner that decreases the ability of future generations to sustain economic growth and enjoy the associated benefits for health and wellbeing.

Trade

Producers in low- and middle-income countries must be able to trade their goods on the global market to increase their incomes and assist in growing their country's economy. In an attempt to keep prices low in high-income countries, producers in low- and middle-income countries have traditionally been paid less than what their products are worth. This unfair trading model has made it difficult for lower income countries to promote their economy and reduce poverty.

Unfair trade prevents poor countries adding value to their exports. Low- and middle-income countries often lack the processing capabilities to turn their raw products into something more valuable. Take coffee, for example. A jar of coffee costs a lot more than the cost of the beans that were required to make it. Much of this difference is due to the production process that the raw coffee beans undergo, such as roasting and packaging. If low- and middle-income countries could process the beans themselves, they could make a greater profit. The price coffee producers receive for their raw beans in low- and middle-income countries is often not sufficient to develop production industries, which perpetuates the poverty cycle.

Fair trade is seen as an opportunity to reverse this pattern. Fair trade is about achieving greater opportunities for international trade, decent working conditions and fair prices for producers in low- and middle-income countries. With a greater focus on fair trade, those in low- and middle-income countries have more opportunities to receive a fair price for their products, which assists in reducing poverty and achieving a more equal spread of wealth around the world. Poverty reduction is an essential component in the promotion of health and wellbeing globally.

FIGURE 9.5 Trade is an important component of economic sustainability.



9.2 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

9.2 Quick quiz



9.2 Exercise

9.2 Exam questions

Select your pathway

■ LEVEL 1

2, 3

■ LEVEL 2

1, 4, 5, 6

■ LEVEL 3

7, 8

Test your knowledge

- Explain what is meant by the term 'sustainability'.
 - Explain why sustainability is an important consideration for promoting health and wellbeing.
- Identify the three dimensions of sustainability.
- Explain what is meant by 'economic sustainability'.
- Explain why the development of new industries is important for low- and middle-income countries.
- Explain why the development of new industries is important for economic sustainability in high-income countries.

Apply your knowledge

- Outline the four factors that are important for economic sustainability.
- Explain one way that each factor outlined in question 6 can promote health and wellbeing.
- Explain how achieving economic sustainability could assist in reducing the global maternal mortality ratio.

9.2 Quick quiz



9.2 Exercise

9.2 Exam questions

Question 1 (2 marks)

Source: VCE 2013, *Health and Human Development*, Section A, Q.9; © VCAA

How does the United Nations (UN) **define** 'sustainability'?

Question 2 (1 mark)

Define 'economic sustainability'.

Question 3 (3 marks)

Identify a characteristic of economic sustainability and describe how it promotes health and wellbeing.

Question 4 (2 marks)

Read the following case study.

Malawi Seeds of Hope

The planting of trees as a renewable resource will benefit the people of Malawi in many ways. In the short term, new trees provide food and raw materials. Long-term benefits include storage, shade and enriched soil. For example, baobab leaves are consumed as a vegetable and can be harvested just one year after planting a seedling. Within five years, the trees begin to bear fruit, which can also be eaten or sold. The bark of the tree can be harvested for use as a strong, durable fibre to make twine, rope or other building materials. The bark grows back and can be harvested every two to five years.

In the subtropical climate of Malawi, the oxygen and water condensation released to the atmosphere by trees is critical for rain to protect the people and the land from drought and famine. Additionally, the tree's root systems help prevent soil degradation and erosion, while the trees themselves provide shade and protection to people and animals alike.

Explain how the concept of sustainability is reflected in the above case study.

More exam questions are available in your learnON title.

9.3 The social dimension of sustainability

KEY CONCEPT Understanding the concept of sustainability — social sustainability

The focus of **social sustainability** is people's health and wellbeing. Social sustainability can be defined as creating an equitable society that meets the needs of all citizens and can be maintained indefinitely. The underlying aim of social sustainability is to ensure that all people have their human rights upheld, can participate in the society in which they live, participate in the decisions that affect their lives, and experience equal access to resources such as food, shelter, education, healthcare, employment, clean water, sanitation, clothing, recreation and leisure. To be socially sustainable, progress must lead to improvements in the health and wellbeing of all people over time, especially those who currently experience inequality. To ensure social sustainability, a number of conditions must be available to all people (see **FIGURE 9.6**).

FIGURE 9.6 Considerations for social sustainability



9.3.1 Elimination of poverty and the provision of social protection systems

Globally, hundreds of millions of people live in poverty, with the majority living in low- and middle-income countries. Although the economies of many countries are experiencing growth, unequal access to financial resources continues to create a divide between rich and poor. In order for improvements in health and wellbeing to be sustainable, all people must be able to enjoy the benefits that can accompany economic growth.

Social protection systems provide support for vulnerable people who are unable to earn an income, including as the result of illness or unemployment. Social protection systems assist in providing access to essential resources such as housing, food and basic healthcare. In Australia, income support is available through the

Social sustainability creating an equitable society that meets the needs of all citizens and can be maintained indefinitely

federal government body Centrelink. In many low- and middle-income countries, the absence of social protection systems drive vulnerable groups further into poverty.

If poverty is eliminated, all people can access the resources required for a decent standard of living, such as education, food, clean water, adequate housing and sanitation. This promotes health and wellbeing by:

- reducing the risk of infectious diseases and promoting physical health and wellbeing
- increasing mental health and wellbeing as people are less likely to experience stress and anxiety due to limited access to resources such as food and healthcare.
- enabling people to be better equipped to deal with misfortune, which promotes emotional health and wellbeing.

9.3.2 Gender equality

Gender equality is still a significant issue globally. The achievement of optimal health and wellbeing is not possible if half the population is denied human rights and equal opportunities.

Women and girls must be able to access the same opportunities as men and boys in relation to education, employment, leadership and decision making. Gender equality means more educated people working productively, which promotes economic sustainability, an essential component of overall sustainability. As well as contributing to economic growth, gender equality can promote spiritual health and wellbeing, as females feel more a part of the society in which they live if they are socially included. By having more say in their lives, females may feel more satisfied with life, which can promote emotional health and wellbeing.

Gender equality includes the elimination of all forms of discrimination and violence against women and girls. This assists in promoting health and wellbeing in a number of ways, including:

- improved physical health and wellbeing, as women will be less likely to experience injuries as a result of violence
- decreased stress levels, as women will be less worried about the impacts of violence and discrimination, which promotes mental health and wellbeing
- improved social health and wellbeing, as females will be more empowered to make their own decisions about their lives, such as whether and whom they marry.

FIGURE 9.7 Gender equality in education is vital for social sustainability.



9.3.3 Access to safe and decent working conditions

Safe and decent working conditions ensure that all people can access meaningful employment, including women, young people and those with disabilities. Currently, billions of people are either unemployed or working in conditions that violate their basic human rights and destroy their dignity. Extreme poverty and the promise of a better life are often underlying factors in human trafficking, forced labour and child labour. The International Labour Organization (ILO) estimates that, globally, there are around 21 million people in forced labour and around 2.5 million people who have been trafficked and are being subjected to labour exploitation, including sexual exploitation.

It is estimated that 150 million children between the ages of five and 17 currently work in conditions that are considered illegal, hazardous or extremely exploitative. Large numbers of children work in commercial agriculture, fishing, manufacturing, mining and domestic service. Some children work in illicit activities such as the drug trade and prostitution, or other traumatic activities, such as serving as child soldiers.

Access to safe and decent working conditions would see an end to child labour and forced and unsafe conditions, and assist in reducing poverty. This would have a range of benefits for health and wellbeing, including:

- Children would be able to stay in school and socialise with their peers, which promotes social health and wellbeing.
- Fewer people would be forced into prostitution, which reduces their risk of contracting HIV and other STIs, promoting physical health and wellbeing.
- People working in safe and decent jobs are more likely to experience positive emotions, including pride and satisfaction, which promotes emotional health and wellbeing.
- People experiencing safe and decent working conditions will feel safe at work and earn a reliable income, which can lower stress levels and promote mental health and wellbeing.
- Safe and decent work promotes feelings of connectedness, which promotes spiritual health and wellbeing.

9.3.4 Promotion of political and legal rights

The opportunities available in a society must be equitable for all people. Women, indigenous populations and ethnic minorities are often under-represented in governments, and often do not have their rights upheld. According to the United Nations, in 2020, 25 per cent of all national parliamentarians were women, an increase of only 26 per cent from 1995. In 21 countries women numbered less than 10 per cent of parliamentarians, and in six governments there were no women at all. Under-representation of indigenous people and ethnic minorities is still a problem for governments in many high-, middle- and low-income countries. When specific groups are not adequately represented in government, policies

FIGURE 9.8 Child labour must be eliminated to achieve social sustainability.



FIGURE 9.9 The right to vote is important for promoting social sustainability.



are less likely to be developed that promote awareness and action towards issues that affect the health and wellbeing of these groups, which makes it difficult to break the cycle of poverty and achieve social sustainability.

In many countries, laws are developed to protect the citizens' human rights by making discriminatory acts illegal. Despite these interventions, many groups are not adequately protected under the law of the country in which they live. As a result, many groups, including women, experience high rates of crime and a reduced ability to participate in the community in which they live, such as not being able to vote, secure a loan, drive a car or own land. Such discrimination can also contribute to forced displacement from their homes.

Improving political and legal rights can promote health and wellbeing by:

- developing policies that prevent discrimination and promote equal opportunity for education and employment. This can reduce anxiety as people feel socially included, which promotes mental health and wellbeing.
- connecting women, indigenous people and ethnic minorities to the communities in which they live, which can promote spiritual health and wellbeing
- addressing violence against women, which reduces the risk of injury from violence, which promotes physical health and wellbeing.

9.3.5 Peace and security

A peaceful environment and society are essential for promoting optimal health and wellbeing. When a country is in conflict, its level of health and wellbeing may be significantly lower than in times of peace.

During times of peace and security, besides the obvious reduction of death and injury from conflict, there are a range of associated effects on health and wellbeing for all members of society, including the following:

- Financial resources are not being directed to a war effort, so the government is in a better position to provide essential resources for its citizens, including infrastructure, education, healthcare and social protection.
- The environmental impact of war does not occur, which increases access to food and services such as healthcare. Water and sanitation facilities and electricity supplies can also be maintained and people are less likely to be displaced. This reduces the risk of malnutrition and premature death, which promotes physical health and wellbeing.
- Adults can continue to work and children can attend school, which will promote social health and wellbeing as people have the opportunity to interact and socialise.
- People can go about their daily lives, performing activities such as attending work or going to school. This promotes all areas of health and wellbeing as people can work to reduce poverty, which assists in providing resources such as food, water, shelter and healthcare. This can reduce stress (mental health and wellbeing), promote social interaction (social health and wellbeing), reduce the risk of infection (physical health and wellbeing), promote positive emotions (emotional health and wellbeing) and give people a sense of purpose in their lives (spiritual health and wellbeing).
- The risk of personal injury and the destruction of infrastructure is reduced, which enhances physical health and wellbeing and means that vulnerable groups can be reached to address issues such as poverty and food insecurity.
- Long-lasting effects of war, such as the presence of landmines and the lack of infrastructure, are reduced so future generations do not have to focus on rebuilding, and can instead direct their efforts towards promoting their health and wellbeing.
- People are more likely to receive protection under law during times of peace. This can promote feelings of security, which promotes mental health and wellbeing.

9.3 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

9.3 Quick quiz on	9.3 Exercise	9.3 Exam questions
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Select your pathway

LEVEL 1 1, 2	LEVEL 2 3, 4, 5, 6	LEVEL 3 7, 8
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Test your knowledge

1. Explain what is meant by the term 'social sustainability'.
2. What is the underlying aim of social sustainability?
3. Explain why social sustainability is an important consideration even if economic sustainability is achieved.
4. Explain how social protection systems can promote health and wellbeing.
5. Explain why gender equality is essential for sustainability.

Apply your knowledge

6. Outline the five considerations in achieving social sustainability.
7. Explain how each factor outlined in question 6 can promote health and wellbeing.
8. Explain why social sustainability is an important consideration in eliminating poverty globally.

9.3 Quick quiz on	9.3 Exercise	9.3 Exam questions
---------------------------------	---------------------	---------------------------

Question 1 (2 marks)
Source: VCE 2019, Health and Human Development Exam, Q.15; © VCAA
One dimension of sustainability is the environmental dimension.
Describe one other dimension of sustainability.

Question 2 (2 marks)
A characteristic of social sustainability is the provision of social protection measures.
Outline two social protection measures.

Question 3 (1 mark)
Define 'social sustainability'.

Question 4 (2 marks)
Access to safe and decent work conditions is a characteristic of social sustainability. **List** two other characteristics of social sustainability.

Question 5 (3 marks)
Identify a characteristic of social sustainability and describe how it promotes health and wellbeing.

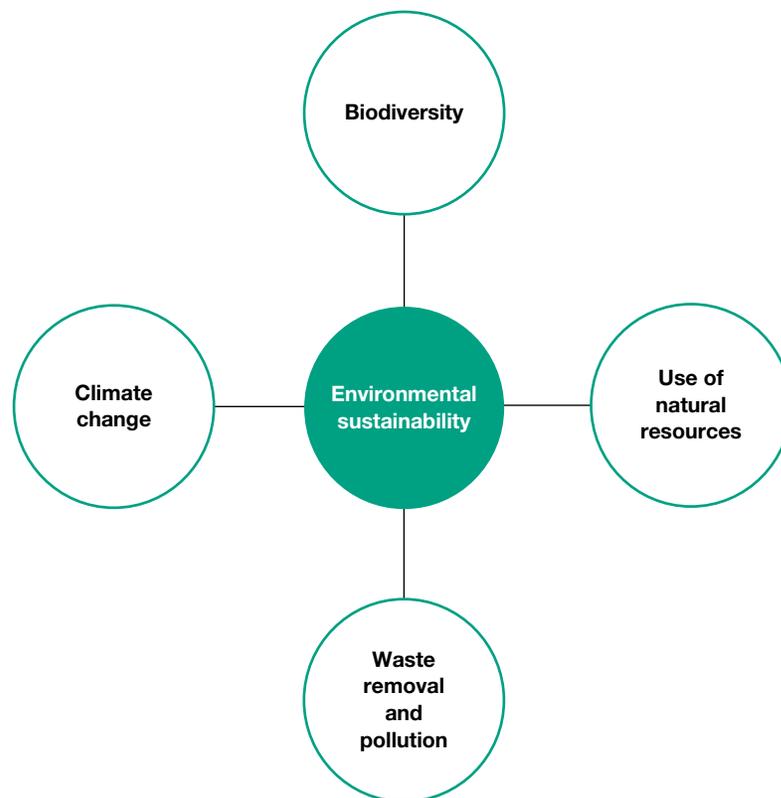
More exam questions are available in your learnON title.

9.4 The environmental dimension of sustainability

KEY CONCEPT Understanding the concept of sustainability — environmental sustainability

Environmental sustainability relates to ensuring the natural environment is used in a way that will preserve resources into the future. Human activities should use natural resources only at a rate that allows these resources to replenish for future generations. In low- and middle-income countries this is often a challenge, as many of these countries exploit their natural environment as a means of generating income and facilitating trade. Considerations for environmental sustainability are shown in **FIGURE 9.10**.

FIGURE 9.10 The components of environmental sustainability



9.4.1 Biodiversity

Biodiversity relates to the variety of all forms of life: the different plants, animals and micro-organisms, the genes they contain and the **ecosystems** of which they form a part. The world's ecosystems provide many of the processes and resources required for human health and wellbeing, including:

- provision of oxygen and removal of carbon dioxide
- protection of water resources
- soil formation, including nutrient storage and recycling
- nourishment of plants and animals that are used for food
- wood products used for building, heat and cooking
- fibres used for clothing
- resources used for medicine
- opportunities for recreation and tourism.

Environmental sustainability ensuring the natural environment is used in a way that will preserve resources into the future

Biodiversity the variety of different plants, animals and micro-organisms, their genes and the ecosystems of which they are a part

Ecosystem a community of living things and the non-living components of the environment in which they live. An ecosystem can include plants, animals, micro-organisms, water, air, soil and rocks.

Each species within an ecosystem plays an important role in maintaining balance within their environment. If a species is removed from an ecosystem, the ecosystem can become unbalanced and may not be able to carry out its processes effectively, which can directly impact people's health and wellbeing. An example of this is the role that bees play in pollinating many of the world's plants, including canola, sunflower, almonds, apples and stone fruits. According to the CSIRO, one third of our food is derived from insect-pollinated crops, with bees playing a major role in this process. Bee numbers have been declining globally and if this trend continues, growing some crops could be increasingly difficult.

This could decrease the world food supply by an estimated 5 to 8 per cent. Increased food insecurity could lead to decreased immune system function, particularly for vulnerable groups, which could contribute to disease and have an impact on physical health and wellbeing.

FIGURE 9.11 Balanced and stable ecosystems are required for a range of human functions.



9.4.2 Use of natural resources

The manner in which natural resources are used must be considered to ensure sustainable biodiversity. The natural resources that humans use can be classified as either **renewable** or **non-renewable**.

Renewable resources refer to those that are replenished naturally and over a relatively short period of time and include crops, water, oxygen, forests and fish stocks. With careful planning, renewable resources can be used for human use with little impact on the ecosystem. For example, fishing is a source of food and income in many countries. If fishing is managed in a sustainable way, then fish can breed and replenish at the rate they are being caught. In many instances, as people attempt to break the cycle of poverty and catch more fish to make a profit, overfishing can occur. This can have devastating effects on fish populations, as they are not able to regenerate at a sustainable rate.

The timber industry is another area of concern, with many forests being harvested at a rate much faster than the trees can regenerate. As well as damaging delicate ecosystems, unsustainable use of renewable resources affects the ability of future generations to use these resources to promote their health and wellbeing. Sustainable use of renewable resources:

- allows future generations to be able to earn an income by utilising natural resources, which can assist in providing a range of goods and services required for optimal health and wellbeing such as food, shelter and healthcare

FIGURE 9.12 With careful planning, the timber industry can be sustainable.



Renewable resources resources that are replenished naturally and over a relatively short period, and include crops, water, oxygen, forests and fish stocks

Non-renewable resources resources that are not replenished in a short period, so once they are used they are not available for future generations. Non-renewable resources include coal, natural gas, petroleum and nuclear substances.

- preserves natural environments that many people value for cultural reasons, which promotes spiritual health and wellbeing. Natural environments also be used for socialising and relaxation, which promotes social and mental health and wellbeing.

Non-renewable resources refer to those that are not replenished in a short period of time. Once these resources are used, they are not available for future generations. According to the International Energy Agency, in 2020 more than 70 per cent of the global electricity supply was generated using non-renewable fossil fuels, including coal, natural gas, petroleum and nuclear substances. Electricity generated using fossil fuels is not sustainable, as fossil fuels will eventually run out.

To ensure environmental sustainability, there must be a shift towards energy production from renewable sources such as the sun, tides, waves, wind and rain. Sustainable energy production will increase health and wellbeing in a number of ways:

- The next generation of children will be able to complete studies under artificial light, increasing their ability to escape poverty and improve all dimensions of health and wellbeing.
- Hospitals will function more effectively with a reliable electricity supply, meaning people can receive treatment for many conditions, which promotes physical health and wellbeing.
- Sustainable fuels mean that future generations can access transport systems, which can assist in maintaining social connections and promote social health and wellbeing.
- Less reliance on fossil fuels will reduce smoke and fumes from these sources, which can reduce the risk of respiratory conditions and improve physical health and wellbeing.

9.4.3 Waste removal and pollution

Maintaining clean ecosystems is important in maintaining environmental sustainability. As discussed earlier, ecosystems are responsible for producing clean water and air. Industry, agriculture and human waste can degrade the quality of these resources by contaminating the ecosystems that produce them.

Environmental sustainability requires humans to minimise their waste where possible and appropriately treat the waste products that are produced to reduce the impact on the environment. Adequate waste removal and maintaining environmental purity benefits health and wellbeing by:

- *ensuring sustainable access to clean water* — This can prevent infectious diseases and promote physical health and wellbeing. Individuals will not have to spend hours collecting water each day so can instead pursue employment, which can promote feelings of satisfaction and achievement, which promotes emotional health and wellbeing.
- *reducing the risk of disease* — Pollution can provide a breeding ground for disease-causing pathogens. Reducing pollution can reduce this threat. Reducing air pollution can reduce the impact of respiratory diseases such as asthma improving physical health and wellbeing.

FIGURE 9.13 Wind and solar are examples of renewable sources of energy.



FIGURE 9.14 Preventing pollution is important for achieving environmental sustainability.



- *providing nutrient-rich soil* — Crops fit for human consumption can be grown, which can promote the functioning of body systems and promote physical health and wellbeing. Food security can reduce levels of stress and promote mental health and wellbeing.

9.4.4 Climate change

According to the Intergovernmental Panel on Climate Change (2007), the global average surface temperature has increased by approximately 0.65 degrees Celsius over the past 50 years and will increase even more rapidly over the next century. The rate at which sea levels have risen has also increased in recent decades, and is also expected to continue over the coming century. These changes in climate will in turn affect weather patterns such as rainfall, drought, wind patterns and heat waves.

Ensuring climate change is minimised is vital for promoting health and wellbeing for a number of reasons:

- Weather and rainfall patterns will stabilise, which may reduce the rate and severity of natural disasters. This will reduce the number of injuries and deaths that occur as a result of these events, which will promote physical health and wellbeing and assist in maintaining infrastructure that is required for social, emotional, mental and spiritual health and wellbeing. Predictable rainfall allows crops to be grown and promotes food security, which will also promote physical health and wellbeing.
- Sea levels will not continue to rise. This will ensure people living in low-lying areas will not be displaced, which can reduce levels of anxiety and promote mental health and wellbeing. Fresh water sources will also be preserved, which promotes physical health and wellbeing.
- Communicable disease rates will decrease, improving physical health and wellbeing. Preventing further climate change will prevent disease-carrying organisms from spreading to other areas as environmental conditions will not support their migration.
- Ecosystems can be maintained if temperatures do not continue to rise. This assists in providing resources such as clean water, air and nutrient-rich soil, which are all required for overall health and wellbeing.

FIGURE 9.15 Climate change has the potential to drastically change landscapes, which has a number of implications for human health and wellbeing.



9.4.5 Interrelationships between the three dimensions of sustainability

The three dimensions of sustainability are interrelated, which means they have an impact on each other. As a result, some examples of resources or conditions required for sustainability can fit into more than one dimension. For example, poverty reduction is a part of social sustainability, but in order to be achieved, it is reliant on economic sustainability. Equal access to safe water is an aspect of social sustainability, but relies heavily on environmental sustainability to ensure clean water is available.

As they are interrelated, failure to consider one dimension will affect the others. For example, a country might have a high income due to the oil reserves they are mining. However, oil reserves deplete (reduced environmental sustainability), and so this source of income will shrink in the future (reduced economic sustainability). Reduced income could lead to fewer economic resources available for public education, which has an impact on social sustainability.

In many ways, the environmental aspect of sustainability is considered the largest dimension of sustainability because social and economic sustainability depend on it (see **FIGURE 9.16**). Without access to natural resources, humans cannot survive, let alone earn an income.

FIGURE 9.16 The three dimensions of sustainability all have an impact on each other.



9.4 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

9.4 Quick quiz

on

9.4 Exercise

9.4 Exam questions

Select your pathway

■ LEVEL 1

1, 3

■ LEVEL 2

2, 4, 5, 6

■ LEVEL 3

7, 8

Test your knowledge

1. Explain what is meant by 'environmental sustainability'.
2. Explain what is meant by 'biodiversity' and outline two reasons why it is essential for health and wellbeing.
3. Explain the difference between renewable and non-renewable resources.
4. Explain the difference between economic, social and environmental sustainability.
5. Explain why a sustainable ecosystem is important for the health and wellbeing of future generations.

Apply your knowledge

6. **a.** Outline the four factors that are important for environmental sustainability.
b. Explain how each factor outlined in part **a** can promote health and wellbeing.
7. Explain how access to electricity can promote physical and spiritual health and wellbeing.
8. **a.** What does it mean when the three dimensions of sustainability are said to be interrelated?
b. Provide examples of how the three dimensions are interrelated.

Question 1 (2 marks)

Greenhouse gases have been blamed for many of the climatic changes that the world is now experiencing. People are encouraged to reduce their greenhouse gas emissions by selecting cleaner power sources such as solar-powered electricity.

Explain how using solar electricity is an example of sustainability.

Question 2 (3 marks)

Identify a characteristic of environmental sustainability and describe how it promotes health and wellbeing.

Question 3 (2 marks)**Seeds of Hope project**

“In May 2015, more than 550,000 trees have been donated to villages in Malawi. The planting of trees as a renewable resource will benefit the people of Malawi in many ways. In the short-term, new trees provide food and raw materials. Long-term benefits include improved income production, storage, shade and enriched soil. For example, baobab leaves are consumed as a vegetable and can be harvested just one year after planting a seedling. Within five years, the trees begin to bear fruit, which can also be eaten or sold. The bark of the tree can be harvested for use as a strong, durable fiber to make twine, rope or other building materials. The bark grows back and can be re-harvested every two to five years. In the subtropical climate of Malawi, the oxygen and water condensation released to the atmosphere by trees is critical for rain to protect the people and the land from drought and famine. Additionally, the trees’ root systems help prevent soil degradation and erosion, while the trees themselves provide shade and protection to people and animals alike.”

Source: https://www.nuskin.com/en_SE/culture/force_for_good/projects/seeds_of_hope.html

Identify an example of environmental sustainability from the Seeds of Hope project and justify your choice.

Question 4 (1 mark)

Explain how environmental sustainability helps future generations.

More exam questions are available in your learnON title.

9.5 The concept of human development

KEY CONCEPT Understanding human development as a way of looking at the differences and similarities between countries

Human development is a concept that provides another way of looking at the differences and similarities between countries around the world in addition to classifying countries as low-, middle- and high-income. Looking at the characteristics of low-, middle- and high-income countries can be useful, but many of these aspects are difficult to measure and therefore make comparison difficult. The concept of human development can give a more accurate picture of how well people are living within particular countries.

The Gross National Income (GNI) per capita of a country, or the average income, has historically been used to gauge how well people are living and the level of human development being experienced in a country. However, although economic wealth is associated with better outcomes for people, wealth is rarely distributed equally. To look at this measure in isolation will not necessarily give an accurate indication of how well the entire population is living. The purpose of human development is to make people, not the country’s income, the focus.

Human development creating an environment in which people can develop to their full potential and lead productive, creative lives according to their needs and interests. It is about expanding people’s choices and enhancing capabilities (the range of things people can be and do), having access to knowledge, health and a decent standard of living, and participating in the life of their community and decisions affecting their lives (adapted from the UN Development Programme, 1990).

FIGURE 9.17 Looking only at economic indicators can hide the vast inequalities that exist within and between countries.



As defined by the United Nations, human development is about much more than income: it is about creating an environment in which people can develop to their full potential and lead productive, creative lives according to their needs and interests. It is about expanding people's choices and enhancing their capabilities (the range of things people can be and do), having access to knowledge, health and a decent standard of living, and participating in the life of their community and decisions affecting their lives (adapted from the UN Development Programme, 1990).

'The basic purpose of [human] development is to enlarge people's choices. In principle, these choices can be infinite and can change over time. People often value achievements that do not show up at all, or not immediately, in income or growth figures: greater access to knowledge, better nutrition and health services, more secure livelihoods, security against crime and physical violence, satisfying leisure hours, political and cultural freedoms and sense of participation in community activities. The objective of [human] development is to create an enabling environment for people to enjoy long, healthy and creative lives.'

Source: Mahbub ul Haq, Founder of the Human Development Report, <http://www.ipc-undp.org/conference/photo/>

on Resources

 **Teacher-led video** What is human development? (tlvd-0266)

Human development is about having more freedom and choices, so people can lead the life they value. Human development is about providing people with opportunities, not insisting that they make use of them. Choices relate to what people value and want. Freedom of choice is central to the human development approach: someone choosing to be hungry (during a religious fast, for example) is quite different to someone who is hungry because they cannot afford to buy food.

There is no limit to the choices people can make, but a key component of human development is equity. As a result, one person's choices should not negatively affect another person's ability to lead the life that they value. For example, a person wanting to be married should not force someone else into wedlock against their will.

Expanding choices is about developing people's abilities and giving them a chance to use them. Educating a girl, for example, builds her skills, but is of little use if she cannot access meaningful employment, or does not have the right skills for the local labour market. Enhancing capabilities relates to the things that people can be and do. Examples of what people can be include being well fed, sheltered and healthy. The things people can do include going to school, working, voting and participating in community life.

Human development implies that people must influence and actively participate in the processes that shape their lives. Fundamentally, human development is about improving people's lives, rather than assuming that economic growth will automatically lead to better lives for all. Economic factors are an important part of achieving this, but they are not the only part and are not the overall objective of human development.

In order to improve human development, people need to have certain choices, capabilities and freedoms. Some of the critical elements relating to these include those shown in **FIGURE 9.19**.

FIGURE 9.18 Education is a key component of human development because it expands people's choices and capabilities.

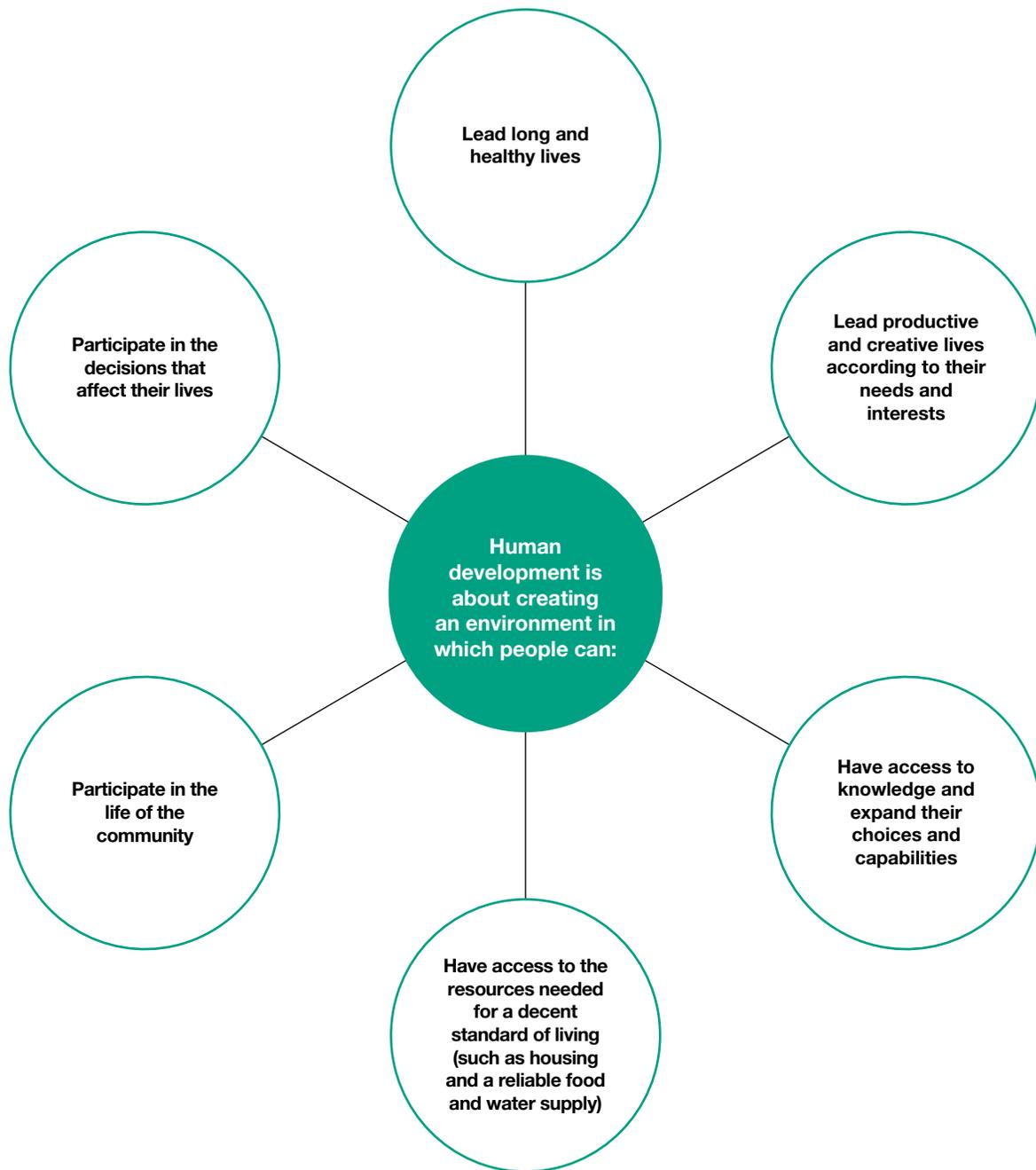


EXAM TIP

When making links to human development, it is important to ensure that a specific aspect of human development is the focus and that enough detail is provided to explain how the aspect of human development is impacted. For example, it is true to say that 'education enhances choices and capabilities', but there is not enough detail in this link to be awarded full marks. A better response would be 'education can develop capabilities in relation to numeracy and literacy. With these skills, a person is likely to have more choice in relation to the careers they pursue in the future'.

Without these capabilities, human development cannot progress and many opportunities remain inaccessible. It is also important that these capabilities and freedoms are able to be sustained or maintained in the long term.

FIGURE 9.19 The elements critical to human development



9.5.1 Case study in human development

Consider the following examples that illustrate how human development presents in day-to-day life for Adam and Veronica, two children growing up in Lackistan, a fictional country:

Lackistan has a high average income and the economy is growing, but the wealth is distributed unequally. The major cities are sufficiently developed with access to public services and adequate infrastructure. As a result, those living in the major cities have access to education, healthcare, transport systems, adequate housing and safe water and sanitation. Those in rural areas, however, often experience food insecurity, lack of access to healthcare, education, safe water and sanitation.

Lackistan is typical of many countries in that the average incomes are high, but this hides the fact that not everyone is enjoying the benefits that can come with a growing economy and high incomes.

Adam lives in the capital of Lackistan with his parents. They live in a safe neighbourhood where crime rates are low and resources such as healthcare, safe water and adequate sanitation are readily available. Adam recently graduated from a public secondary school and has been accepted by the local university to study medicine. Adam's family belong to the ethnic majority of Lackistan and enjoy the freedoms that the country has to offer, such as being able to vote and participate in other aspects of community life. Adam wants to finish his medical degree and then work either in general practice or a hospital, as he has always dreamed of being able to help people. Adam wants to have a family eventually, but is going to wait until his career is established before committing to a serious relationship.

Adam appears to be experiencing a high level of human development. He has received an education and has chosen to study medicine at university. Adam has choices in relation to his career and is focusing on working in a field that he has been interested in for some time. Adam thinks he would like to have a family, but has the freedom to wait until the time is right. He lives in a safe community where he can access the resources required for a decent standard of living such as healthcare, water and sanitation. Adam enjoys freedoms such as being able to vote and participating in the life of the community in which he lives.

Veronica lives in a rural region of Lackistan with her mother. When Veronica was five years old, her father died. He was 28 years old, and died as the result of an infectious disease that could have been prevented with access to basic healthcare. Veronica spent a large portion of her childhood collecting water as her mother worked in the fields trying to grow enough food for Veronica and herself. Educational opportunities are limited in rural areas of Lackistan, but Veronica would not have been able to attend school because she was responsible for collecting water.

Because she is illiterate, Veronica's employment opportunities are limited to unskilled jobs in her community, which she finds physically demanding and unrewarding. Veronica belongs to an ethnic minority that is often discriminated against by other groups in relation to basic rights such as voting and participating in the life of the community. In line with cultural traditions, Veronica was married at the age of 15 to a man chosen by her uncle. In the years that followed, she had three children and now works in agriculture trying to grow enough food to feed her family.

Although she lives in the same country, Veronica's level of human development is much lower than Adam's. Her father died at a young age from a preventable disease, which indicates that people in Veronica's community may not be able to lead long and healthy lives. Safe water is not readily available, indicating that the resources required for a decent standard of living are not universally accessible. Veronica was unable to access education and now her choices in relation to employment are limited. Veronica did not have the freedom to make decisions affecting her life in relation to when and to whom she got married.

9.5 Activities

1. Access the **Human development** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **Wealth and health** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

	Digital documents	Human development worksheet (doc-32223) Wealth and health worksheet (doc-32224)
	Weblinks	Human development Wealth and health

9.5 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

9.5 Quick quiz



9.5 Exercise

9.5 Exam questions

Select your pathway

■ LEVEL 1

1, 3

■ LEVEL 2

2, 4, 5

■ LEVEL 3

6, 7, 8, 9

Test your knowledge

- Briefly explain the concept of 'human development'.
 - Why is using only GNI or economic growth not an adequate way of measuring human development?
- Identify three examples of choices that people can make in life to enhance their human development.
- Using examples, explain what is meant by 'capabilities'.
- Explain the difference in human development experienced by Adam and Veronica in the case study.

Apply your knowledge

- Explain likely differences in the human development experienced in a country classified as low-income compared to a country classified as high-income.
- Do you think the level of human development experienced in Australia is sustainable? Why or why not?
- The *1996 Human Development Report* opens with the fundamental statement, 'human development is the end — economic growth a means'. Explain why economic growth is a means to achieving human development.
- 'People are the real wealth of nations, not money.' Do you agree with this statement? Why or why not?
- Making reference to examples relating to each dimension, explain why sustainability is an essential consideration when working to promote human development.

9.5 Quick quiz



9.5 Exercise

9.5 Exam questions

Question 1 (2 marks)

Define 'human development'.

Question 2 (3 marks)

Identify three characteristics of the United Nations definition of human development.

Question 3 (2 marks)

Having access to healthcare is a key component of human development. **Describe** how having access to healthcare enables human development to be achieved.

Question 4 (2 marks)

Having access to knowledge is a key component of human development. **Outline** two ways in which a strategy focusing on education in a developing country can achieve human development.

More exam questions are available in your learnON title.

9.6 The advantages and limitations of the Human Development Index

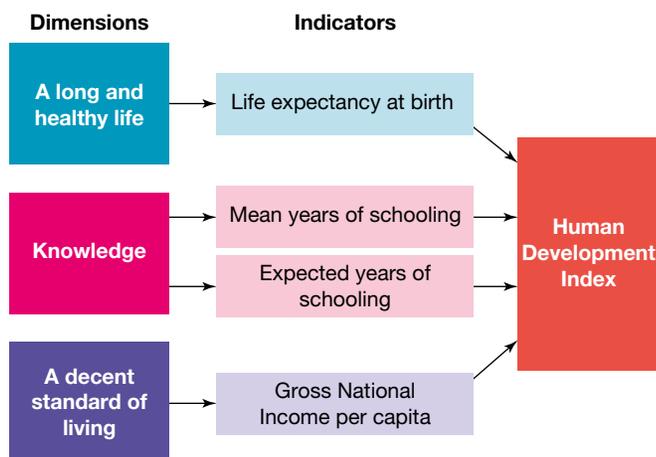
KEY CONCEPT Understanding the Human Development Index, including its advantages and limitations

on Resources

Teacher-led video Human Development Index (tlvd-0267)

Measuring the total level of human development of a country is impossible. There are many aspects of people's lives that need to be taken into account, and to collect all of this information on a global scale is not practical. The United Nations has, however, developed a measurement system that attempts to reflect the level of human development being experienced in different countries and regions. It is known as the **Human Development Index** (HDI) and it uses three dimensions and four indicators to create an index that estimates the level of human development experienced in different countries (see **FIGURE 9.20**).

FIGURE 9.20 The Human Development Index is based on three dimensions and four indicators.



The dimensions relate to broad concepts that make up a part of the UN's interpretation of human development, whereas the indicators are the measurable aspect of each dimension. The four indicators relate to:

- *life expectancy at birth* — An indication of how long a person can expect to live; it is the number of years of life remaining to a person at birth if death rates do not change (AIHW, 2008).
- *mean years of schooling* — The average number of years of education achieved by those aged 25 years and over.
- *expected years of schooling* — The number of years of education expected for a child of school entrance age.
- *Gross National Income per capita* — The overall income of a country after expenses owing to other countries have been paid, divided by the population of the country.

Using the four indicators, the HDI is a number between zero and one (0–1). The closer to one, the greater the level of development experienced. As the HDI uses more than just economic indicators, a clearer picture of the overall standard of people's lives can be seen. The HDI reflects the level of development in a country, allows comparisons to be made between countries and regions, and allows improvements made over time to be monitored.

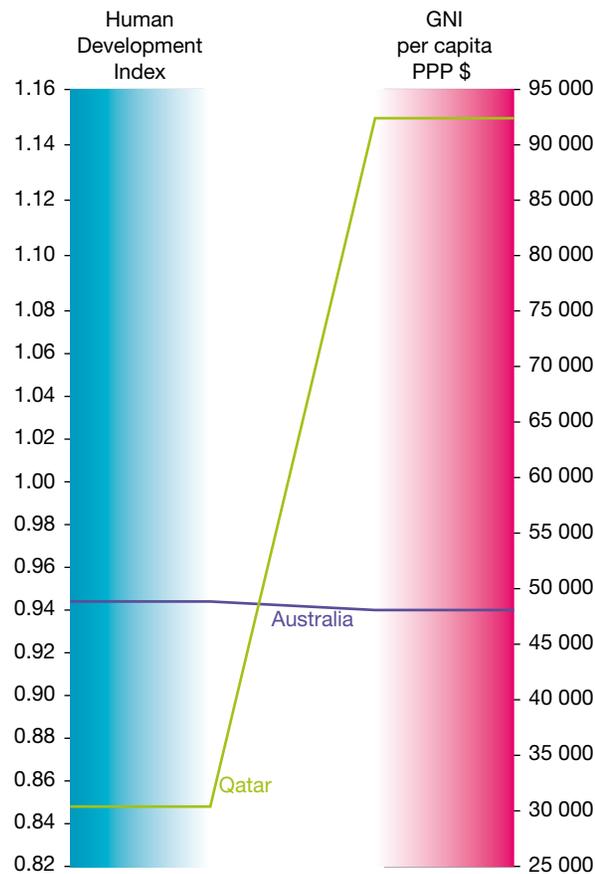
Human Development Index a tool developed by the United Nations to measure and rank countries' levels of social and economic development. It provides a single statistic based on three dimensions — a long and healthy life, knowledge and a decent standard of living — and four indicators — life expectancy at birth, mean years of schooling, expected years of schooling and Gross National Income per capita.

The United Nations (2020) classifies countries by dividing them into four groups according to their HDI:

- very high human development
- high human development
- medium human development
- low human development.

For many countries, higher average incomes correlate to a higher HDI. But high average incomes do not necessarily relate to greater opportunities for education and health, so this pattern is not observed for all countries (see **FIGURE 9.21**).

FIGURE 9.21 The Human Development Index gives a more complete picture than just income.



Source: <http://hdr.undp.org/en/content/download-data>

EXAM TIP

When answering questions related to the HDI make sure you read the question carefully. If you are asked to link to indicators of the HDI you will need to link to life expectancy at birth, mean and expected years of schooling and gross national income per capita. If you are asked to link to dimensions you will need to link to a long and healthy life, knowledge and a decent standard of living.

The Human Development Indices of selected countries are shown in **TABLE 9.1**.

TABLE 9.1 The Human Development Indices of selected countries in 2019

Human Development Index classification	Country	Human Development Index	Rank
Very high human development	Norway	0.957	1
	Australia	0.944	8
	United Kingdom	0.932	13
	Malaysia	0.810	62
High human development	Iran	0.783	70
	Mexico	0.779	74
	China	0.761	85
	Jamaica	0.734	101
Medium human development	Iraq	0.674	123
	India	0.645	131
	Cambodia	0.594	144
	Papua New Guinea	0.555	155
Low human development	Uganda	0.544	159
	Afghanistan	0.511	169
	Mozambique	0.456	181
	Niger	0.394	189

Source: © 2020 United Nations Development Programme.

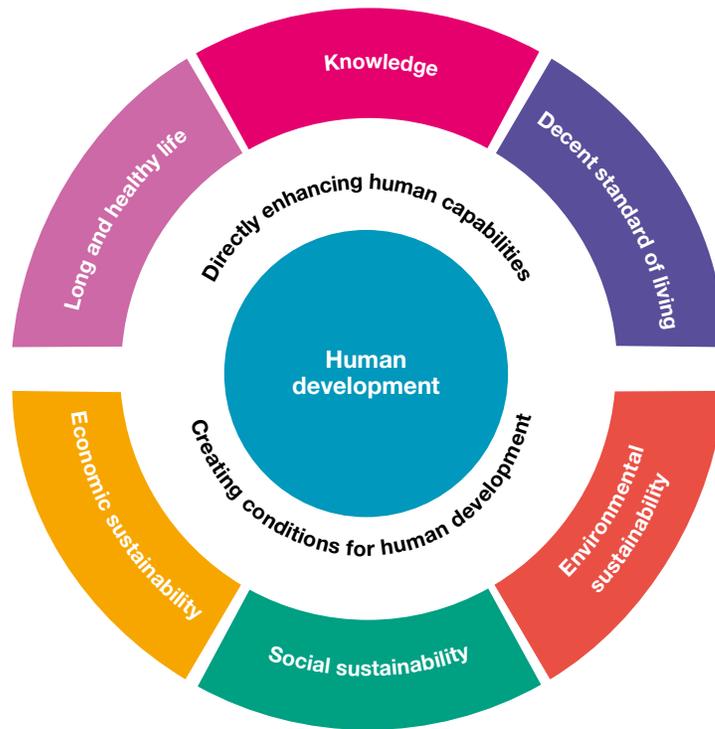
In order for human development to continually improve, the initiatives, policies and strategies employed must be able to be maintained over a long period of time. If this cannot occur, the current level of human development may decrease over future generations. Ensuring opportunities for future generations to lead productive and fulfilling lives is the underlying objective of economic, social and environmental sustainability (see **FIGURE 9.22**).

9.6.1 Advantages of the HDI

The HDI has a number of advantages for exploring the level of human development experienced globally, as explained here.

- The HDI takes more than just average incomes into account, so provides a more comprehensive representation of the level of human development experienced:
 - It provides an indication of opportunities for education, which reflects access to knowledge and the ability to enhance choices and capabilities.
 - Average income reflects the ability to access the resources required for a decent standard of living.
 - Life expectancy reflects the ability to lead a long and healthy life.
- The HDI is a composite statistic and, as a result, provides a single statistic relating to the three dimensions and four indicators. This makes comparison easier, as numerous statistics do not have to be sorted through and compared.
- The HDI is effective for analysing progress that is made by countries over time. The four indicators may experience differing rates of progress, but monitoring the overall HDI is useful for analysing the overall progress achieved over time.
- The HDI has captured the attention of media, policy makers, communities and individuals and, as a result, has raised awareness of the importance of human development. It helps people question and revise current policy choices.

FIGURE 9.22 The three dimensions of sustainability are important considerations for all areas of human development, including a long and healthy life, knowledge and a decent standard of living.



Source: Adapted from United Nations Development Programme, *Human Development Report 2015: Work for Human Development*, New York, p. xii.

9.6.2 Limitations of the HDI

Although the HDI is a useful and innovative measure, it does have some limitations, as described below.

- Human development is a complex concept and encompasses many aspects of human lives. The HDI only reflects selected aspects of human development and therefore does not capture the richness and depth of human development. Aspects of human development that are not measured by the HDI include gender equality; freedom of speech; freedom of employment; levels of discrimination; empowerment; access to resources such as water, social security and public housing; social inclusion; and political participation.
- The HDI, although moving beyond economic indicators, is still based on averages and, therefore, does not provide an indication of the inequalities that exist within countries. Those from cultural minorities, females, those with disabilities and those in rural areas often experience lower levels of human development than the rest of the population.
- No survey data are collected in the HDI, so people's feelings about their lives and issues facing communities are not reflected, including social, emotional, mental and spiritual health and wellbeing, and feelings about physical safety.
- Collecting data is complex and the reliability of data for measuring human development remains a challenge. Comparisons between countries are often difficult because of the different definitions and methods used in measuring key components of the HDI. Comparisons within countries is often difficult as data are often only collected at a national level.
- In some situations, the concept of human development has been equated with the three dimensions of the HDI, which neglects key aspects of human development including freedom, choices and capabilities.

CASE STUDY

COVID-19: Human development on course to decline this year for the first time since 1990

Global human development — which can be measured as a combination of the world's education, health and living standards — could decline this year for the first time since the concept was introduced in 1990, the United Nations Development Programme (UNDP) warned today.

'The world has seen many crises over the past 30 years, including the Global Financial Crisis of 2007–09. Each has hit human development hard but, overall, development gains accrued globally year-on-year,' said UNDP Administrator Achim Steiner. 'COVID-19 — with its triple hit to health, education, and income — may change this trend.'

Declines in fundamental areas of human development are being felt across most countries — rich and poor — in every region.

COVID-19's global death toll has exceeded 300 000 people, while the global per capita income this year is expected to fall by four per cent.

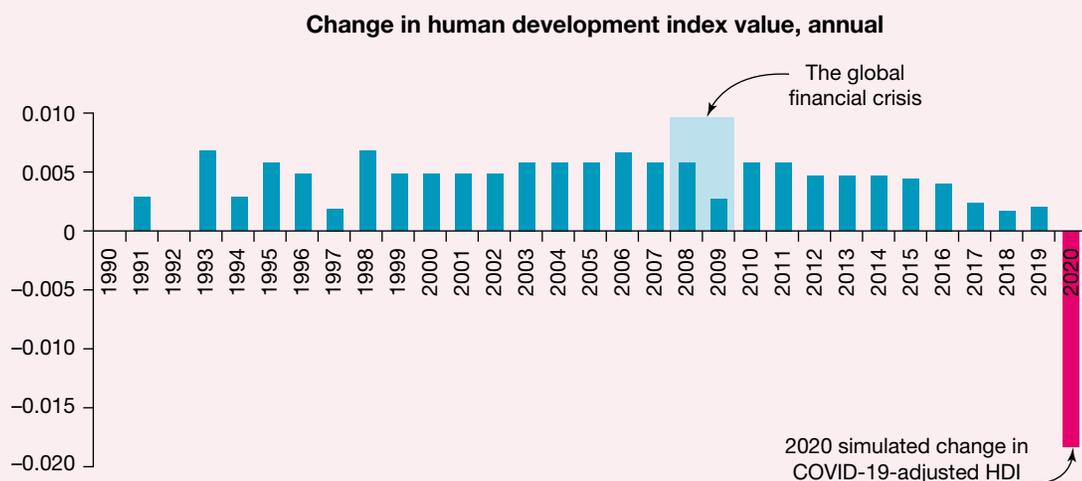
With school closures, UNDP estimates of the 'effective out-of-school rate' — the percentage of primary school-age children, adjusted to reflect those without Internet access — indicate that 60 per cent of children are not getting an education, leading to global levels not seen since the 1980s.

The combined impact of these shocks could signify the largest reversal in human development on record.

FIGURE 9.23 Declines in fundamental areas of human development are being felt across most countries.



FIGURE 9.24 The impact of COVID-19 on the Human Development Index



This is not counting other significant effects, for instance, in the progress towards gender equality. The negative impacts on women and girls span economic — earning and saving less and greater job insecurity — reproductive health, unpaid care work and gender-based violence.

COVID-19: a magnifying glass for inequalities

The drop in human development is expected to be much higher in developing countries that are less able to cope with the pandemic's social and economic fallout than richer nations.

In education, with schools closed and stark divides in access to online learning, UNDP estimates show that 86 per cent of children in primary education are now effectively out-of-school in countries with low human development — compared with just 20 per cent in countries with very high human development.

But with more equitable Internet access — where countries close the gap with leaders in their development group, something feasible — the current gaps in education could close.

Determined, equity-focused interventions can help economies and societies rally, mitigating the far-reaching impacts of the COVID-19 pandemic.

'This crisis shows that if we fail to bring equity into the policy toolkit, many will fall further behind. This is particularly important for the "new necessities" of the 21st century, such as access to the Internet, which is helping us to benefit from tele-education, tele-medicine, and to work from home,' says Pedro Conceição, Director of the Human Development Report Office at UNDP.

Implementing equity-focused approaches would be affordable. For instance, closing the gap in access to the Internet for low- and middle-income countries is estimated to cost just one per cent of the extraordinary fiscal support packages the world has so far committed to respond to COVID-19.

CASE STUDY REVIEW

1. Using examples relating to the four indicators, explain why the HDI was expected to fall as a result of COVID-19.
2. Identify examples from the case study that relate to the level of human development experienced, but are not reflected in the HDI.
3. Discuss reasons that may account for lower income countries experiencing greater falls in HDI than higher income countries.
4.
 - a. What was the difference in the proportion of children estimated to be out-of-school as a result of COVID-19 in both low and very high human development countries?
 - b. Explain how this difference may contribute to variations in human development over time.

9.6 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

9.6 Quick quiz



9.6 Exercise

9.6 Exam questions

Select your pathway

■ LEVEL 1

1, 3

■ LEVEL 2

2, 4, 5

■ LEVEL 3

6, 7

Test your knowledge

1. What measure does the UN use to report on the level of human development experienced in different countries?
2.
 - a. What dimensions are used to assess the HDI of each country?
 - b. Explain the indicators that relate to each dimension.
 - c. What other factors could be included in calculating the HDI of a country? Explain.
 - d. Why might it be difficult to include other factors in calculating the HDI?

3. Complete the following table:

Strengths of the HDI	Limitations of the HDI

Apply your knowledge

- Outline two reasons that may account for Australia having a higher HDI than China.
- Using your knowledge of the HDI, explain why Australia has a higher human development index than Qatar, yet Qatar has a higher average income (see **FIGURE 9.21**).
- Explain two likely differences in human development between Australia and Niger based on their respective Human Development Indices (see **TABLE 9.1**).
- The HDI provides an accurate indication of the level of human development experienced in a country. Discuss.

9.6 Quick quiz



9.6 Exercise

9.6 Exam questions

Question 1 (3 marks)

Source: VCE 2019, Health and Human Development Exam, Q.6; © VCAA

According to the United Nations Development Programme's Human Development Report, in 2017 Australia had a Human Development Index (HDI) of 0.939, while Papua New Guinea had an HDI of 0.544. The World Bank classifies Australia as a high-income country and Papua New Guinea as a middle-income country.

Use two indicators of human development to **explain** the differences in HDI between Australia and Papua New Guinea.

Question 2 (3 marks)

Source: VCE 2015, Health and Human Development Exam, Q.9.c; © VCAA

Indicators of health status for a range of countries

Country	Human Development Index* (2013)	Life expectancy at birth* (2013)	Under-five mortality rate (per 1000 live births)* (2013)	Maternal mortality ration (deaths per 100 000 live births) [†] (2013)	Births attended by skilled personnel (%) ^{‡**}
Australia	0.933	82.5	5	6	99.1
Turkey	0.759	75.3	14	20	91.3
Chad	0.372	51.2	150	980	16.6

Data: *United Nations Development Programme, 'Human Development Reports'

[†]The World Bank, maternal mortality ratio data

[‡]World Health Organization, 'Global Health Observatory Data Repository'

^{**}Australia 2009, Turkey 2008, Chad 2010

Turkey's Human Development Index (HDI) increased from 0.496 to 0.759 between 1980 and 2013. In the same period, the average life expectancy rose by 16.6 years.

List three other HDI indicators that may have also increased.

Question 3 (3 marks)

Source: *VCE 2014, Health & Human Development Exam, Q.15.a (adapted)*; © VCAA

Describe the HDI.

Question 4 (1 mark)

A limitation of the Human Development Index (HDI) is that data used to calculate the HDI may not be reliable in some countries.

Identify one other limitation of the Human Development Index (HDI).

More exam questions are available in your learnON title.

9.7 KEY SKILLS

9.7.1 Explain sustainability (environmental, social, economic) and its importance in the promotion of health and wellbeing in a global context

tlvd-1925

KEY SKILL Explain sustainability (environmental, social, economic) and its importance in the promotion of health and wellbeing in a global context

Tell me

Closely related to the promotion of health and wellbeing is the notion of sustainability. While people should be able to optimise their health and wellbeing, it is important that they are able to do so in a sustainable way; that is, without compromising the ability of future generations to achieve similar levels of health and wellbeing.

For this key skill, it is important to be able to explain sustainability and the three dimensions that underpin it: economic, social and environmental. Being able to identify and discuss specific factors that relate to each dimension of sustainability assists in explaining the importance of each in relation to the promotion health and wellbeing globally.

Show me

In the following example, the concept of social sustainability is explained and its importance in relation to promoting health and wellbeing globally is discussed.

Social sustainability relates to creating an equitable society that meets the needs of all citizens and can be maintained indefinitely.¹ Social sustainability includes ensuring all people of working age around the world have access to safe and decent working conditions.² Safe and decent working conditions mean that people will not have to work in forced labour, which provides a greater sense of control and purpose in their life and promotes spiritual health and wellbeing around the world.³ Safe working conditions reduce the risk of work-related injuries, which promotes physical health and wellbeing globally.⁴ Social sustainability also includes gender equality. If all females in all countries are at reduced risk of domestic violence, they may experience lower rates of stress and anxiety, which promotes mental health and wellbeing in a global context.⁵

1 An explanation of social sustainability is provided.

2 A specific aspect of social sustainability is identified.

3 A reference to the global context of this skill is provided.

4 Specific links are made between safe and decent work and multiple dimensions of health and wellbeing.

5 Another aspect of social sustainability is identified to add depth to the discussion.

Practise the key skill

1. Briefly explain what is meant by economic sustainability and discuss its importance for the promotion of health and wellbeing in a global context.
2. Briefly explain what is meant by environmental sustainability and discuss its importance for the promotion of health and wellbeing in a global context.

9.7.2 Explain the Human Development Index and evaluate its usefulness in measuring human development of countries

tlvd-1926

KEY SKILL Explain the Human Development Index and evaluate its usefulness in measuring human development of countries

Tell me

For this skill, it is necessary to be familiar with the Human Development Index (HDI), which measures levels of social and economic development within a country and enables comparisons between countries. The three

dimensions and four indicators that are used to determine the HDI of a country should also be understood.

The dimensions and indicators are:

- a long and healthy life: life expectancy at birth
- knowledge:
 - mean years of schooling
 - expected years of schooling
- a decent standard of living: Gross National Income per capita.

It is important to know what the HDI rating means; for instance, what does an HDI of 0.700 mean compared to an HDI of 0.500? This skill also requires an evaluation of the use of the HDI in relation to its usefulness in measuring human development. To assist in evaluation, a range of advantages and limitations the HDI should be known.

Show me

In the following example, the reasons for the difference in HDI between Australia (0.944) and Indonesia (0.718) are discussed and the usefulness of the HDI in measuring human development is explained.

Australia has a higher HDI than Indonesia, which indicates a higher level of social and economic development in Australia.⁶

6 A key aspect of the HDI is identified.

This may be due to higher life expectancy at birth, mean years of schooling, expected years of schooling and/or Gross National Income per capita in Australia.⁷

7 The specific reasons that may account for the difference between Australia and Indonesia are stated.

The HDI is useful as a tool for reflecting the level of human development experienced as it moves beyond using only economic indicators. Economic indicators are useful statistics, but a high average income does not provide information relating to how well people are living. The HDI takes a broader approach and includes factors that relate to other aspects of wellbeing such as health and educational outcomes.⁸

8 An advantage of the HDI is explained.

Although the HDI includes a range of indicators relating to human development, it is based on average data and therefore does not provide an indication of the inequalities experienced within countries. Many population groups face specific challenges in promoting their human development and the HDI does not reflect this.⁹

9 A limitation of the HDI is explained.

Practise the key skill

3. Briefly explain the HDI.
 4. Discuss the degree to which the HDI reflects the level of human development experienced in a country.
 5. New Zealand has a higher life expectancy than the USA, but the USA has a higher HDI. Explain possible reasons for this.
 6. Explain why the HDI is often used as an indication of wellbeing instead of average income.
-

9.8 Review

9.8.1 Topic summary

9.2 The economic dimension of sustainability

- Sustainability relates to ‘meeting the needs of the present without compromising the ability of future generations to meet their own needs’.
- The three dimensions of sustainability are economic, social and environmental sustainability. Each is essential for optimal health and wellbeing both now and in the future.
- Economic sustainability relates to the capacity of future generations to earn an income and the efficient use of resources to allow economic growth over time. Considerations for economic sustainability include innovative and diverse industries, job creation, economic growth and trade.

9.3 The social dimension of sustainability

- Social sustainability relates to creating an equitable society that meets the needs of all citizens and can be maintained indefinitely.
- Social sustainability works to ensure that all people have their human rights upheld, can participate in the society in which they live, participate in the decisions that affect their lives, and experience equal access to resources such as food, shelter, education, healthcare, employment, clean water, sanitation, clothing, recreation and leisure.
- Social sustainability is reliant upon the elimination of poverty and the provision of social protection systems, gender equality, access to safe and decent working conditions, promotion of political and legal rights, and peace and security.

9.4 The environmental dimension of sustainability

- Environmental sustainability relates to ensuring the natural environment is used in a way that will preserve resources into the future.
- Considerations for environmental sustainability include biodiversity, the use of natural resources, pollution and waste removal, and climate change.

9.5 The concept of human development

- Human development refers to creating an environment in which people can develop to their full potential and lead productive, creative lives according to their needs and interests. It is about expanding people’s choices and enhancing capabilities (the range of things people can be and do); having access to knowledge, health and a decent standard of living; and participating in the life of their community and decisions affecting their lives.

9.6 Understanding the Human Development Index, including its advantages and limitations

- The Human Development Index (HDI) ranks the development of countries based on more than economic wealth. It takes three dimensions (a long and healthy life, knowledge and a decent standard of living) and four indicators (life expectancy at birth, mean years of schooling, expected years of schooling and Gross National Income per capita) into account.
- Advantages of the HDI include that it:
 - takes more than just average incomes into account, and so provides a more comprehensive representation of the level of human development experienced
 - takes multiple factors into account and produces a single statistic, which is beneficial for comparing countries and monitoring progress over time
 - is effective for analysing progress that is made by countries over time
 - has captured the attention of many aspects of society and promotes improvements in relation to human development.
- Limitations of the HDI include that it:
 - only reflects selected aspects of human development
 - is based on averages and, as a result, does not provide an indication of the inequalities that exist within countries
 - doesn’t collect survey data, so people’s feelings about their lives and issues facing communities are not reflected
 - relies on data collected in hundreds of countries which can compromise accuracy
 - has been equated with the concept of human development, which neglects key aspects of human development including freedom, choices and capabilities.

9.8.2 Key terms

Biodiversity the variety of different plants, animals and micro-organisms, their genes and the ecosystems of which they are a part

Economic sustainability ensuring that average incomes in all countries are adequate to sustain a decent standard of living and continue to rise in line with inflation and living costs in the future

Ecosystem a community of living things and the non-living components of the environment in which they live. An ecosystem can include plants, animals, micro-organisms, water, air, soil and rocks.

Environmental sustainability ensuring the natural environment is used in a way that will preserve resources into the future

Human Development Index a tool developed by the United Nations to measure and rank countries' levels of social and economic development. It provides a single statistic based on three dimensions — a long and healthy life, knowledge and a decent standard of living — and four indicators — life expectancy at birth, mean years of schooling, expected years of schooling and Gross National Income per capita.

Human development creating an environment in which people can develop to their full potential and lead productive, creative lives according to their needs and interests. It is about expanding people's choices and enhancing capabilities (the range of things people can be and do), having access to knowledge, health and a decent standard of living, and participating in the life of their community and decisions affecting their lives (adapted from the UN Development Programme, 1990).

Non-renewable resources resources that are not replenished in a short period, so once they are used they are not available for future generations. Non-renewable resources include coal, natural gas, petroleum and nuclear substances.

Renewable resources resources that are replenished naturally and over a relatively short period, and include crops, water, oxygen, forests and fish stocks

Social sustainability creating an equitable society that meets the needs of all citizens and can be maintained indefinitely

Sustainability meeting the needs of the present without compromising the ability of future generations to meet their own needs

9.8.3 Extended response: build your exam skills

tlvd-2884 Consider the following information and answer the question that follows.

Source 1

The variations in HDI between income groups shows that low-income countries require more support to achieve a decent standard of living.

Literacy rates relate to education and can reflect a country's ability to increase average incomes, as well as being a part of social sustainability.

This shows that higher income countries need to take more action to slow global warming and ensure environmental sustainability.

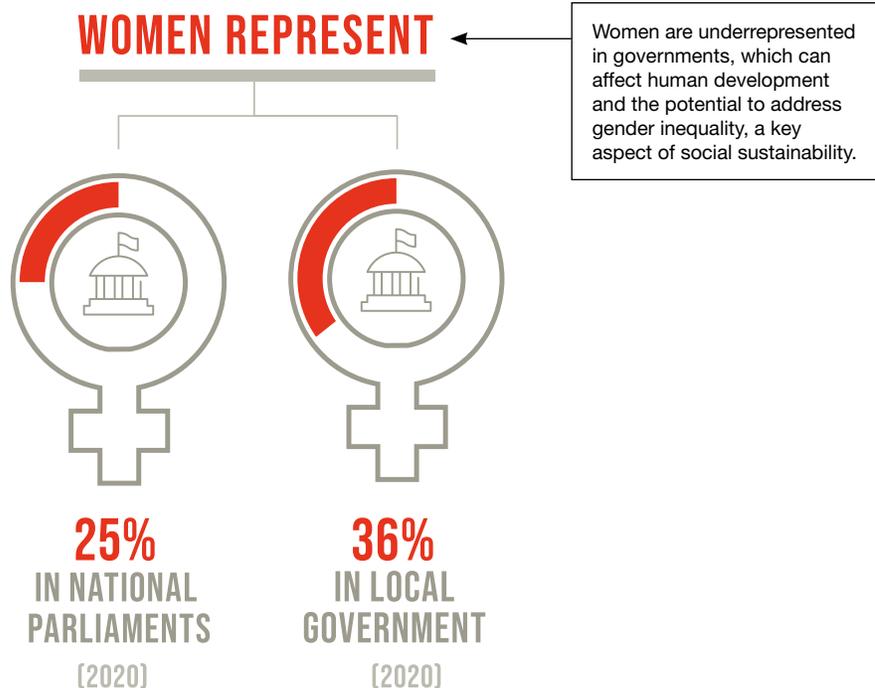
This is a component of HDI that could be used when discussing the importance of economic sustainability in achieving improvement in human development.

	Human Development Index (HDI)	Literacy rate (%)		Renewable electricity use (% of total electricity use)	GNI per capita (\$)
		Male	Female		
Australia	0.944	100*	100*	13.6	51 760
High-income	0.886	100*	100*	21.3	52 412
Upper Middle-income	0.756	97	94	25	17 196
Lower Middle-income	0.627	82	69	19.1	6 761
Low-income	0.491	69	54	66.4	2 458

* refers to assumed rate

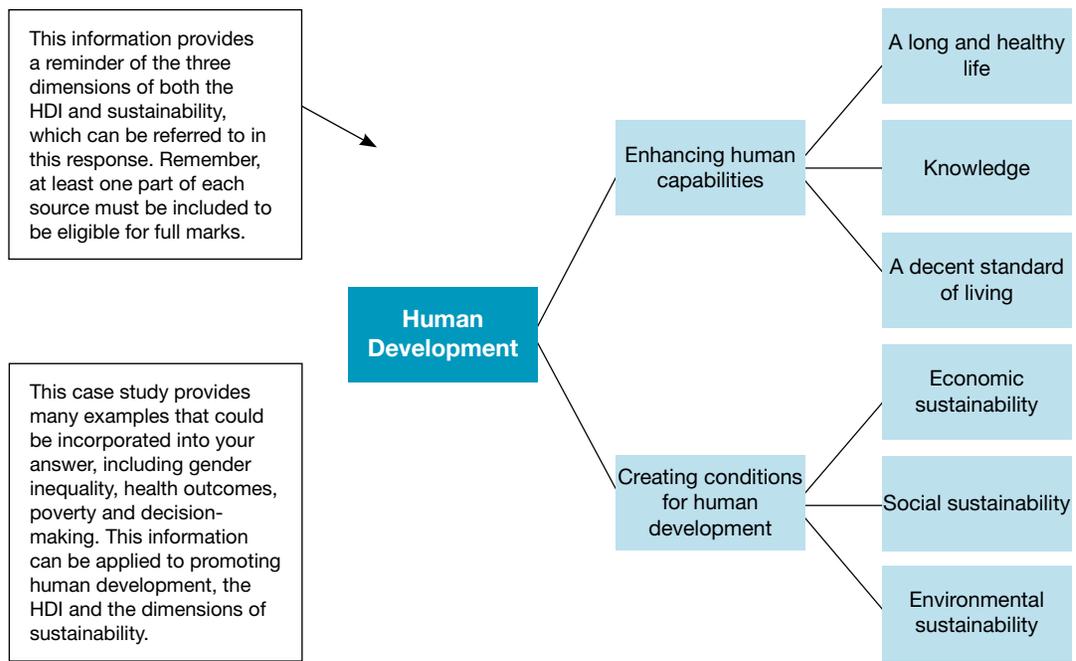
Source: WHO, World Bank, UNHDR, 2021.

Source 2



Source: https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/E_Infographic_05.pdf

Source 3



Source 4

Zala is 12 years old and lives in a rural region of Ethiopia, a low-income country in Africa. Her father died from complications related to HIV/AIDS when she was aged 8. Zala’s family live in poverty partly due to there being few employment opportunities where they live. As a result, she has not had the opportunity to go to school and instead spends her day collecting water and firewood for cooking and providing care for her two younger siblings. Zala is like many females in Ethiopia; disadvantaged in many aspects of life, including literacy, health, decision-making and basic human rights.

Using the information provided and your own knowledge, explain why sustainability is important in promoting human development into the future and contributing to improvements in the HDI. **10 marks**

TIP

Begin by breaking the question down into its parts and then focussing on which parts of the stimulus relate to each part of the question. You might like to use colour coding for this. Don't forget to include your own knowledge as well.

9.8 Exercises

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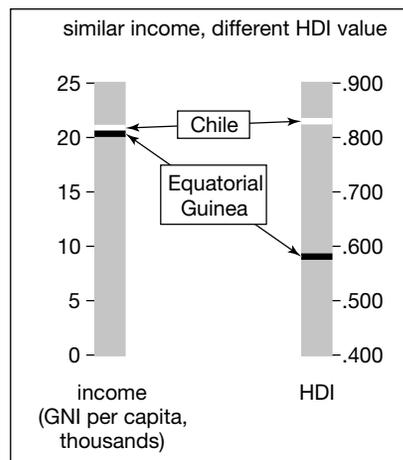
9.8 Exam question

9.8 Exam questions

Question 1 (2 marks)

Source: VCE 2016, Health and Human Development Exam, Q.15.a; © VCAA

The following graph compares the income and Human Development Index (HDI) of Chile and Equatorial Guinea.



Source: United Nations Development Programme, *Human Development Report 2015: Work for Human Development*, UNDP, New York, 2015, p. 57

Explain how two countries can have a similar income (GNI per capita) but quite a different HDI.

Question 2 (1 mark)

Source: VCE 2014, Health & Human Development Exam, Q.15.b (adapted); © VCAA

Consider the following data about the Human Development Index (HDI) and measles vaccination.

Country	Human Development Index (HDI), 2012	Measles vaccination (% of one-year-olds), 2010
Australia	0.938	94
Trinidad and Tobago	0.760	92
Benin	0.436	69
Central African Republic	0.352	62

Data: *Human Development Report 2013*, United Nations Development Programme (UNDP), New York, 2013, pp. 144–146 (Table 1) and pp. 166–169 (Table 7)

Using the data provided, **describe** the relationship between measles vaccination rates and the HDI.

Question 3 (4 marks)

Source: VCE 2013, *Health and Human Development*, Section A, Q.5; © VCAA

Identify two indicators of the Human Development Index (HDI) and **outline** how they lead to variations in the HDI between Australia and a low-income country.

Question 4 (2 marks)

Source: VCE 2011, *Health and Human Development Exam*, Section A, Q.1.a (adapted); © VCAA

The table below shows the Human Development Index for five developed countries.

Country	Human Development Index
Australia	0.937
USA	0.902
United Kingdom	0.849
Sweden	0.885
Japan	0.884

Source: Human Development Index, United Nations. Accessed February 2011.

Define Human Development Index.

Question 5 (7 marks)

Use the table below to answer the questions that follow.

	U5MR (per 1000 live births)	Life expectancy	Maternal mortality ratio (per 100 000 live births)	Births attended by skilled health personnel (%)	Percentage of 1-year- olds immunised against measles	Population with access to safe water (%)	GNI per capita (\$PPP)
Australia	3.7	83.4	6	96.7	95	100	48 085
Sierra Leone	76.4	54.7	1120	86.9	93	50.1	1668
Afghanistan	62.3	64.8	638	58.8	64	57.3	2229
Kenya	41.1	66.7	342	61.8	89	49.6	4244

Sources: <http://hdr.undp.org/en/data>
<https://www.who.int/data/gho>

- a. Briefly **explain** the HDI. **2 marks**
- b. **Identify** the country that would have the lowest HDI and justify your choice. **3 marks**
- c. **Outline** one advantage and one limitation of the HDI in relation to measuring the level of human development experienced. **2 marks**

on Resources

-  **Digital document** Key terms glossary (doc-36131)
-  **Exam question booklet** Topic 9 Exam question booklet (eqb-0063)
-  **Interactivities** Crossword (int-6895)
Definitions (int-6896)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 9 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 9.1 Key terms glossary (doc-36131)
- 9.5 Human development worksheet (doc-32223)
Wealth and health worksheet (doc-32224)
- 9.8 Summary (doc-36144)
Key terms glossary (doc-36131)

Exam question booklets

- 9.1 Topic 9 Exam question booklet (eqb-0063)
- 9.8 Topic 9 Exam question booklet (eqb-0063)

Teacher-led videos

- 9.2 Concepts of sustainability (tlvd-0265)
- 9.5 What is human development? (tlvd-0266)
- 9.6 Human Development Index (tlvd-0267)

- 9.7 Key skill: Explain sustainability (environmental, social, economic) and its importance in the promotion of health and wellbeing in a global context (tlvd-1925)

Key skill: Explain the Human Development Index and evaluate its usefulness in measuring human development of countries (tlvd-1926)

- 9.8 Extended response: build your exam skills (tlvd-2884)

Weblinks

- 9.5 Human development
Wealth and health

Interactivities

- 9.8 Crossword (int-6895)
Definitions (int-6896)

To access these online resources, log on to www.jacplus.com.au.

10 Global trends and health and wellbeing

LEARNING SEQUENCE

10.1 Overview	541
10.2 The implications for health and wellbeing of climate change	542
10.3 The implications for health and wellbeing of conflict and mass migration	552
10.4 The implications for health and wellbeing of world trade and tourism.....	557
10.5 The implications for health and wellbeing of digital technologies.....	564
10.6 KEY SKILLS	568
10.7 Review	571



10.1 Overview

Key knowledge	Key skills
Implications for health and wellbeing of global trends including: <ul style="list-style-type: none">• climate change (rising sea levels, changing weather patterns and more extreme weather events)• conflict and mass migration• increased world trade and tourism• digital technologies that enable increased knowledge sharing	Analyse the implications for health and wellbeing of particular global trends

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Acidification	Ecosystem
Aquifer	Glacier
Asylum seeker	Globalisation
Biodiversity	Greenhouse gases
Desalination	Stateless
Displaced people	

Exam terminology

Analyse Examine the components of; look for links, patterns, relationships and anomalies

Resources

-  **Digital document** Key terms glossary (doc-36132)
-  **Exam question booklet** Topic 10 Exam question booklet (eqb-0064)

10.2 The implications for health and wellbeing of climate change

KEY CONCEPT Understanding the impact of rising sea levels, changing weather patterns and more extreme weather events on health and wellbeing

This topic explores the implications for health and wellbeing of increased **globalisation** and the global trends relating to climate change, conflict and mass migration; increased world trade and tourism; and digital technologies that enable increased knowledge sharing.

Global trends are patterns of social, environmental and economic activity that affects many countries and require action to be taken at a global level.

10.2.1 Climate change and extreme weather events

The Earth's climate has experienced changes throughout history as a result of small changes in the Earth's orbit around the sun. However, over the last 50 years, the burning of fossil fuels to provide energy has resulted in a 20 per cent increase in the production of carbon dioxide and other **greenhouse gases**, largely due to transport and industry. Greenhouse gases trap heat that is radiated from the sun. A range of human activities are now producing levels of greenhouse gases that are leading to global warming and contributing to changes in global climate beyond those that occur in the normal cycle of the Earth.

The temperature of the planet has warmed by around 1.0 degrees Celsius since 1850, with each decade becoming increasingly warmer. The six years from 2015–2020 were the warmest years on record. In 2020, between January and October, the global mean temperature was 1.2 degrees Celsius above the 1850–1900 baseline. Longer term, the temperature of the planet is predicted to increase by 3.5 degrees Celsius. This increase in the Earth's temperature has significant consequences. **Glaciers** are melting and so are the ice sheets that cover West Antarctica and Greenland. This has led to rising sea levels, changing weather patterns and more intense and frequent extreme weather events such as floods, cyclones and heatwaves.

The quality of the air and water and the availability of food and shelter are all affected by climate change and will have significant effects on health and wellbeing. According to the World Health Organization, between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths each year, from malnutrition, malaria, diarrhoea and heat stress.

Globalisation the process whereby boundaries between countries are reduced or eliminated allowing individuals, groups and companies to act on a global scale. It can be described as transforming the different societies of the world into one global society. A reduction in barriers to trade, communication and transport contributes to this process.

Greenhouse gases gases that contribute to the greenhouse effect by absorbing heat. Carbon dioxide and chlorofluorocarbons (used in the manufacture of aerosol sprays) are examples of greenhouse gases.

Glacier a slowly moving mass or river of ice formed by the accumulation and compaction of snow on mountains or near the poles

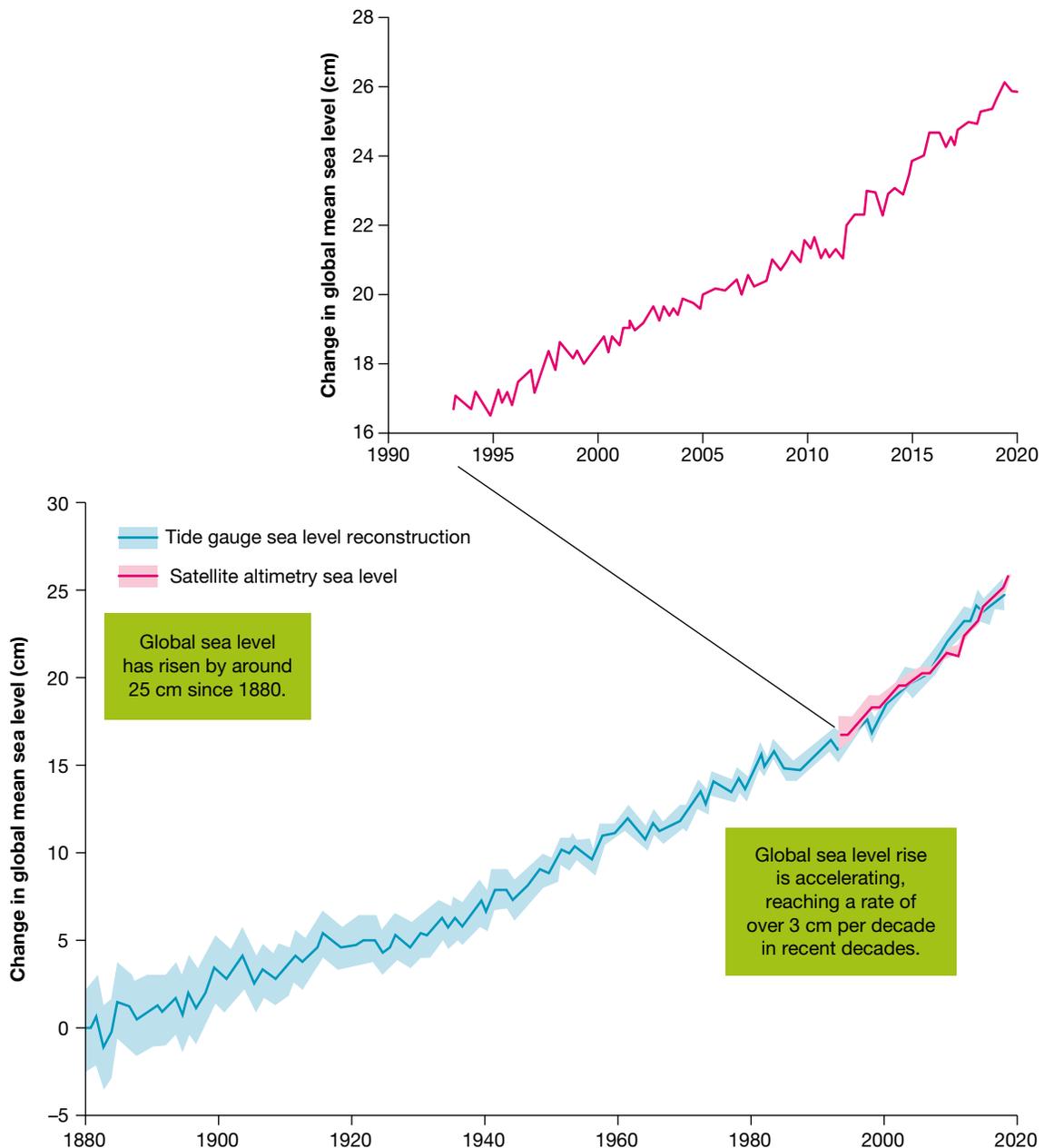
EXAM TIP

When asked to discuss the impact of climate change on health and wellbeing use an example linked to either rising sea levels, changing weather patterns or extreme weather events. Once you have chosen an appropriate example you will then need to show how it impacts on different dimensions of health and wellbeing using specific examples.

10.2.2 Rising sea levels

Increased greenhouse gas emissions have contributed to global warming and rising sea levels. The average sea level increased at a rate of around 1.8 millimetres per year from 1961 to 2003, and more recently has been reported to have increased at a rate of 3.5 millimetres each year, or 35 cm per decade. It has been predicted that if greenhouse gas emissions continue at the same rate, the average sea level could increase by almost one metre by 2100 (see **FIGURE 10.1**). This would mean that approximately 150–200 million people would have to relocate, as their land would be under water. Currently, in some low-lying coastal areas, rising sea levels are already having an impact on the availability of land for farming.

FIGURE 10.1 Increase in sea levels, 1880–2020



Source: © CSIRO *State of the Climate 2020*, Australian Bureau of Meteorology Commonwealth of Australia, p. 13.

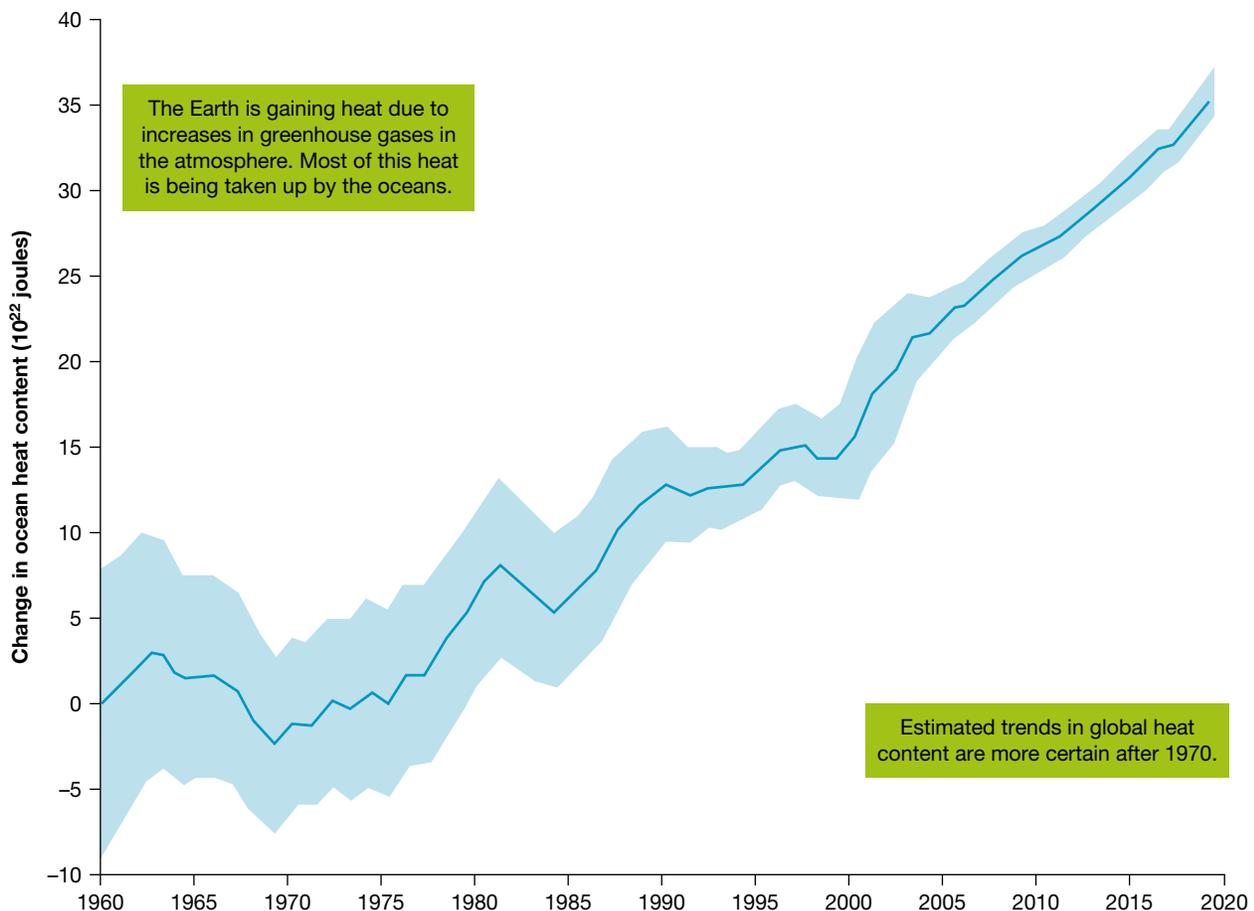
The two major causes of rising sea levels are:

- the expansion of the water that occurs as it warms
- the increase in the volume of water that results from the melting of ice in the Earth's polar regions and glaciers.

The average temperature of the oceans has increased 0.1 degrees Celsius and warming extends as far as 2000 metres below the surface (see **FIGURE 10.2**). The Arctic sea ice cap has shrunk by 2.7 per cent each decade since 1978.

According to a new report from the United Nations, sea levels are rising faster than previously thought. Each decade sea levels are rising by 3.5 cm.

FIGURE 10.2 Estimates of the change in ocean heat content over the full ocean depth, from 1960 to present. (Shading provides an indication of the confidence range of the estimate.)



Source: © CSIRO *State of the Climate 2020*, Australian Bureau of Meteorology Commonwealth of Australia, p. 11.

10.2.3 Impact of rising sea levels on health and wellbeing

Rising sea levels will have a significant impact on health and wellbeing. People living close to the sea will need to relocate, the availability of fresh water and food will be reduced and there will be changes in **biodiversity** (see **FIGURE 10.3**).

Biodiversity the variety of different plants, animals and micro-organisms, their genes and the ecosystems of which they are a part

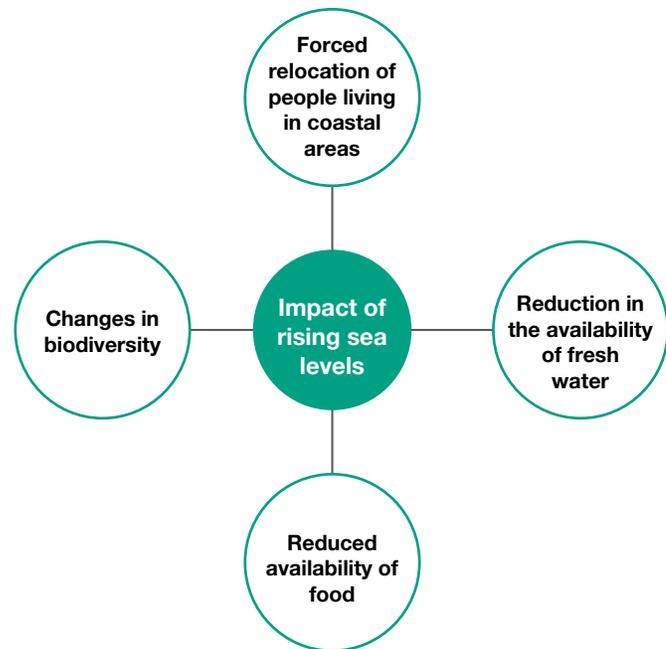
Relocation of people living in coastal areas

Rising sea levels mean people living in coastal areas will lose their villages and farms due to flooding. More than half of the world's population lives within 60 km of the sea. Having to relocate houses and farms is stressful and increases the risk of people suffering from poor mental health and wellbeing. Relocation can also place strain on existing infrastructure, such as safe water and sanitation services, housing and healthcare services. This can lead to poor physical health and wellbeing and increased mortality rates from communicable diseases such as diarrhoea and malaria. Relocating can interfere with social networks within the community, reducing levels of social health and wellbeing as well as impacting spiritual health and wellbeing as people become disconnected from their communities.

Reduction in the availability of fresh water

As sea levels increase, salt water gradually seeps into fresh underground water sources known as **aquifers**, or freshwater springs. These aquifers provide most of the fresh water that is available for use on the planet. People cannot drink salt water, and many plants cannot survive high levels of salt. While salt can be removed from water through **desalination** plants, these are very costly to build and maintain and many countries do not have the resources necessary. This will bring about widespread water scarcity, which will have significant consequences for health and wellbeing.

FIGURE 10.3 Rising sea levels will have a significant impact on health and wellbeing as it affects food and water supplies and forces people living in coastal areas to relocate.



Aquifer an underground layer of rock, sediment or soil that contains water
Desalination the process of removing salt, especially from sea water so that it can be used for drinking or irrigation

FIGURE 10.4 Global warming will lead to more extreme weather events, such as this flood in Thailand, and rising sea levels. This means villages and farms will be lost.



Lack of water impacts physical health and wellbeing as it could bring about increased levels of morbidity and mortality from diarrhoea and other water-borne diseases as people struggle to reuse the limited water they might have available.

Water scarcity can also lead to increased levels of poverty, because people must pay large amounts of money to purchase clean water for drinking. This will affect mental health and wellbeing due to the increased stress this produces. Physical health and wellbeing can also be affected because families may not have sufficient money to afford food, clothing, shelter and healthcare, increasing the risk of malnutrition and illness. Water scarcity is also anticipated to be a major cause of conflict as countries seek to gain control over the limited fresh water supplies that are available. Conflict leads to poor health and wellbeing in all dimensions.

Reduced availability of food

Salt water is unsuitable for many trees, plants and crops. This means that existing seeds, grains, fruits and vegetables will not be suitable for growing in many areas. Fruit trees that provide food for people are likely to stop bearing fruit because of the salinity. Increased temperature of the oceans leads to increased **acidification**, which affects marine life such as clams, oysters and sea corals. These animals provide food for other marine animals. An interruption in the marine **ecosystem** reduces the number and variety of fish and seafood available for consumption, affecting thousands of people worldwide who rely on seafood as their main food source.

Rising sea levels will therefore bring about reductions in food supply and further widespread hunger and malnutrition, which will reduce the overall level of health and wellbeing. Hunger and malnutrition affects physical health and wellbeing by reducing immunity to disease, contributing to micronutrient deficiencies, lack of energy and stunted growth in children.

Acidification decrease in the pH levels of the ocean that occurs when carbon dioxide in the atmosphere reacts with the sea water

Ecosystem a community of living things and the non-living components of the environment in which they live. An ecosystem can include plants, animals, micro-organisms, water, air, soil and rocks.

FIGURE 10.5 Water scarcity can have consequences for health and wellbeing.



Poor physical health and wellbeing reduces emotional health and wellbeing, as people may worry and become fearful about how they will feed their family and the risks of ongoing illness. Illness and fatigue affects a child’s ability to attend school and a parent’s ability to work, which reduces opportunities to develop relationships, affecting social health and wellbeing. Ongoing illness and hunger leads to disempowerment and disconnection from the community, reducing spiritual health and wellbeing.

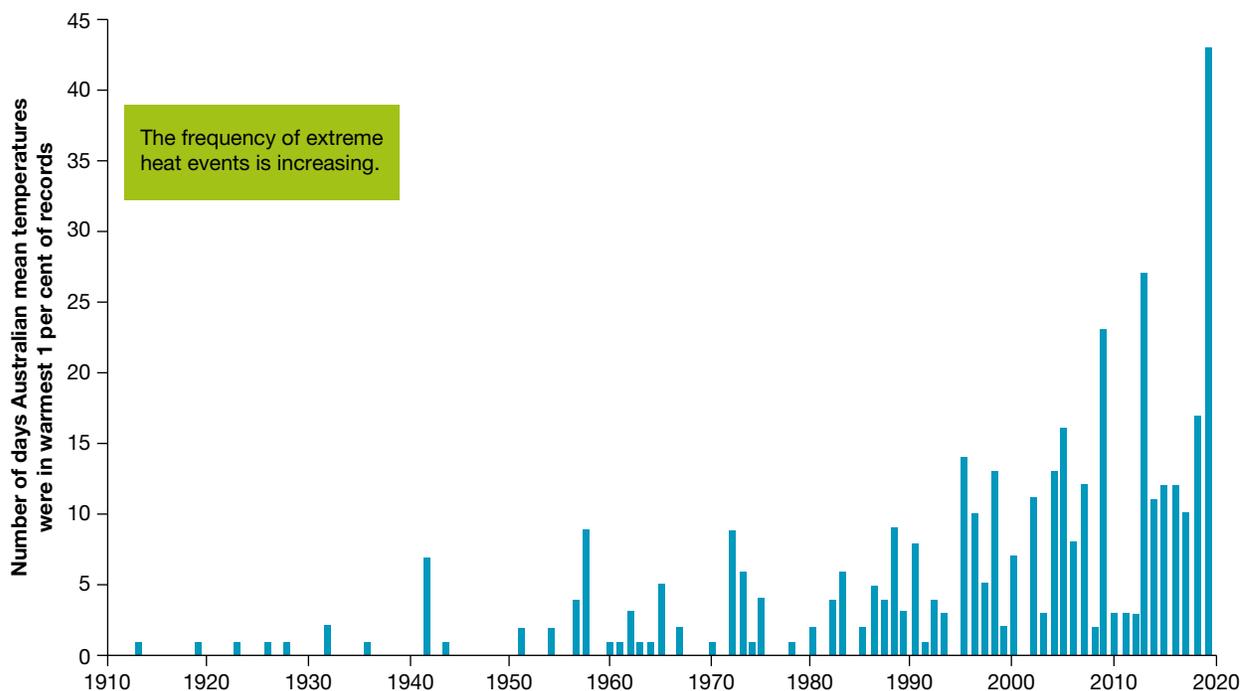
Changes in biodiversity

Increased salt water will change the chemistry of the soil in coastal areas, making it unsuitable for many coastal plants to survive. Similarly, many forms of wildlife, such as shorebirds and sea turtles, use the sand on beaches to nest. Rising sea levels could lead to the flooding and erosion of these areas, reducing habitats and endangering these animals. Biodiversity is important for keeping resources such as water and soil healthy and capable of recovering from disasters and pollution. Biodiversity helps ensure a sustainable food supply and is the source of many medicines and drugs. All species are part of a complex ecosystem that relies on a wide variety of plants and animals for the system to be sustainable. Rising sea levels and salinity has the potential to interrupt this ecosystem and threaten many of the systems that sustain life, impacting all dimensions of health and wellbeing.

10.2.4 Changing weather patterns and extreme weather events

The weather and climate are changing due to global warming. Oceans play an important role in determining our climate, and the increasing temperature of the oceans has brought about changing weather patterns. With temperatures expected to increase we are likely to experience more extremely hot days and fewer extremely cool days. The frequency of days with extremely high temperatures in Australia continue to increase (see **FIGURE 10.6**). In 2019, Australia experienced 43 extremely warm days, more than triple the number in any of the years before 2000.

FIGURE 10.6 Number of days in Australia where extreme heat was experienced



Number of days each year where the Australian area-averaged daily mean temperature for each month is extreme. Extreme daily mean temperatures are the warmest 1 per cent of days for each month, calculated for the period from 1910 to 2019.

Source: © CSIRO *State of the Climate 2020*, Australian Bureau of Meteorology Commonwealth of Australia, p. 4.

Rainfall patterns are also expected to change. Dry regions will become even drier and wet regions will become even wetter. In Australia, for example, rainfall from May to July has reduced by around 20 per cent since 1970 in the southwest areas of Australia but has increased across parts of northern Australia.

Extreme weather events are also becoming more common, with the number of weather-related natural disasters having more than tripled since the 1960s. Heatwaves are expected to become more frequent, making droughts and fires more likely in many areas. Rainfall in countries such as Ethiopia, where droughts are already common, could decline by 10 per cent over the next 50 years. Extreme weather events such as cyclones, floods, droughts, fires and storms are also expected to become more common. This will affect health and wellbeing by increasing the incidence of infectious diseases, bringing about extremes in temperatures that will change the types of crops that can be grown and reducing access to fresh water.

Impact of changing weather patterns and extreme weather events on health and wellbeing

Increased temperatures, changing rainfall patterns and more extreme weather events will impact on health and wellbeing globally. We are likely to see an increase in a range of infectious diseases, increased burden of disease from conditions such as cardiovascular disease and asthma, increased homelessness, particularly in low-income countries, greater hunger and undernutrition and less access to fresh water (see **FIGURE 10.7**).

FIGURE 10.7 Changing weather patterns and extreme weather events will have a significant impact on health and wellbeing.



Increased incidence of infectious diseases

Many infectious diseases are spread by mosquitoes that breed in surface water that becomes stagnant. Mosquitoes thrive in humid conditions. Warmer temperatures are likely to produce ideal breeding grounds for mosquitoes. Physical health and wellbeing could be compromised as an increase in the mosquito population could result in an increase in diseases such as malaria, dengue and yellow fever, and the spread of these diseases into countries that were previously unaffected. Floods and droughts also increase the risk of diarrhoeal diseases. Other diseases linked to heavy rainfall and contaminated water supplies include cholera, giardia, typhoid, and hepatitis A.

FIGURE 10.8 Mosquitoes spread many infectious diseases.



Increased burden of disease from cardiovascular disease and asthma

Extreme temperatures can kill people, particularly those who suffer from cardiovascular and respiratory diseases, the elderly and young children. Climate change is predicted to see an increased frequency and intensity of heatwaves, as well as warmer summers and milder winters. Pollen levels increase during periods of high heat and can trigger asthma, which already accounts for a high burden of disease, therefore impacting physical health and wellbeing.

Increased homelessness

The impact of extreme temperatures is likely to be greater in low- and middle-income countries as they lack the resources to cope with natural disasters, which often leave people displaced or homeless. Homelessness is a major cause of poor emotional and mental health and wellbeing. It reduces social connection and belonging and, therefore, reduces social and spiritual health and wellbeing. Without safe housing, the risk of injury and violence is increased, which reduces physical health and wellbeing.

Increased hunger and malnutrition

Changes in weather will affect the growth of many crops around the world. Crops such as wheat and rice grow well in high temperatures, while plants such as maize and sugar cane prefer cooler climates. Changes in rainfall patterns will also affect how well plants and crops grow. The effects of a change in the weather on plant growth may lead to some countries not having enough food and experiencing high levels of hunger and undernutrition. This affects physical health and wellbeing. Children are especially at risk of stunting and poorly developed immune systems, which will increase the risk of contracting a range of diseases and suffering these diseases for a much longer period of time. Hunger reduces a child's opportunity to attend school and develop social connections, which reduces social health and wellbeing. Mothers often have to care for the sick children, which reduces the time she is able to work in the fields to provide food for the family, and this increases stress and impacts mental health and wellbeing.

Reduced access to fresh water

Flood water contaminates water stores, which means clean water becomes unavailable for drinking. This increases the incidence of water-borne diseases such as diarrhoea, typhoid and giardia. Flooding is also responsible for drownings and physical injuries, which affects physical health and wellbeing.

FIGURE 10.9 Climate change poses a threat to health and wellbeing worldwide.



Source: Adapted from the World Health Organization.

10.2 Activity

Access the **Climate change** weblinks and worksheet in the Resources tab and then complete the worksheet

on Resources

 **Digital document** Climate change worksheet (doc-32225)

 **Weblinks** Climate change – the mental impact
Climate change – sea levels rising

10.2 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

10.2 Quick quiz **on**

10.2 Exercise

10.2 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 5, 7

■ LEVEL 2

3, 4, 6, 8

■ LEVEL 3

9, 10, 11

Test your knowledge

1. What is meant by global trends?
2. What has caused the increase in the production of carbon dioxide and other greenhouse gases over the last 50 years?
3. Why do increasing levels of greenhouse gases contribute to global warming?
4. What temperature increase is predicted for the planet in the longer term? Outline the consequences of this.
5. What are the two major causes of rising sea levels?
6. Explain three ways that rising sea levels can have an impact on health and wellbeing.
7. Provide three examples that represent extreme weather events.
8. Outline three ways in which changing weather patterns will affect health and wellbeing.

Apply your knowledge

9. Explain the relationship that exists between rising sea levels and conflict between countries.
10. Outline the evidence that suggests global warming is contributing to changing weather patterns.
11. Using examples from **FIGURE 10.9**, discuss why action to address climate change will benefit health and wellbeing.

10.2 Quick quiz **on**

10.2 Exercise

10.2 Exam questions

Question 1 (6 marks)

Source: *VCE 2019, Health and Human Development Exam, Q.11*; © VCAA

Who is at risk of climate change?

Everyone

- Those living in poverty, as well as women, children and the elderly.
- Outdoor workers and people living with chronic medical conditions.
- Children are the most vulnerable due to long exposure to environmental risks.

Everywhere

- Those living in megacities, small island developing states and other coastal, mountainous and polar regions.
- Countries with weak health systems will be least able to prepare and respond.

Source: text from infographic from World Health Organization

Using the information provided above, **analyse** the implications of climate change for health and wellbeing.

Question 2 (2 marks)

Describe how climate change can affect the health and wellbeing of people living in a low-income country.

Question 3 (3 marks)

Outline three examples of climate change.

Question 4 (2 marks)

Describe how extreme weather events impact on the health and wellbeing of people.

Question 5 (3 marks)

According to the World Health Organization:

‘Although global warming may bring some localised benefits, such as fewer winter deaths in temperate climates and increased food production in certain areas, the overall health effects of a changing climate are likely to be overwhelmingly negative.’

Outline three negative impacts on health and wellbeing that result from climate change.

More exam questions are available in your learnON title.

10.3 The implications for health and wellbeing of conflict and mass migration

KEY CONCEPT Understanding the impact of conflict and mass migration on health and wellbeing

10.3.1 Conflict

Since 2001, the level of conflict worldwide has increased. Acts of terrorism that have deliberately targeted civilians have become more common and more deadly. According to the World Health Organization, armed conflicts are now the largest and longest experienced since the end of World War II, and the number of refugees and **displaced people** as a result of conflict is also at its highest since World War II. The nature of conflict has also changed, with international humanitarian law now being largely ignored. There is deliberate bombing of healthcare facilities and siege and starvation tactics are being used as weapons of war. All of this contributes to why conflict is considered a global trend.

Displaced people those who are forced to leave their home because of war or persecution

Impact of conflict on health and wellbeing

Conflict has a significant impact on health and wellbeing. Besides the obvious loss of life that occurs during periods of conflict, the associated effects flow through to all parts of society. Those who are already experiencing poor living conditions and poor physical health and wellbeing are often the most affected, further reducing health and wellbeing. Low- and middle-income countries are often not in an economic position to sustain a war effort and provide basic resources for their people. The physical environment can be destroyed, which can limit access to supplies such as food and water, and services such as healthcare. As a result, malnutrition is increased and conditions that may have been treatable during peaceful times, such as injuries and infections, are left untreated during times of conflict. This affects physical health and wellbeing. Water and sanitation facilities and electricity supplies can also be destroyed and thousands of people are at risk of dying from diseases caused by unsafe water.

FIGURE 10.10 During times of war and conflict, healthcare facilities are often deliberately bombed.



The effects of conflict also include physical injuries, higher maternal and infant mortality, and increases in outbreaks of communicable diseases such as typhoid, dysentery and cholera. Mental health and wellbeing is affected during times of conflict, with individuals living in fear and being concerned for the health and wellbeing of themselves and their families.

During times of conflict the risk of personal injury and the destruction of infrastructure can make it difficult to reach those requiring assistance and aid. For these reasons, health workers may also find it difficult to carry out their work, compounding the effects on health and wellbeing.

Women are at higher risk of rape and abuse when conflict occurs. Lack of protection from rival forces has an impact on the lives of women and children, affecting their physical, social, spiritual, emotional and mental health and wellbeing. Things rarely return to normal when the conflict ends, and the damage done may mean people cannot lead lives equivalent to those they were leading before the conflict. Long-lasting effects, such as the presence of landmines and the lack of infrastructure, can affect the lives of residents for many years into the future. Many families are also left without an income earner, which can drive them further into poverty.

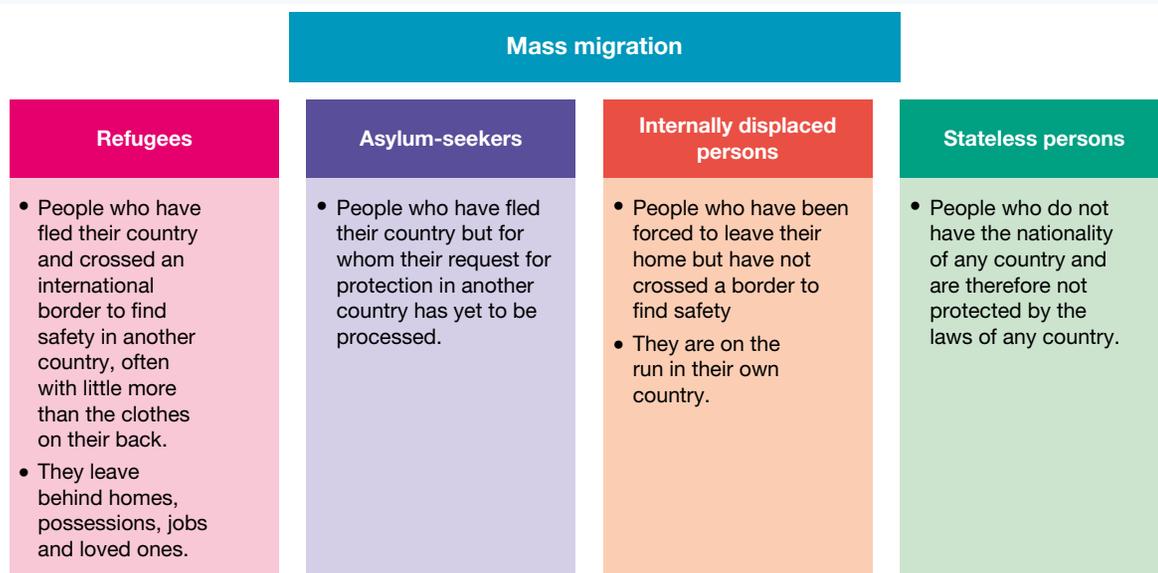
10.3.2 Mass migration

Mass migration refers to movement of large groups of people from one geographical area to another. The main reason for mass migration is the forced displacement of people as a result of conflict, persecution, violence and violations of human rights. In 2020, the United Nations Refugee Agency (UNHCR) estimated 79.5 million people were at risk as a result of these factors. This included 26 million refugees, 4.2 million **asylum-seekers**, 45.7 million internally displaced people (IDPs) and 4.2 million **stateless** people. In 2020, UNHCR offices reported that at least 11 million people were newly displaced with around 8.6 million displaced within their own country and 2.4 million displaced across international borders, most of whom moved into neighbouring countries (see **FIGURE 10.11**).

Asylum seeker a person seeking international protection and whose refugee status is yet to be determined

Stateless a situation where a person does not have citizenship of any country. These individuals have no protection of their human, social or political rights and cannot access education or healthcare or have freedom of movement.

FIGURE 10.11 Mass migration refers to movement of large groups of people from one geographical area to another and includes refugees, asylum-seekers, internally displaced persons and stateless people.

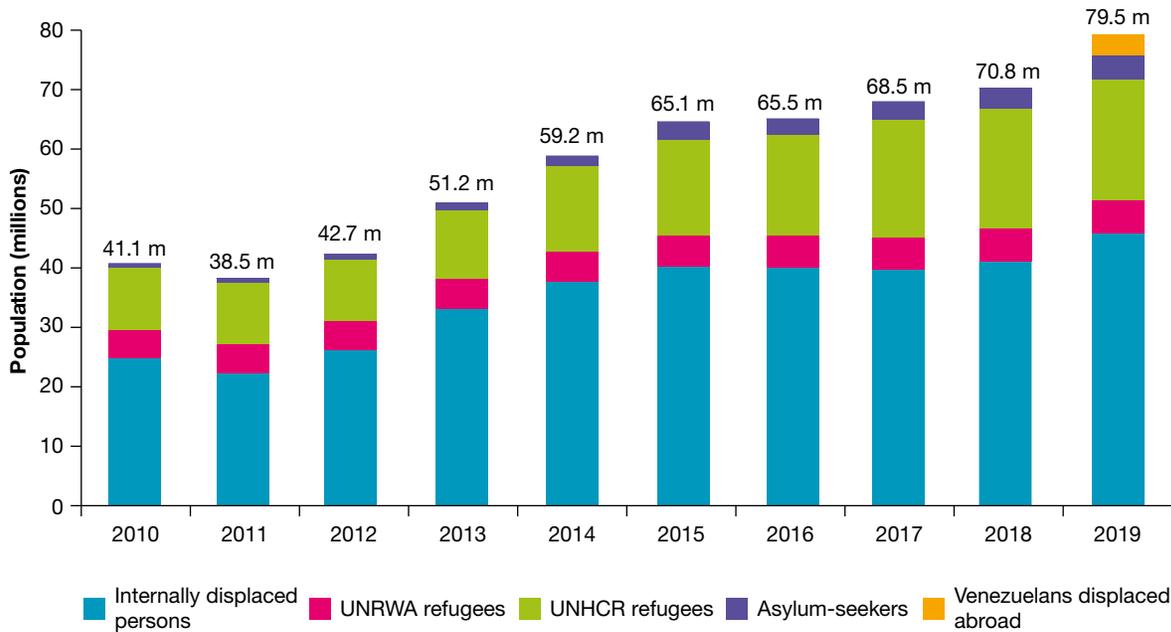


In 2020, one per cent of the world’s population, or 1 in 97 people, were forcibly displaced. The number of people who have been displaced has continued to increase since 2012 (see **FIGURE 10.12**).

When people are internally displaced, it usually results in overcrowding in the urban centres. People are also forced to relocate to other countries, most of which are low- and middle-income countries (see **FIGURE 10.13**). This can create a huge burden on the already struggling economies, infrastructure,

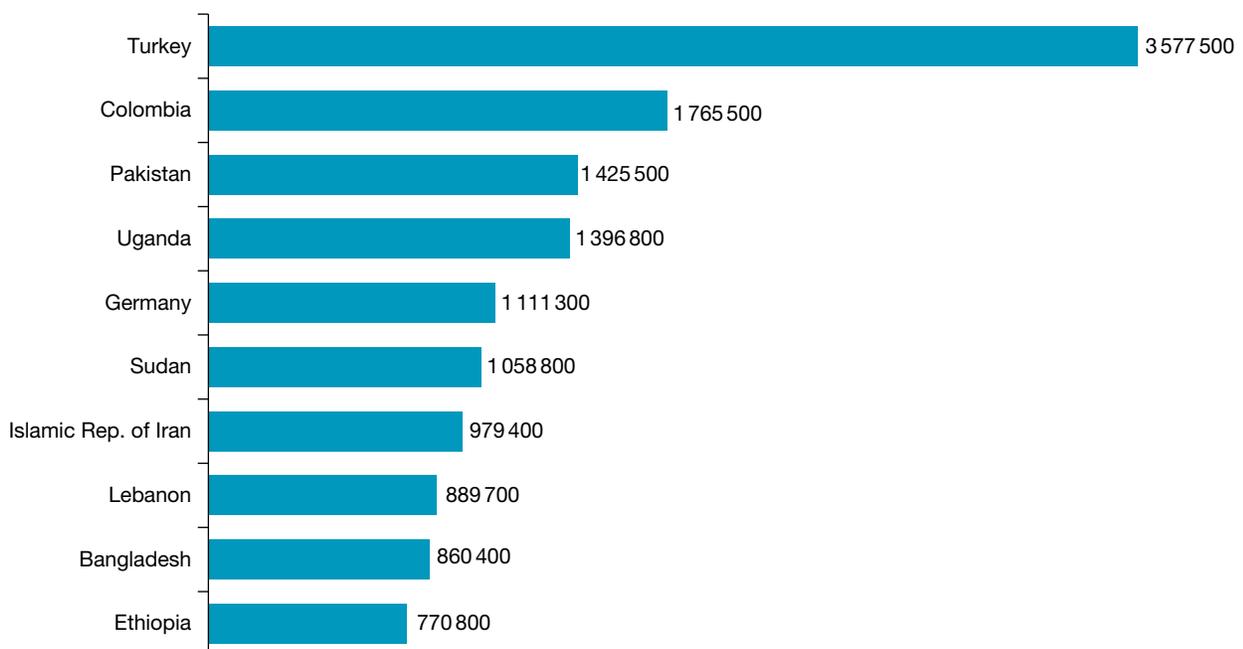
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FIGURE 10.12 The number of people affected by forced displacements continues to increase largely as a result of the war in Syria, Venezuela, Afghanistan, Myanmar, Somalia, South Sudan, Democratic Republic of Congo, Nigeria, the Central African Republic, Sudan and Eritrea.



Source: Adapted from UNHCR Mid-year trends 2020, p. 7.

FIGURE 10.13 Major host countries of refugees (start-2020–mid-2020)



Source: © UNHCR 2020

security and society of these countries and can have a destabilising effect regionally and globally. The mass migration of people also has the potential to contribute to the spread of infectious diseases. This adds further to the stress placed on the healthcare systems of countries that are already struggling to meet the health needs of the population.

Impact of mass migration on health and wellbeing

Mass migration has a significant impact on health and wellbeing. Most of those who are displaced have been forced to leave their homes, farms and jobs and are living below the poverty line. They often seek shelter with relatives or friends, in schools, public and abandoned buildings, makeshift shelters, or in the open with little or no protection. People suffer from insecurity, lack of services, and shortages of food and water. Children usually drop out of school to work or beg, and women may be forced into selling sex to get enough food to survive. Displaced women and children are particularly at risk of sexual and gender-based violence, increased levels of domestic violence, child abuse and alcohol-related violence, all of which not only affect their physical health and wellbeing but also their mental and emotional health and wellbeing.

Refugees are often forced into crowded and unsanitary living conditions in refugee camps. This can lead to outbreaks of cholera, diarrhoea and vaccine-preventable diseases that contribute to high rates of morbidity and mortality and reduced physical health and wellbeing.

FIGURE 10.14 Those who are displaced are often forced into crowded and unsanitary living conditions, which can spread infectious diseases such as cholera, diarrhoea, and vaccine-preventable diseases



10.3 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

10.3 Quick quiz



10.3 Exercise

10.3 Exam questions

Select your pathway

■ LEVEL 1

1, 3, 4, 5

■ LEVEL 2

2, 6, 7

■ LEVEL 3

8, 9

Test your knowledge

1. What is meant by 'the nature of conflict has changed'?
2. Outline three ways that conflict can affect health and wellbeing.
3. When conflict occurs, why are women at greater risk?
4. What is meant by mass migration?
5. What are the main reasons for mass migration?
6. Explain each of the four groups of people who generally constitute mass migration.
7. Explain four ways that mass migration can impact health and wellbeing.

Apply your knowledge

8. Why would conflict be described as a global trend?
9. Use the information in **FIGURE 10.13** to support the statement that most of the world's refugees relocated to low- and middle-income countries. Explain the consequences of this on health and wellbeing.

10.3 Quick quiz



10.3 Exercise

10.3 Exam questions

Question 1 (2 marks)

Source: VCE 2011, *Health and Human Development Exam, Section B, Q.4.a (adapted)*; © VCAA

Since 1980, almost half of the world's poorest countries have experienced conflict. More than 90 per cent of wars now take place within countries rather than between them.

The main causes of conflict within countries include:

- political instability
- economic and social inequalities
- extreme poverty
- lack of economic growth
- poor government services
- high unemployment
- environmental degradation.

During the 1990s alone, war claimed more than five million lives. The cost, in terms of human suffering, economic loss and wasted development opportunities, has been enormous.

Source: Focus, magazine published by AusAID

Explain how conflict may influence health status in low-income countries.

Question 2 (2 marks)

Source: VCE 2011, *Health and Human Development Exam, Section B, Q.4.b (adapted)*; © VCAA

Explain how conflict may influence human development in low-income countries.

Question 3 (4 marks)

Source: VCE 2007, *Health and Human Development Exam, Q.7.c*; © VCAA

The *World Food Programme* (WFP) is the food aid part of the United Nations. Food aid is one way to promote food security, which is defined as access of all people at all times to the food needed for an active and healthy life. One of the core policies for the *World Food Programme* is:

- to improve the nutrition and quality of life of the most vulnerable people at critical times in their lives.

In January 2002, the *World Food Programme* and the government of Sudan launched a five-year program to improve maternal and child nutrition. The *World Food Programme* recognises that women are the first and fastest solution to reducing poor nutrition. Experience shows that in the hands of women, food aid is far more likely to reach children. Seven out of ten of the world's hungry are women and girls. The *World Food Programme* seeks to give over half its food aid to females.

Source: Adapted from: World Health Organization, *World Food Programme*, <http://www.wfp.org/english>. Accessed March 2007

Describe two ways in which ongoing conflict in countries like Sudan would impact on the availability of food for women and children.

Question 4 (2 marks)

Outline two ways in which military conflict can impact the food supply of people living in a low-income country.

Question 5 (3 marks)

Describe how mass migration can impact on the health and wellbeing of people living in a low-income country.

More exam questions are available in your learnON title.

10.4 The implications for health and wellbeing of world trade and tourism

► **KEY CONCEPT** Understanding how world trade and tourism impacts health and wellbeing

10.4.1 World trade

World trade is the exchange of goods and services between countries. It is driven by different production costs in different countries. It is cheaper for some countries to import goods than to make them. Many low-income countries do not have the production processes available for converting raw materials into valuable consumer goods. Trade allows countries to specialise and enables technologies, skills and ideas to be shared. It promotes competition, which helps boost innovation and productivity and fosters economic growth. According to the World Bank, low- and middle-income countries constituted 48 per cent of world trade in 2018, up from 33 per cent in 2000, and the number of people living in extreme poverty has been cut in half since 1990, to just under one billion people. Trade has helped increase the number and quality of jobs in low- and middle-income countries, stimulated economic growth, and contributed to productivity increases.

World trade provides job opportunities for local workers. Increased levels of employment lead to a higher standard of living and more consumer purchasing. This ultimately sparks the country's economy and may help to develop small, locally owned businesses where the business owner can then sell to foreign markets and further increase their income. Many of these small business owners are women. Export growth has been associated with promoting gender equality. Many exporting firms that get set up in low- and middle-income countries employ women. An example of this is in Cambodia and India where most workers in the clothing industry are women.

FIGURE 10.15 In Bangladesh many women work in textile factories, producing garments for export.



An increase in employment levels, incomes and the general standard of living in low- and middle-income countries helps improve physical health and wellbeing by reducing hunger and providing resources for the provision of medical care. A reduction in hunger leads to more energy, better functioning body systems and fewer diseases. Preventative medical care, including checkups and vaccinations, are available to more of the population, which helps reduce communicable diseases such as measles and whooping cough.

When children have good physical health and wellbeing, they are able to attend school and gain an education, which in turn can provide them with the knowledge and skills needed to live a healthy life. This contributes to lower under-five mortality rates and increased life expectancy.

However, the impacts of world trade are not always positive for many low-income countries. To produce cheap goods, some multinational corporations have been accused of social injustices, particularly against women who have been forced to work in dangerous conditions for very low pay. Many low-income countries do not have laws to protect the health and safety of workers. There have also been instances where children have been used to work in very unsafe and poor conditions where safety standards are ignored. This has significant impact on health and wellbeing. Women and children are at risk of disability and death due to working in unsafe conditions, which affects physical health and wellbeing. Crowded factories with poor ventilation put women and children at risk of respiratory conditions and communicable diseases, also impacting physical health and wellbeing. Social health and wellbeing is reduced as children are denied access to school and women are denied access to social interactions and the development of relationships. Unsafe working conditions increases the level of stress and anxiety and reduces self-esteem, impacting mental health and wellbeing. Spiritual health and wellbeing is also reduced as women and children can lose a sense of hope and purpose in life and are not given the opportunity to make choices in accordance with their values and beliefs.

Other areas of concern with world trade have been the increasing use of pesticides by corporate farms in low- and middle-income countries, with host countries ignoring costly environmental standards. There have also been situations where industrial waste has been incorrectly disposed of in the environment. This contributes to environmental degradation with the eventual reduction in the amount of food available and the further pollution of water sources. This impacts on physical health and wellbeing by contributing to increased hunger and malnutrition and an increase in waterborne diseases such as diarrhoea. Therefore there are many advantages and disadvantages associated with world trade and these are summarised in **TABLE 10.1**.

TABLE 10.1 Advantages and disadvantages of world trade

World trade	
Advantages	Disadvantages
<ul style="list-style-type: none"> • Fosters economic growth • Reduces poverty • Provides employment for local workers • Supports establishment of small, locally owned businesses largely owned by women • Promotes gender equality 	<ul style="list-style-type: none"> • Few occupational health and safety rules exist, which leads to women and children being forced to work in dangerous conditions for low pay • Overuse of pesticides can lead to environmental degradation • Incorrect disposal of industrial waste can lead to environmental contamination

10.4.2 Tourism

Tourism is one of the fastest growing industries worldwide. It represents international trade in services and accounts for 10 per cent of the world's exports in goods and services or GDP. According to the United Nations World Tourism Organization, international tourist arrivals increased from 674 million in 2000 to 1442 million in 2018. Despite the impact of COVID-19, international tourist arrivals worldwide are expected to reach 1.8 billion or more by 2030. The strongest growth in tourism is expected to be in Asia and the Pacific regions, where tourist visitors are predicted to increase by 331 million to reach 535 million in 2030.

10.4.3 Why is tourism important?

Tourism plays a key role in developing jobs for local people as well as promoting local culture and products. It is a key driver of economic progress. Tourism is responsible for providing approximately one out of every 11 jobs and 10 per cent of the world's economic output or GDP.

Money spent by international visitors on accommodation, food and drink, entertainment, shopping and other goods and services reached US\$1451 billion in 2018, which is around US\$4 billion per day in tourism exports. In many low- and middle-income countries, tourism is a major source of income and employment. In many of these countries, tourism ranks as the highest export sector. Tourism involves many service providers and organisations, some of which are directly involved in the provision of services to tourists, while others work in the background and support the services that enable tourism to take place. Tourism encourages governments to spend money developing the necessary infrastructure, which can benefit local communities and families. Tourism has helped countries such as Cabo Verde, the Maldives and Samoa move from being classified as low-income countries to middle-income countries.

FIGURE 10.16 Tourism is a major source of income in Samoa.



How tourism promotes health and wellbeing

Tourism has five key benefits that promote health and wellbeing:

1. *Tourism promotes inclusive and sustainable economic growth* — Tourism accounts for 10 per cent of the world's GDP and this trend is set to continue. Economic growth is important if people and countries are to escape from poverty. Economic growth promotes job creation and opportunities for people to be employed and earn an income. With an income, families are more able to purchase the necessary food, water, clothing, shelter and healthcare that promote physical health and wellbeing. With an income, families can afford to send their children to school, which creates opportunities for them to develop relationships that promote social health and wellbeing. Healthier people feel more confident, empowered

and resilient, which increases the level of emotional health and wellbeing. Greater empowerment builds a sense of belonging to the community, which promotes spiritual health and wellbeing.

2. *Tourism contributes to social inclusiveness and employment* — One in every 11 jobs globally is provided by the tourism industry and more than half of all international tourists will travel to low- and middle-income countries. Almost twice as many women are employed in the tourism sector compared with any other sector. This increases female empowerment and gender equality. This promotes social, emotional, mental and spiritual health and wellbeing. Tourism’s contribution to economic growth and development can also benefit health and wellbeing. Money from tourism can be reinvested in healthcare services, which can improve maternal health and wellbeing, reduce child mortality and prevent diseases, which promotes physical health and wellbeing. A well-trained and skillful workforce is crucial for tourism to prosper. The tourism sector can provide incentives to invest in education and vocational training. Youth, women, older people and those with special needs can also benefit through education, where tourism has the potential to promote inclusiveness, a culture of tolerance, peace and non-violence, and all aspects of global exchange and citizenship. These promote all dimensions of health and wellbeing.
3. *Tourism promotes resource efficiency and environmental protection* — Tourism is effective in raising money for the conservation of wildlife and the environment. It can be a way of protecting and restoring biodiversity. This helps promote spiritual health and wellbeing. Protecting the environment is also important for physical health and wellbeing.
4. *Tourism preserves cultural values, diversity and heritage* — Tourism can protect traditional values and customs, empower communities and foster pride, which promotes emotional and spiritual health and wellbeing. Tourism also promotes cultural diversity and raises awareness of the value of heritage, which promotes social, emotional, mental and spiritual health and wellbeing.
5. *Tourism promotes mutual understanding, peace and security* — Tourism can break down barriers that exist between cultures, and provides opportunities to build trust and peace. Tourism is also a resilient industry that can recover quickly in the event of a natural disaster. Trust and peace between countries helps reduce conflict, which promotes all dimensions of health and wellbeing. Developing trust promotes social and emotional health and wellbeing.

10.4.4 The challenges of tourism

While tourism can generate many benefits for local communities, it can bring about many challenges, particularly if it is unsustainable. It can pose environmental challenges, cause overcrowding and put pressure on local infrastructure and services; it can also place stress on fragile local ecosystems. Disposal of liquid and solid wastes generated by the tourism industry may strain the capacity of local infrastructure to treat the additional wastes generated by tourism activities. These wastes can contaminate water supplies, which impacts physical health and wellbeing. The World Tourism Organization defines sustainable tourism as ‘tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities’.

Tourism can also be considered a threat to health and wellbeing. Increasing international air travel, trade and tourism can result in disease-producing organisms being transported rapidly from one country to another. Where countries previously would have reported an outbreak of an infectious disease, the possible threat to trade and tourism and the corresponding economic impact can mean some countries

FIGURE 10.17 Why tourism matters



Source: World Tourism Organization 2016, 'Why Tourism Matters', infographic (online), available at www.unwto.org

may be tempted not to report them — which can lead to potential epidemics. The most recent example of this is COVID-19. To try to prevent the spread of the disease around the world, most countries placed bans on international travel. Australia and New Zealand placed stringent control on international travel, limiting the number of people coming into the country and enforcing 14 day quarantine on international travellers and residents returning to Australia. The impact of COVID-19 on tourism has been significant. The World Trade Organization estimated 900 million fewer international tourist arrivals in 2020 compared to the same period in 2019, and represents a loss of US\$935 billion in export revenues from international tourism.

Other examples of how diseases have been spread through tourism include: at the 2016 Olympic Games in Rio De Janeiro there was widespread fear that the Zika virus, which was prevalent in the area, would be contracted by the 16 000 athletes and 600 000 visitors attending the Games. There were concerns that the virus could be transmitted via sexual contact and spread further once visitors returned home. There were also fears that the disease could be spread to mosquitoes in visitors' home towns on their return. Vomiting and diarrhoeal diseases have been associated with people travelling on cruise ships, stopping at ports along the way and infecting local communities. These diseases were also spread to 65 people at the 2006 FIFA World Cup in Germany. Concerns also occur when different strains of viruses occur in different countries and care must be taken to control the introduction of new strains into countries such as Australia.

EXAM TIP

When analysing the impact of world trade and tourism on health and wellbeing of people in low- and middle-income countries consider both the benefits and challenges in your discussion.

CASE STUDY

The challenges of tourism

In Kyrgyzstan a tourist village waits for visitors to return

By **United Nations Development Programme**

DECEMBER 29TH, 2020

Where others hadn't ventured, Umar Tashbekov saw an opportunity. His village, Sary-Mogol, Kyrgyzstan, at an altitude of 3600 metres, is located near Lenin's Peak, a popular destination for tourists. If they were already hiking there, why not attract them to his village and generate income for the residents?

The village, with a population of 5200, is a three-hour drive from the city of Osh, in the country's southeast. Life here is not easy. The short summers and unfavourable growing conditions make it hard to grow much more than potatoes and barley. The main work is animal husbandry, with a large livestock market in town. Others find work as teachers or coal miners. Out of its small population, 500 people are estimated to have left for Russia and companies there are searching for more people to work in their factories.

An upside to the traditional life in the village, with grandparents, parents, children all living together, has been the slow spread of COVID-19. Because homes are already crowded, people mostly meet out in the street. That, and the overall government lockdowns, helped keep infection numbers low.

But the impact on livelihoods is deep. In the last decade, tourism has grown as a source of income for the population—almost everyone here is connected to the industry in some way. As the pandemic spread, the hit on tourism was felt across the country. Receipts from the export of tourism and travel, which represented almost six percent of GDP in 2018, have been forecast to almost disappear in 2020. Revenues are predicted to fall as much as 90 per cent.

In 2019, more than 1300 tourists passed through Sary-Mogol. This year, less than a dozen.

Umar opened the village's first guesthouse and tourist office in 2007 and invited other villagers to work with him. His company, CBT, soon became an 'incubator' for the industry—almost everyone working in tourism has at some point passed through its doors. Soon after, he also opened the village's first yurt camp, where tourists can stay in one of the twelve traditional Kyrgyz lodgings. They enjoy the unique feel of the village—the old Soviet Uaz cars, the ancient Ulak Tartysh horse game, the markets selling traditional crafts. ▶

Then Umar's son Abdilla Tashbekov took over the business. He has been a guide for more than ten years. He built his own guesthouse and was in the process of building a new one. He's always reading and researching on the internet, earning his reputation as the 'studious' one. His vision has led to new ideas to develop the town's industry and expand the family business. He and his father opened a bigger office, which now serves as a gathering place for guides, workers and tourists. He has organized ski training with other guides to move into more winter tourism activities.

In 2015, he started the village's Horse and Yak games festival and fair. The entire village attends, either as participants or spectators. Tourists buy tickets, and the revenue goes to the villagers working in the festival – cooking and selling traditional foods, performing traditional music and dancing shows, managing the yurt camp and playing in the horse and yak games.

All of that momentum has been lost in the wake of the pandemic.

'The tourist season is dead,' Abdilla says. 'We had to close the office, yurt camp and guest houses this year.'

...

Umar's other son Ali, is also involved in the family business. He began working at 13, before going to Osh to study logistics and welding. His training has come in handy during the pandemic. When the flow of visitors to the village stopped, he was able to find work as a mechanic in the local coal mine. But he loved working with tourists, meeting people from all over the world.

'It was a good time,' he reminisces. 'Sometimes I didn't have time to come home. After [guiding] one tour, I immediately went with other tourists back to the mountains.'

It was both a more interesting and healthy job, he says, being outside in nature all day. Now he worries about the dangerous health effects of the quarry gas he breathes in regularly. But as his wife worked in the kitchen of the family's guesthouse, now closed, this is the only form of income they have. With his father recovering from a broken leg, a mother who has Parkinson's disease, which involves expensive treatment, a one-year-old child and another on the way, the family's resources are stretched to the limit.

As tourism grew in the village, many others got involved in the industry. Now, they are also feeling the current pressures.

Buunisa Termechikova expected a normal summer. The entrepreneur opened a guesthouse and is an expert at traditional crafts, especially the traditional Kyrgyz women's hat. Built by her son in July, her new Ethnographic Museum highlights local products, cultural items and historical artefacts. In the absence of foreign visitors, she is using the space to conduct workshops on making local items and welcoming more villagers.

Despite the difficulties the village is facing, they still manage to find joy in their normal activities. They play volleyball in the local gym and participate in the traditional horse games. The games are usually held as part of a celebration, like the completion of a new house or birth of a baby and can command big prizes in the form of money or livestock.

Maybe it's this energy and spirit that makes the village attractive to those who visit. Two years ago, a Korean tourist and engineer had such a wonderful experience that he paid to upgrade the village's water infrastructure. Before, the villagers had to carry water from the river, but now they have it in their homes—making both their lives and the stays of tourists better.

Everyone in Sary-Mogol looks forward to sharing their energy and spirit with visitors again.

Source: 'The challenges of tourism', United Nations Development Programme, 29 December 2020, <https://stories.undp.org/in-kyrgyzstan-a-tourist-village-waits-for-visitors-to-return>

CASE STUDY REVIEW

1. What percentage of GDP did tourism represent in 2018?
2. In 2019, how many tourists visited Sary-Mogol?
3. Outline four examples that demonstrate the positive influence of tourism in Sary-Mogol.
4. Explain the impact that COVID-19 has had on the community of Sary-Mogol.
5. In addition to tourism, what other sectors of the economy in Kyrgyzstan are likely to be impacted by COVID-19?
6. How will the decline in tourism impact on the health and wellbeing of Umar's family?

10.4 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

10.4 Quick quiz



10.4 Exercise

10.4 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3

■ LEVEL 2

4, 5, 6, 7

■ LEVEL 3

8, 9, 10, 11

Test your knowledge

1. What percentage of the world's GDP does tourism contribute to?
2. Which regions are expected to have the strongest growth in tourism by 2030?
3. List the five key benefits of tourism.
4. Explain how tourism and world trade can contribute to health and wellbeing.
5. Outline two challenges that are associated with tourism.
6. What is meant by sustainable tourism and why is sustainable tourism important?

Apply your knowledge

7. Discuss the impact of COVID-19 on tourism.
8. Explain how world trade and tourism can help reduce poverty.
9. Outline how tourism and world trade can help achieve gender equality.
10. Explain how tourism can contribute to social inclusiveness.
11. World trade and tourism do not always promote health and wellbeing. Discuss.

10.4 Quick quiz



10.4 Exercise

10.4 Exam questions

Question 1 (1 mark)

Outline one negative outcome of world trade in low-income countries.

Question 2 (1 mark)

Outline one positive outcome of tourism in low-income countries.

Question 3 (4 marks)

Using examples, **describe** one positive and one negative impact world trade may have on the health and wellbeing of people living in a low-income country.

Question 4 (2 marks)

Tourism presents both positive outcomes and challenges to low-income countries. **Outline** both a positive outcome and a challenge of tourism for low-income countries.

Question 5 (2 marks)

Describe how tourism and world trade may improve education levels in low-income countries.

More exam questions are available in your learnON title.

10.5 The implications for health and wellbeing of digital technologies

KEY CONCEPT Understanding how digital technologies that enable increased knowledge sharing impacts health and wellbeing

Over the last 10 years there has been considerable growth in digital technologies. The world has become increasingly more connected. People, businesses and governments use the virtual world to deliver and access services, obtain and share knowledge, undertake transactions, shop, work and interact with each other. Digital media now allows people to selectively access information they need through multiple channels.

Developments in mobile phone technology and the rapid expansion of affordable mobile phone networks means that digital technologies are much more available to people, even those living in the most remote, resource-limited areas. The number of mobile phones now exceeds the world's population.

The expansion of digital technologies means mobile phone technology can be used not only for everyday communication but also for more complex data collection and sharing of health-related information. In Australia, digital technologies are used for contact tracing to reduce the spread of COVID-19. Many countries are using digital technologies in their health information systems. Mobile phones help healthcare workers in the field gather population data, such as the number and ages of men, women and children, the numbers of pregnant women and whether they access healthcare before, during and after pregnancy. This health-related information is important for governments to be able to establish programs that meet the needs of the population as well as evaluate the effectiveness of the programs implemented.

Digital technologies provide countries with the ability to register births, deaths and marriages, which ensures people have access to legal protection, education and basic human rights. Mobile phone technology can be used for disaster preparedness, and SMS services can be used to issue warnings of an impending emergency. This reduces stress levels and promotes mental health and wellbeing.

FIGURE 10.18 Digital technologies are now available to people who live outside major cities.



Digital technologies have the potential to engage individuals and families more directly in their healthcare experience. People now have access to more self-care and diagnostic information that they can use to monitor and improve their health and wellbeing. This can promote physical health and wellbeing, as people are more aware of their own health, as well as promote mental and emotional health and wellbeing.

The emergence of eHealth is changing the nature of healthcare. eHealth refers to health services and information delivered or enhanced through the internet and related technologies. eHealth has the capacity to increase efficiency in healthcare, which can reduce the cost by avoiding unnecessary duplication of diagnostic or therapeutic services and better communication that reaches more people. Digital technologies can empower people to manage their health and wellbeing and to adopt healthy behaviours. During the COVID-19 pandemic, telehealth replaced face-to-face GP and specialist consultations. Personal health records can be shared with other members of the healthcare team, used for ongoing disease monitoring and feedback, and to share health information and treatment goals with the patient. Digital technologies have the capacity to open new avenues for patient-centred medicine, and eventually enable more patient choice.

Online networks enable people to share and compare different diagnoses and treatments with people who have the same conditions all over the world. Members of an online community can ask for advice, learn from each other, discuss test results, and compare how different medications, treatments, or combinations of drugs might be working. Sharing information creates more informed and empowered people, and can lead to changes in the patient and health provider relationship. As health professionals are no longer the only source of information, the relationship becomes more equal and collaborative. Advances in technology are generating new opportunities to leverage eHealth tools to help individuals self-monitor and assess their symptoms, create online communities, and empower individuals with chronic disease to be actively engaged in the management of their health and wellbeing.

CASE STUDY

Telehealth is having a consultation with a healthcare provider by phone or video call

Many GPs, specialists and other healthcare providers now offer a telehealth consultation when a physical examination isn't necessary. It's not intended to replace essential visits to the doctor, but rather be a convenient solution when you can't see a doctor face to face.

What are the benefits?

With telehealth, you can see your nurse, doctor, psychologist, surgeon and other healthcare providers without having to visit them in person. What's more, if you've seen them in the last 12 months, they may be able to bulk-bill their service.

Healthcare when you can't leave home

If you're unwell or need to self-isolate, you can still attend a consultation virtually. Telehealth consultations are not only convenient, but can also reduce the spread of illness.

Your healthcare providers are closer than ever

Occasionally, Australians living in rural and remote areas need to travel far to see their healthcare provider. A telehealth consultation can save time by enabling doctors to consult with their patient by phone or video call.

Australians had more than 30 million telehealth consultations in 2020.

There are two ways to have a telehealth consultation

Phone

Talk to your healthcare provider using your mobile or landline phone.

Video

Have a video call with your healthcare provider using a device that has a video platform (this may be specified by your healthcare provider).

Source: <https://www.digitalhealth.gov.au/initiatives-and-programs/telehealth> (accessed January 2021)



CASE STUDY REVIEW

1. What is a telehealth consultation?
2. When would a person most likely choose a telehealth consultation rather than a physical one?
3. What are the benefits of telehealth consultations?
4. How many telehealth consultations occurred in 2020?
5. What are the two ways to have a telehealth consultation?
6. What might be some of the disadvantages of telehealth consultations?

10.5.1 The challenges of digital technologies

While digital technologies have the capacity to promote health and wellbeing, there is a darker side of internet and mobile phone technology use. Issues regarding the privacy and safety of children and young people is a concern in all countries, but those in low- and middle-income countries are at greater risk as there are fewer measures protecting children's safety online. Research by UNICEF has shown that almost a quarter of children in urban areas and one in every five children in rural areas surveyed in Vietnam shared personal information such as their phone number or name of their school with someone online. In South Africa, more than 70 per cent of users of an online social networking site talked to strangers at least once a week. In Vietnam, 49 per cent of urban children had been exposed to indecent content online, while 20 per cent of rural children reported having been bullied, threatened or embarrassed online. This can have a serious impact on emotional and mental health and wellbeing.

10.5 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

10.5 Quick quiz

on

10.5 Exercise

10.5 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

7, 8

■ LEVEL 3

5, 6

Test your knowledge

1. How are people, businesses and governments using digital technologies?
2. Outline how mobile phone technology is assisting people to share health information.
3. List the health information that can be collected using digital technologies and explain the benefits of each.
4. What is meant by eHealth?

Apply your knowledge

5. Explain how digital technologies can empower people to manage their health and wellbeing and to adopt healthy behaviours.
6. How do digital technologies contribute to a more equal and collaborative relationship between a patient and a healthcare worker?
7. Explain three ways that digital technologies can promote health and wellbeing.
8. Explain how digital technologies assisted Australians during COVID-19.

Question 1 (4 marks)

Source: VCE 2019, Health and Human Development Exam, Q. 14; © VCAA

Digital technologies are increasingly being used globally to share health knowledge. The Australian Government has established My Health Record, which is a digital health record system. It contains online summaries of an individual's health information, for example, medicines they are taking and allergies. My Health Record allows doctors, hospitals and other healthcare providers to view an individual's health information. Individuals can choose to opt out of the My Health Record system.

As of 26 May 2019:



90.1 %
National My
Health Record
participation rate.



20 million
clinical documents have
been uploaded to
people's My Health
Records.



49 million
medication prescription
and dispense records
have been uploaded.



15 900
healthcare professional
organisations are
connected, including GP
organisations, hospitals,
pharmacies and aged
care services.

Sources: infographics from My Health Record statistics, <www.myhealthrecord.gov.au/statistics>; text adapted from Australian Government, Office of the Australian Information Commissioner, <www.oaic.gov.au/privacy-law/other-legislation/my-health-records>

Analyse the implications of using digital technologies, such as My Health Record, for knowledge sharing on health and wellbeing.

Question 2 (1 mark)

What are three digital technologies that promote health and wellbeing?

Question 3 (2 marks)

An example of digital technologies that enable knowledge sharing is eHealth.

Outline what eHealth is.

Question 4 (2 marks)

“A new study for Janssen by Galaxy Research found patients and carers commonly turn to their peers online for support, information and inspiration. Three-quarters of Australians have researched or discussed health issues on social media or in an online community; for 77 per cent of those with a chronic illness, the most valuable content is advice on living with their condition.”

Source: <http://www.smh.com.au/national/education/australians-turn-to-online-health-communities-for-information-inspiration-20170310-guvoot.html>

Outline two positive health and wellbeing outcomes of digital technologies outlined above.

Question 5 (4 marks)

New Zealand Red Cross has teamed up with Civil Defence, GNS and MetService to help Kiwis make it safely through disasters.

The Red Cross Hazard App sends you official warnings and alerts, tailored to your current and chosen locations, and contains step-by-step guides to help your household create an emergency plan and prepare getaway kits.

Information and disaster guides are also pre-loaded in the app so you have instant access, even without cell phone reception or an internet connection!

Designed to operate in large scale emergencies when communication networks are under pressure, the app also allows you to send an 'I am safe' message to family, friends and social media following an emergency.

Hazard App was developed for New Zealand Red Cross as part of a global project by the Red Cross' Global Disaster Preparedness Centre.

Source: <http://about.metservice.com/our-company/ways-to-get-the-weather/weather-on-your-mobile/red-cross-hazard-app/>

Using examples from the article above, **explain** how the Red Cross Hazard App could promote two dimensions of health and wellbeing.

More exam questions are available in your learnON title.

10.6 KEY SKILLS

10.6.1 Analyse the implications for health and wellbeing of particular global trends



tivd-1927

KEY SKILL Analyse the implications for health and wellbeing of particular global trends

Tell me

To address this skill, it is important to have a clear understanding of all dimensions of health and wellbeing and each of the global trends explored in this topic.

The following questions offer a useful approach when analysing the impact of global trends on health and wellbeing:

- What is the global trend that is the focus of the question? For example, it could be rising sea levels or extreme weather events as part of climate change; it could be conflict or mass migration, world trade or tourism or any digital technologies. This information could be presented as a case study, graph, table or quotation.
- What does the global trend mean or what does it include?
- Will the trend have a positive impact on all dimensions of health and wellbeing, including physical, social, emotional, mental and spiritual health and wellbeing?
- Are there any potential negative influences on health and wellbeing in relation to the global trend?

Show me

These questions will be applied to **FIGURE 10.19**.

The global trend shown in the graph is the increase in the use of digital technologies. In this case, it is the increase in the number of cell phone subscriptions per 100 people in selected countries.¹

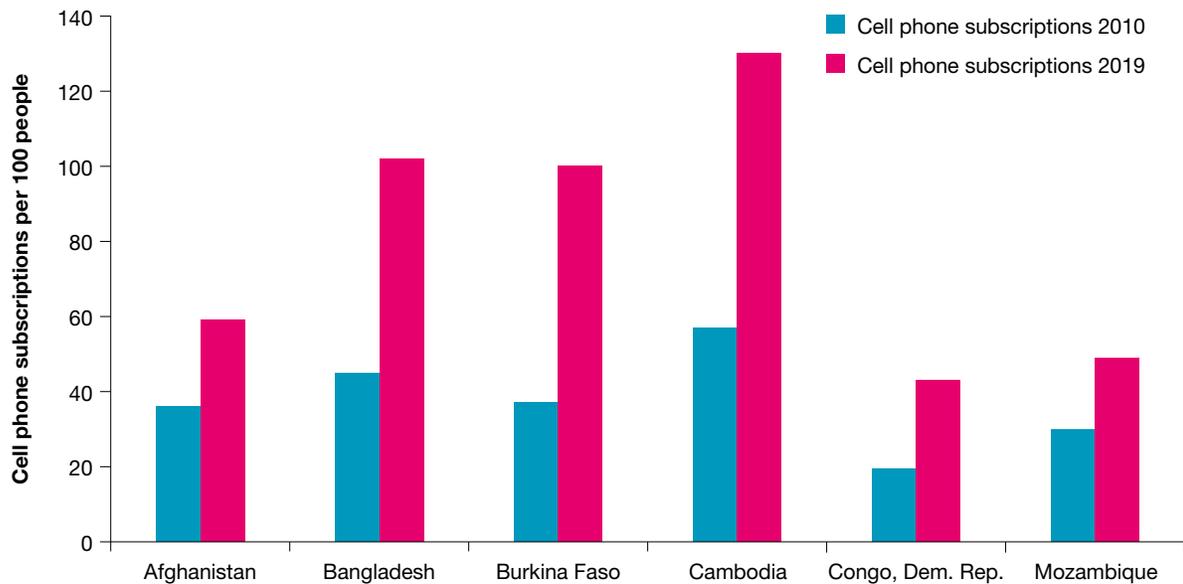
All countries shown have increased access to this form of digital technology over the last five years. This has contributed to a world that is becoming increasingly more connected. People, businesses and governments are now able to deliver and access services, obtain and share knowledge, undertake transactions, shop, work and interact with each other in ways that were not possible in the past.

Developments in mobile phone technology have been enabled through the expansion of affordable mobile phone networks. This has increased their accessibility to everyone, even those living in the most remote and poor areas of the world. Mobile phone technology has opened communication channels across the world, enabling more complex data collection and the sharing of health information.²

1 The global trend is clearly identified.

2 Digital technologies as a global trend is outlined to show an understanding of what it means.

FIGURE 10.19 Number of cell phones users per 100 people in selected low- and middle-income countries, 2010 and 2019



Source: Adapted from data from the World Bank, 2020.

Mobile phones offer a great opportunity to promote health and wellbeing. Healthcare workers can gather population data quickly, such as the number and ages of people, the number of women who are accessing healthcare during and after their pregnancy, and the number of people who are suffering from diseases and where they live. This data helps promote good health and wellbeing because it provides valuable information that allows government to implement relevant programs in the right areas to help people stay healthy.³

3 The link to health and wellbeing is outlined.

Digital technologies allow births, deaths and marriages to be registered, which is important for health and wellbeing as it contributes to people having access to legal protection, education and basic human rights. This promotes social, emotional and mental health and wellbeing. When their human rights are fulfilled, people feel much more connected to their communities, which promotes spiritual health and wellbeing.

Mobile phone technology can be used by countries to better prepare for disasters. Mobile phones can be used to transmit SMS messages to issue warnings of an emergency and provide instructions for people to minimise injuries and deaths. This helps promote physical, mental and emotional health and wellbeing.⁴

4 The positive impact of mobile phone technology is linked to specific dimensions of health and wellbeing.

Mobile phone technologies can be used to involve individuals and families more directly in their healthcare experience. They have access to more self-care and diagnostic information that can be used to monitor and improve their health and wellbeing and help them to adopt healthy behaviours. This can promote physical health and wellbeing as people can take action to prevent ill health.⁵

5 The positive impact of mobile phone technology on physical health and wellbeing is discussed.

While digital technologies can promote health and wellbeing, they also have the potential to have a negative impact. The privacy and safety of children and young people online is a concern in most countries — those in low- and middle-income countries are less protected. Many children are sharing personal information online with people they don't know and many are being exposed to indecent content or are being bullied, threatened or embarrassed online. This can have a serious impact on children's emotional and mental health and wellbeing.⁶

⁶ The potential for digital technologies to have a negative impact is outlined.

Practise the key skill

Since the Syrian war began in 2011, more than 5.6 million Syrians have fled the country as refugees, and another 6.2 million people are displaced within their own country. Half of the people affected are children.

1. Identify the global trend represented in the information above.
 2. Outline the differences between refugees and those who are displaced.
 3. Describe two implications of the Syrian war for health and wellbeing.
-

10.7 Review

10.7.1 Topic summary

10.2 The implications for health and wellbeing of climate change

- Human activity has resulted in a 20 per cent increase in the production of greenhouse gases over the last 50 years, which has brought about climate change.
- Due to the increasing temperature of the planet, we are now experiencing rising sea levels, changing weather patterns, and more intense and frequent extreme weather events.
- Sea levels had been rising at a rate of 1.8 mm per year between 1961 and 2003, but are now rising at a level of 3.5 mm each year.
- Rising sea levels are due to the expansion of the water that occurs as it warms as well as the increase in the volume of water that results from the melting of the polar ice caps and inland glaciers.
- Rising sea levels have an impact on people's health and wellbeing worldwide, but those living in coastal areas, and particularly those living in low- and middle-income countries, are at greater risk of losing their homes and their livelihoods.
- Rising sea levels affect health and wellbeing by forced relocation of people living in coastal areas, reducing access to fresh water, reducing agricultural and food supplies and changing the biodiversity of the planet
- Global warming is expected to contribute to changing weather patterns, such as more extreme heat and for longer periods, changing rainfall patterns where dry regions will become dryer and wet regions are more likely to be flooded.
- Extreme weather events include cyclones, floods, droughts, fires and storms.
- Extreme weather events will affect health and wellbeing by contributing to increased rates of infectious diseases, more heatwaves, which could contribute to deaths from cardiovascular disease and respiratory diseases, changes in the types of crops that can be grown and reduced access to fresh water.

10.3 The implications for health and wellbeing of conflict and mass migration

- Since 2001, the level of conflict worldwide has increased, acts of terrorism have become more common and more deadly.
- The number of refugees and displaced persons due to conflict is at its highest since World War II.
- Conflict brings about loss of life as well as destruction of existing farming land and infrastructure.
- People are forced from their homes and seek safety in other parts of the country or in another nearby country. This is known as mass migration.
- When people are displaced it usually results in overcrowding in the urban centres, or people are moved to crowded refugee camps with unsanitary living conditions. Infectious diseases often spread quickly and medical supplies, housing and fresh water can be in short supply.

10.4 The implications for health and wellbeing of world trade and tourism

- World trade has contributed to the reduction of global poverty since 1990 by providing job opportunities for local workers and stimulating economic growth.
- Tourism is one of the world's fastest growing industries, accounting for 10 per cent of the world's GDP.
- Tourism provides jobs and can help lift countries out of poverty and achieve gender equality, as almost twice as many women than men are employed in the tourism sector.
- Tourism has five main benefits: improved economic growth and social inclusiveness; employment; improved resource efficiency and environmental protection; preservation of cultural values, diversity and heritage; and the promotion of mutual understanding, peace and security.
- Tourism can also bring many challenges, such as environmental challenges, overcrowding and pressure on local infrastructure; it can be a threat to health and wellbeing. Increased travel can result in the transmission of diseases and illnesses.
- The COVID-19 pandemic had a significant impact on world tourism.

10.5 The implications for health and wellbeing of digital technologies

- Digital technologies have expanded considerably over the last ten years, which means people have become more connected and there is considerably more knowledge sharing.
- Expansion in the mobile phone network has contributed to an increased ability to reach more people and provide them with health information as well as more efficient data collection methods.
- Digital technologies can empower people to take control of their health and wellbeing and make changes to their lifestyle.
- Digital technologies were used in Australia during the COVID-19 pandemic to assist with contact tracing and for telehealth consultations.

Resources

 **Digital document** Summary (doc-36145)

10.7.2 Key terms

Acidification decrease in the pH levels of the ocean that occurs when carbon dioxide in the atmosphere reacts with the sea water

Aquifer an underground layer of rock, sediment or soil that contains water

Asylum seeker a person seeking international protection and whose refugee status is yet to be determined

Biodiversity the variety of different plants, animals and micro-organisms, their genes and the ecosystems of which they are a part

Desalination the process of removing salt, especially from sea water so that it can be used for drinking or irrigation

Displaced people those who are forced to leave their home because of war or persecution

Ecosystem a community of living things and the non-living components of the environment in which they live. An ecosystem can include plants, animals, micro-organisms, water, air, soil and rocks.

Glacier a slowly moving mass or river of ice formed by the accumulation and compaction of snow on mountains or near the poles

Globalisation the process whereby boundaries between countries are reduced or eliminated allowing individuals, groups and companies to act on a global scale. It can be described as transforming the different societies of the world into one global society. A reduction in barriers to trade, communication and transport contributes to this process.

Greenhouse gases gases that contribute to the greenhouse effect by absorbing heat. Carbon dioxide and chlorofluorocarbons (used in the manufacture of aerosol sprays) are examples of greenhouse gases.

Stateless a situation where a person does not have citizenship of any country. These individuals have no protection of their human, social or political rights and cannot access education or healthcare or have freedom of movement.

10.7.3 Extended response question: build your exam skills

tlvd-
2885

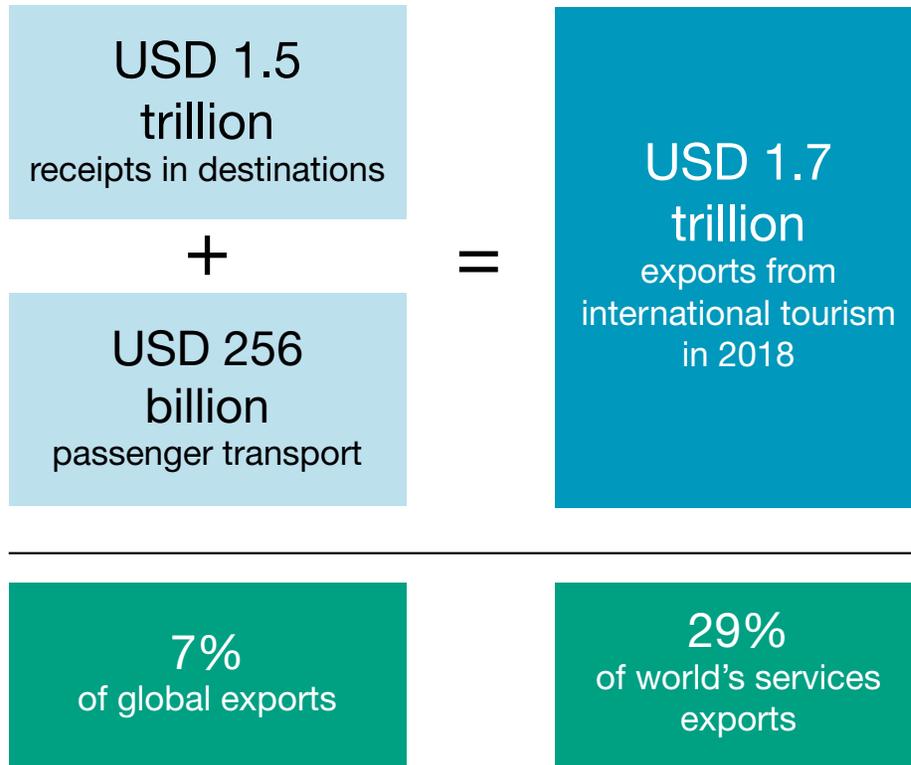
Consider the following question

Use the information from the three sources and your own knowledge of the global trends of tourism, conflict and mass migration and climate change to discuss the impact for health and wellbeing.

8 marks

Source 1

Tourism generates USD 5 billion a day in exports



Source: UNWTO International Tourism Highlights 2019 <https://www.unwto.org/publication/international-tourism-highlights-2019-edition>
<https://www.e-unwto.org/doi/epdf/10.18111/9789284421152>, pg 8 (accessed January 2021)

Source 2

TRANSFORMING TOURISM for CLIMATE CHANGE

The number of tourists travelling across borders is expected to reach 1.8 billion a year by 2030, according to the latest UNWTO predictions. This will be alongside a further 15.6 billion domestic tourist arrivals. Such growth will bring many opportunities, including socio-economic development and job creation. At the same time, however, greenhouse gas emissions linked to tourism are also rising.

According to UNWTO/ITF latest research, in 2016 transport-related emissions from tourism contributed to 5 per cent of all man-made emissions and are to increase to 5.3 per cent by 2030 against a current ambition scenario. The projected increase represents 25 per cent growth, from 1,597 million tonnes of transport-related CO₂ attributable to tourism in 2016 to 1,998 million tonnes in 2030.

In view of these findings, it is urgent for the tourism sector to transform and find a way to continue to grow whilst reducing emissions.

Source: Adapted from: <https://www.unwto.org/sustainable-development/climate-change>

Source 3

Global Trends: Forced Displacement 2019

40% CHILDREN

An estimated 30 – 34 million of the 79.5 million forcibly displaced persons were children below 18 years of age.

85% HOSTED IN DEVELOPING COUNTRIES

Developing countries hosted 85 per cent of the world's refugees and Venezuelans displaced abroad. The Least Developed Countries provided asylum to 27 per cent of the total.

2.0 MILLION NEW CLAIMS

Asylum-seekers submitted 2.0 million new claims. The United States of America was the world's largest recipient of new individual applications (301 000), followed by Peru (259 800), Germany (142 500), France (123 900) and Spain (118 300).

73% HOSTED IN NEIGHBOURING COUNTRIES

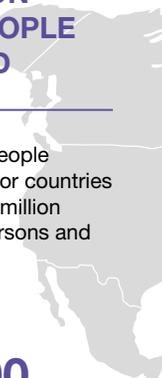
73 per cent of refugees and Venezuelans displaced abroad lived in countries neighbouring their countries of origin.

5.6 MILLION DISPLACED PEOPLE RETURNED

5.6 million displaced people returned to their areas or countries of origin, including 5.3 million internally displaced persons and 317 200 refugees.

107 800 REFUGEES RESETTLED

UNHCR submitted 81 600 refugees to States for resettlement. According to government statistics, 26 countries admitted 107 800 refugees for resettlement during the year, with or without UNHCR's assistance.



Source: UNHCR Global Trends Forced Displacement 2019 pg 2

TIP

Remember to break down the question to determine what you need to do and use highlighters to link relevant aspects of the source material to each component of the question.

10.7 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

10.7 Exam questions

10.7 Exam questions

Question 1 (7 marks)

Source: VCE 2020, *Health and Human Development Exam*, Q. 12 (adapted); © VCAA

Over a million Rohingya refugees have fled violence in Myanmar in successive waves of displacement since the early 1990s ...

The Rohingya are a stateless Muslim minority in Myanmar. The latest exodus began on 25 August 2017, when violence broke out in Myanmar's Rakhine State, driving more than 742 000 to seek refuge in Bangladesh. Most arrived in the first three months of the crisis ... The vast majority reaching Bangladesh are women and children, and more than 40 per cent are under age 12. Many others are elderly people requiring additional aid and protection. They have nothing and need everything.

Source: UNHCR, The UN Refugee Agency, 'Rohingya emergency', www.unhcr.org/en-au/rohingya-emergency.html

- a. According to the Ottawa Charter for Health Promotion, peace and shelter are prerequisites for health. **Explain** why each of these prerequisites must be available for the Rohingya people to improve or maintain their health and wellbeing. **4 marks**
- b. **Explain** the implications of mass migration, some of which are evident in the information in the source above, for health and wellbeing. **3 marks**

Question 2 (9 marks)

Tanzania: Eco-friendly sustainable camp

Isoitok Camp Manyara in Tanzania-Africa was created and designed with the idea to allow foreign travelers to experience the true life and daily existence of the Maasai whilst taking in jaw dropping views across The Great Rift Valley to Lake Manyara National Park. The experience of staying at Isoitok Camp is an education both in cultural tourism and how to run a business using the environment around you. The traveler gets to understand how the Maasai neighbors generally live and what they must endure over the changing seasons. The initiative does not end there as once again the traveler sees first hand and is educated through familiarization briefings as to what is meant by an 'eco' friendly 'sustainable' camp.

Source: Adapted from: United Nations World Tourism Organisation: *Tourism in Africa: A Tool for Development*, p. 73, http://cf.cdn.unwto.org/sites/all/files/pdf/tourism_africa_tool_development1.compressed_0_0.pdf

- a. **Explain** one of the global trends that is evident in this example. **2 marks**
- b. **Provide** three advantages of this project to Tanzania. **3 marks**
- c. **Discuss** how this global trend could promote health and wellbeing. **4 marks**

Question 3 (8 marks)

The diagram in **FIGURE 10.20** represents a range of consequences associated with climate change.



Source: <https://public.wmo.int/en/media/press-release/state-of-climate-2017-%E2%80%93-93-extreme-weather-and-high-impacts>

- a. **Describe** two factors that have contributed to the consequences shown in the diagram. **4 marks**
- b. Select two examples of the consequences of climate change represented in the diagram and **analyse** the impact on health and wellbeing. **4 marks**

Question 4 (8 marks)

Increased access to digital technologies, particularly in low- and middle-income countries, has increased the number of adults with access to financial services such as banking. Access to financial services means people can take out loans, which can be used to start or expand their business.

- a. **Explain** how access to financial services could promote health and wellbeing. **2 marks**
- b. **List** two other examples of how digital technologies can be used to promote health and wellbeing. **2 marks**
- c. For each of the examples identified in part **b**, **describe** two ways they can promote health and wellbeing. **4 marks**

Question 5 (3 marks)

The United Nations Security Council's peacekeeping division helps countries resolve conflict peacefully through negotiation and mediation.

Outline three ways in which resolving conflict will improve the overall health and wellbeing of people in countries torn apart by war.

on Resources

- Digital document** Key terms glossary (doc-36132)
- Exam question booklet** Topic 10 Exam question booklet (eqb-0064)
- Interactivities** Crossword (int-6897)
Definitions (int-6898)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 10 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 10.1 Key terms glossary (doc-36132)
- 10.2 Climate change worksheet (doc-32225)
- 10.7 Summary (doc-36145)
Key terms glossary (doc-36132)

Exam question booklets

- 10.1 Topic 10 Exam question booklet (eqb-0064)
- 10.7 Topic 10 Exam question booklet (eqb-0064)

Teacher-led videos

- 10.6 Key skill: Analyse the implications for health and wellbeing of particular global trends (tlvd-1927)
- 10.7 Extended response: build your exam skills (tlvd-2885)

Weblinks

- 10.2 Climate change – the mental impact
Climate change – sea levels rising

Interactivities

- 10.3 The number of people affected by forced displacements continues to increase largely as a result of the war in Syria, Venezuela, Afghanistan, Myanmar, Somalia, South Sudan, Democratic Republic of Congo, Nigeria, the Central African Republic, Sudan and Eritrea (int-8280)
- 10.7 Crossword (int-6897)
Definitions (int-6898)

To access these online resources, log on to www.jacplus.com.au.

School-Assessed Coursework Unit 4

AREA OF STUDY 1: HEALTH AND WELLBEING IN A GLOBAL CONTEXT

Outcome 1

Analyse similarities and differences in health status and burden of disease globally and the factors that contribute to differences in health and wellbeing.

School-Assessed Coursework 3 online only

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au, or download the assessment as a Word document from your Resources tab.

Resources

 **Digital document** School-Assessed Coursework (doc-34825)

Key knowledge

- Characteristics of high-, middle- and low-income countries
- Similarities and differences in health status and burden of disease in low-, middle- and high-income countries, including Australia
- Factors that contribute to similarities and differences in health status and burden of disease, including access to safe water, sanitation, poverty, inequality and discrimination (race, religion, sex, sexual orientation and gender identity), and global distribution and marketing of tobacco, alcohol and processed foods
- The concept and dimensions of sustainability (environmental, social, economic) and its role in the promotion of health and wellbeing
- The concept of human development, including advantages and limitations of the Human Development Index
- Implications for health and wellbeing of global trends including:
 - climate change (rising sea levels, changing weather patterns and more extreme weather events)
 - conflict and mass migration
 - increased world trade and tourism
 - digital technologies that enable increased knowledge sharing

Key skills

- Describe characteristics of high-, middle- and low-income countries
- Evaluate data to analyse similarities and differences between countries in relation to health status and burden of disease
- Analyse factors that contribute to health status and burden of disease in different countries and discuss their impact on health and wellbeing
- Compare health data and other information to analyse reasons for health inequalities within and between nations
- Explain sustainability (environmental, social, economic) and its importance in the promotion of health and wellbeing in a global context
- Explain the Human Development Index and evaluate its usefulness in measuring human development of countries
- Analyse the implications for health and wellbeing of particular global trends

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School-Assessed Coursework Unit 4

AREA OF STUDY 1: HEALTH AND WELLBEING IN A GLOBAL CONTEXT

Outcome 1

Analyse similarities and differences in health status and burden of disease globally and the factors that contribute to differences in health and wellbeing.

Structured questions

Total marks: 50 marks

Time duration: 60 minutes

Key knowledge

- Characteristics of high-, middle- and low-income countries
- Similarities and differences in health status and burden of disease in low-, middle- and high-income countries, including Australia
- Factors that contribute to similarities and differences in health status and burden of disease, including access to safe water, sanitation, poverty, inequality and discrimination (race, religion, sex, sexual orientation and gender identity), and global distribution and marketing of tobacco, alcohol and processed foods
- The concept and dimensions of sustainability (environmental, social, economic) and its role in the promotion of health and wellbeing
- The concept of human development, including advantages and limitations of the Human Development Index
- Implications for health and wellbeing of global trends including:
 - climate change (rising sea levels, changing weather patterns and more extreme weather events)
 - conflict and mass migration
 - increased world trade and tourism
 - digital technologies that enable increased knowledge sharing

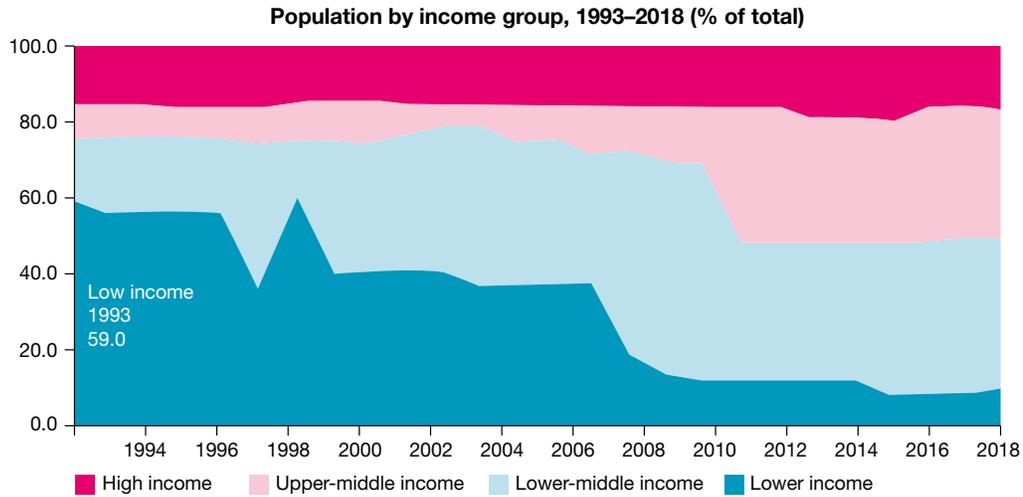
Key skills

- Describe characteristics of high-, middle- and low-income countries
- Evaluate data to analyse similarities and differences between countries in relation to health status and burden of disease
- Analyse factors that contribute to health status and burden of disease in different countries and discuss their impact on health and wellbeing
- Compare health data and other information to analyse reasons for health inequalities within and between nations
- Explain sustainability (environmental, social, economic) and its importance in the promotion of health and wellbeing in a global context
- Explain the Human Development Index and evaluate its usefulness in measuring human development of countries
- Analyse the implications for health and wellbeing of particular global trends

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Question 1 (9 marks)

SOURCE 1 World population by income classification over the years

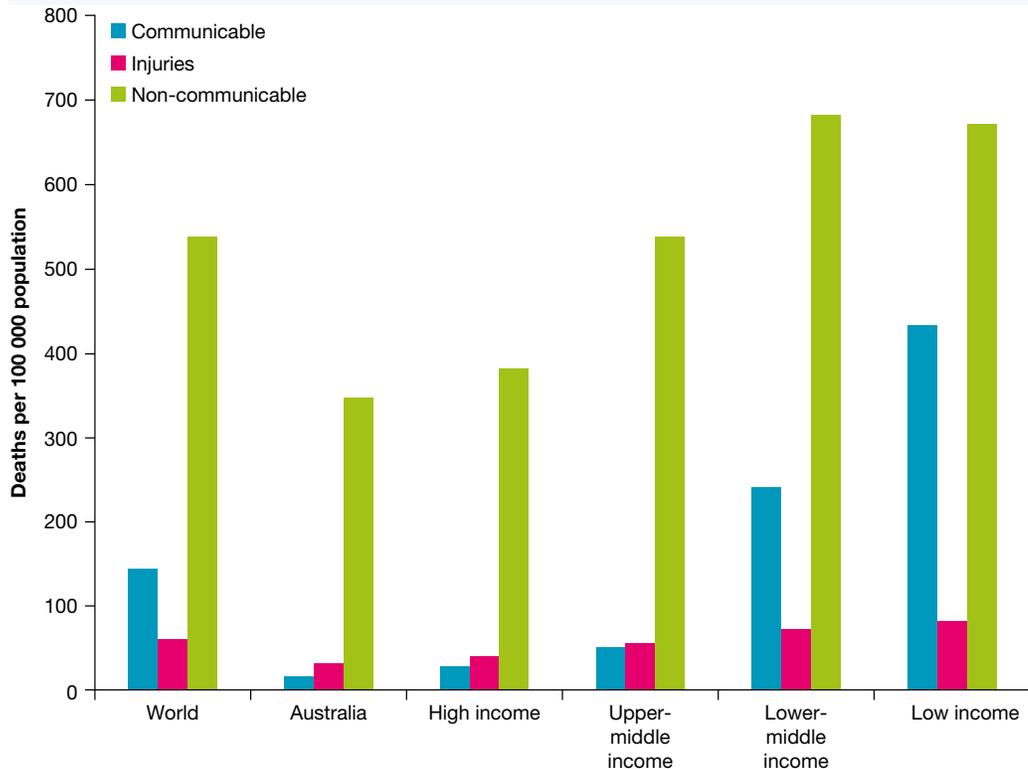


Source: <http://datatopics.worldbank.org/world-development-indicators/stories/the-classification-of-countries-by-income.html>

- Using data, explain the shift in income groups across the world population between 1994 and 2018. **3 marks**
- Outline three characteristics of a low-income countries. **3 marks**
- Explain what is meant by 'poverty' and two ways it can be measured. **3 marks**

Question 2 (10 marks)

SOURCE 2 Mortality rates for selected conditions — globally, in Australia and the World Bank income groups, 2015



Source: Adapted from: <http://vizhub.healthdata.org/gbd-compare>

- a. What is meant by ‘the double burden of disease’? Refer to data in **SOURCE 2** to support your answer, comparing the disease burden in Australia to another income group. **4 marks**
- b. Excluding poverty, outline two factors or characteristics and explain how they may have contributed to the different levels of communicable disease experienced in Australia and low- or middle-income countries. **4 marks**
- c. Using examples, explain what is meant by ‘basic human rights’. **2 marks**

Question 3 (6 marks)

SOURCE 3

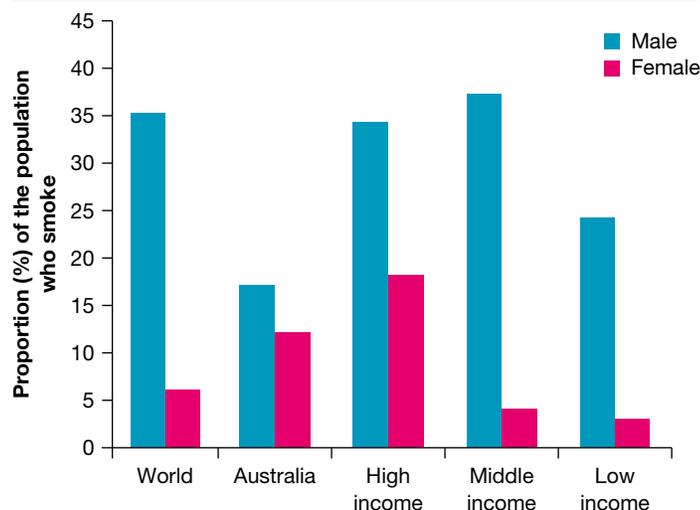
Tobacco is the only legal drug that kills many of its users when used exactly as intended by manufacturers. WHO has estimated that tobacco use (smoking and smokeless) is currently responsible for the death of about six million people across the world each year with many of these deaths occurring prematurely. This total includes about 600,000 people are also estimated to die from the effects of second-hand smoke. Although often associated with ill-health, disability and death from noncommunicable chronic diseases, tobacco smoking is also associated with an increased risk of death from communicable diseases.

Source: <https://www.who.int/tobacco/publications/surveillance/reportontrendstobaccosmoking/en/>

SOURCE 4 Global and regional per capita food consumption (kJ per capita per day), actual and estimated

Region	1964–66	1974–76	1984–86	1997–99	2015	2030
World	9865	10 188	11 109	11 728	12 301	12 761
Low- and middle-income countries	8594	9004	10 251	11 217	11 924	12 468
High-income countries	12 330	12 824	13 414	14 142	14 403	14 644

SOURCE 5 Prevalence of tobacco use for those aged 15 and over



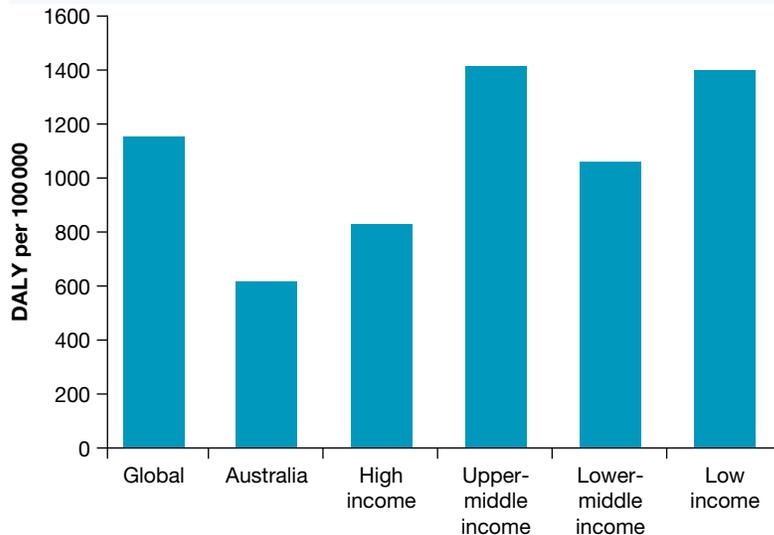
Source: WHO report on the global tobacco epidemic, 2017: *monitoring tobacco use and prevention policies*. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

SOURCE 6



Source: https://www.who.int/substance_abuse/infographic_alcohol_2018.pdf

SOURCE 7 DALY per 100 000 due to alcohol consumption



Source: <http://ihmeuw.org/440o>

Selecting evidence from the sources presented and using your understanding of the impact of the global distribution of tobacco, alcohol and processed foods answer the following question.

To what extent do you feel the impact of the global distribution of tobacco, alcohol and processed food is responsible for the impact of the non-communicable disease burden worldwide?

Question 4 (6 marks)

Sustainability refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs.

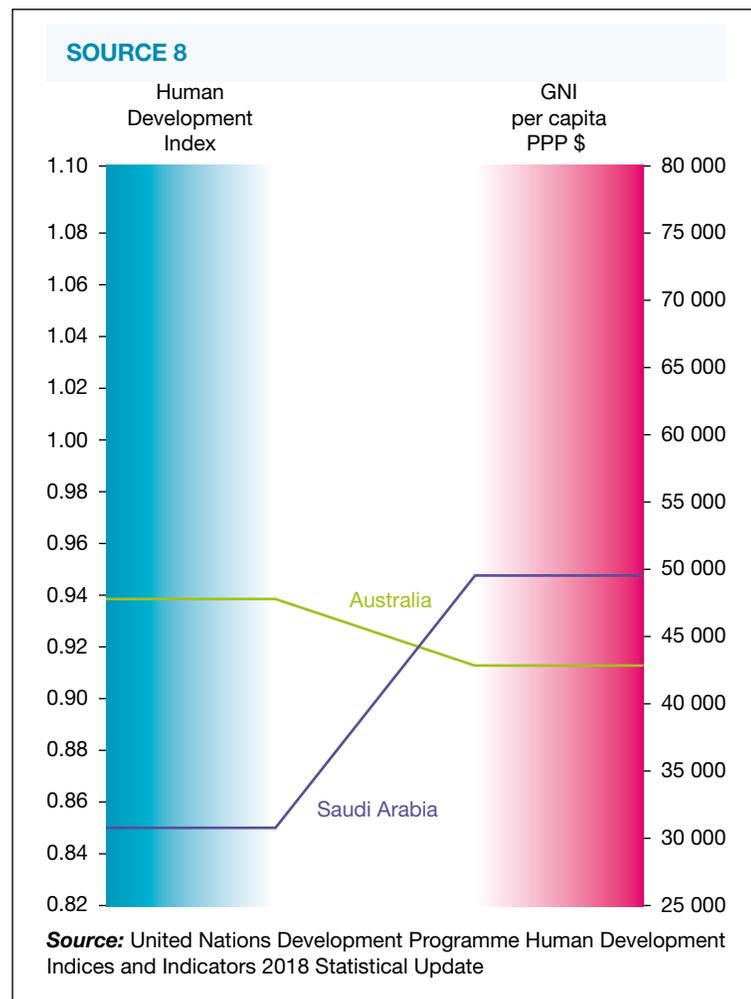
Source: United Nations (1987), Report of the World Commission on Environment and Development: Our Common Future, retrieved from <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>

Using examples, explain the difference between the three types of sustainability.

Question 5 (11 marks)

The Human Development Index, or HDI, was developed by the United Nations to measure the levels of Human Development within countries.

- a. What is meant by the term 'human development'? 3 marks
- b. Using **SOURCE 8**, explain how HDI is calculated, and why Australia has a higher HDI than Saudi Arabia. 6 marks
- c. Outline two limitations of the HDI as a tool to measure human development. 2 marks



Question 6 (8 marks)

- a. Using examples, explain what is meant by 'an extreme weather event'. **2 marks**
- b. Outline two ways in which extreme weather events can impact on the health and wellbeing of people who experience them. **2 marks**
- c. Using your knowledge of the characteristics of low- and high-income countries, explain why more people die as a result of natural disasters in low-income countries compared to high-income countries. **4 marks**

END OF TASK

11 Sustainable Development Goals and the World Health Organization

LEARNING SEQUENCE

11.1 Overview.....	581
11.2 Objectives and rationale for the Sustainable Development Goals and key features of SDG 3.....	582
11.3 Key features of Sustainable Development Goal 3: Good health and wellbeing.....	586
11.4 SDG 3 Key feature of maternal and child health and wellbeing	590
11.5 SDG 3 Key feature of communicable diseases	596
11.6 SDG 3 Key feature of non-communicable diseases.....	610
11.7 The relationships between SDG 3 and SDG 1.....	621
11.8 The relationships between SDG 3 and SDG 2.....	627
11.9 The relationships between SDG 3 and SDG 4.....	633
11.10 The relationships between SDG 3 and SDG 5.....	638
11.11 The relationships between SDG 3 and SDG 6.....	643
11.12 The relationships between SDG 3 and SDG 13.....	648
11.13 The UN's Sustainable Development Goals and the World Health Organization	654
11.14 KEY SKILLS.....	667
11.15 Review	672



11.1 Overview

Key knowledge	Key skills
Rationale and objectives of the United Nations (UN's) Sustainable Development Goals (SDGs)	Describe the objectives of the UN's SDGs and justify their importance
Key features of SDG 3: 'Ensure healthy lives and promote wellbeing for all at all ages' Relationships between SDG 3 and SDGs 1, 2, 4, 5, 6 and 13 that illustrate collaboration between the health sector and other sectors in working towards health-related goals	Describe key features of SDG 3 and analyse its relationships with other SDGs in collaborative approaches to improving health and wellbeing, and human development globally
Priorities and work of the World Health Organization (WHO)	Explain the priorities and the work of the WHO and discuss how the WHO priorities are reflected in different scenarios

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Antenatal care	Maternal mortality
Ecosystem	Microfinance
Extreme poverty	Poverty
Food security	Stakeholders
Interdependent	Sustainable development

Exam terminology

Describe Provide a general description

Justify Give reasons and/or evidence to support a point of view

Analyse Examine the components of; Look for links, patterns, relationships and anomalies

Explain Make plain, make clear (may require reasons)

Discuss Give an overall account of

Resources

-  **Digital document** Key terms glossary (doc-36133)
-  **Exam question booklet** Topic 11 Exam question booklet (eqb-0065)

11.2 Objectives and rationale for the Sustainable Development Goals and key features of SDG 3

KEY CONCEPT Understanding the SDGs, including their rationale and objectives

11.2.1 What are the Sustainable Development Goals (SDGs)?

The 17 Sustainable Development Goals (SDGs), also referred to as the global goals, include 169 targets to be achieved by 2030. The goals were developed through a collaborative process by all United Nations member states, non-government organisations, and people around the world with an interest in making the world a better place. The goals include ambitious targets and plans about how each of them can be achieved. They tackle global challenges and aim to meet the needs of all people in all countries. They direct action in five areas of importance, which are shown in **FIGURE 11.1** and are explained below.

FIGURE 11.1 The SDGs direct action in five areas of importance for humanity and the planet.



- *People* — End **poverty** and hunger, in all their forms and dimensions, and ensure that all human beings can fulfil their potential with dignity and equality and in a healthy environment.
- *Planet* — Protect the planet from **degradation** through sustainable consumption and production, management of natural resources and acting on climate change to support the needs of present and future generations.
- *Prosperity* — Ensure all people can enjoy successful and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.
- *Peace* — Foster peaceful, just and inclusive societies that are free from fear and violence. There can be no **sustainable development** without peace and no peace without sustainable development.
- *Partnership* — Implement the SDGs with a global partnership for sustainable development, focused on the needs of the poorest and most vulnerable, with the participation of all countries, **stakeholders** and people.

11.2.2 Rationale for the SDGs

There were three main reasons, or rationale, for the introduction of the Sustainable Development Goals:

1. A new set of goals and targets were needed when the **Millennium Development Goals** (MDGs) finished in 2015. The MDGs provided a global framework of action to address poverty and make global progress on education, health and wellbeing, **hunger** and the environment. They resulted in significant improvements in global health and wellbeing and human development. More than 1 billion people were lifted out of **extreme poverty**, progress had been made against hunger, more girls were attending school and some action had been taken to protect the planet.
2. Progress in all areas was uneven across regions and countries, leaving millions of people behind, especially the poorest and those disadvantaged due to sex, age, disability, ethnicity or geographical location. This showed there was still a lot of work to be done.
3. New global challenges had emerged that needed to be considered. These included the impact of increasing conflict and **extremism**, widespread migration, economic and financial instability and large-scale environmental changes. These challenges had the capacity to undermine many of the achievements that had been made through the MDGs.

11.2.3 Objectives of the SDGs

The 17 global goals work together to achieve three major objectives:

- end extreme poverty
- fight inequality and injustice
- address climate change.

To achieve these objectives, the SDGs aim to end poverty and hunger; promote health and wellbeing; address inequalities within and among countries; build peaceful, just and inclusive societies; protect human rights; and promote gender equity and the empowerment of women and girls, all underpinned by the promotion of a sustainable world. A sustainable world means people can escape poverty and enjoy decent work

Poverty not having the resources to meet basic needs such as food, clothing and shelter

Degradation the deterioration of the environment through the depletion of resources, such as clean air, water and soil, the destruction of ecosystems, and the extinction of wildlife

Sustainable development development that meets the needs of the present without compromising the ability of future generations to meet their own needs

Stakeholders people, groups and organisations who are involved in or affected by a course of action

Millennium Development Goals a set of goals that were introduced in 2000 to guide global action until 2015

Hunger the continuing lack of food needed for an active and healthy life

Extreme poverty living on less than US\$1.90 per day

Extremism belief in and support for ideas that are very far from what most people consider correct or reasonable

FIGURE 11.2 The UN's 17 Sustainable Development Goals



Source: United Nations, 2015.

without harming the Earth’s essential **ecosystems** and resources; where people can stay healthy and get the food and water they need; where everyone has access to clean energy that doesn’t contribute to climate change; and where women and girls are afforded equal rights and equal opportunities. The three dimensions of sustainability underpinning the goals are social, economic and environmental.

Ecosystem a community of living things and the non-living components of the environment in which they live. An ecosystem can include plants, animals, micro-organisms, water, air, soil and rocks.

Interdependent mutually reliant on each other

Indivisible unable to be divided or separated

11.2.4 The Sustainable Development Goals are interconnected

One goal is no more important than any other — they complement and interconnect with each other. They are designed as a set of goals and targets that are integrated, **interdependent** and **indivisible**. Their achievement requires collaboration across all sectors and at international, national, regional and local levels.

11.2.5 SDG 3: Good health and wellbeing

Good health and wellbeing contributes to the achievement of many of the SDGs. In turn, the achievement of other SDGs helps achieve good health and wellbeing. It is for this reason that SDG 3: Good health and wellbeing is the focus of this topic, along with its relationship with other selected SDGs, which are:

- SDG 1: No poverty
- SDG 2: Zero hunger
- SDG 4: Quality education
- SDG 5: Gender equality
- SDG 6: Clean water and sanitation
- SDG 13: Climate action.

This topic will investigate each of the key features of SDG 3 and then explore the relationship between SDG 3 and the other selected SDGs as represented in **FIGURE 11.3**.

FIGURE 11.3 This topic explores the interrelationships between SDG 3 and other health-related SDGs.



on Resources

 **Teacher-led video** Features of each SDG (tlvd-0256)

11.2 Activity

Access the **SDG** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

 **Digital document** SDG worksheet (doc-32226)

 **Weblink** SDG

11.2 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

11.2 Quick quiz

on

11.2 Exercise

11.2 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 7

■ LEVEL 3

6, 8

Test your knowledge

1. When were the Sustainable Development Goals (SDGs) introduced and by whom?
2. What was the rationale (the reasons) for the introduction of the SDGs?
3. What are the objectives of the SDGs?
4. What are the five areas of importance?
5. What are the dimensions of sustainability that underpin the SDGs?
6. Why are the goals described as being interconnected?

Apply your knowledge

7. Why is collaboration needed across all sectors to achieve the goals and targets?
8. 'There can be no sustainable development without peace and no peace without sustainable development.' Explain this statement.

11.2 Quick quiz

on

11.2 Exercise

11.2 Exam questions

Question 1 (2 marks)

Why are the Sustainable Development Goals (SDGs) considered ambitious?

Question 2 (3 marks)

Identify the three main objectives that all countries are working towards through the achievement of the Sustainable Development Goals (SDGs).

Question 3 (1 mark)

Which organisation was responsible for the development of the Sustainable Development Goals (SDGs)?

Question 4 (1 mark)

Identify by when the Sustainable Development Goals aim to be achieved.

More exam questions are available in your learnON title.

11.3 Key features of Sustainable Development Goal 3: Good health and wellbeing

KEY CONCEPT Understanding the key features of SDG 3: Good health and wellbeing



GOOD HEALTH AND WELLBEING: ENSURE HEALTHY LIVES AND PROMOTE WELLBEING FOR ALL AT ALL AGES

Goal 3 aims to promote physical and mental health and wellbeing, and extend life expectancy by addressing the major causes of morbidity and mortality in high, middle- and low-income countries. The goal includes a number of features each with individual targets. These are:

- reduce **maternal mortality** to fewer than 70 per 100 000 live births
- end preventable deaths of newborns and children under five, reducing neonatal mortality to 12 per 1000 live births and under-5 mortality to 25 per 1000 live births
- end the epidemics of AIDS, tuberculosis, malaria and neglected **tropical diseases** (NTD), and combat hepatitis, water-borne diseases and other communicable diseases
- reduce by one-third premature mortality from non-communicable diseases through prevention and treatment, and promote mental health and wellbeing
- strengthen the prevention and treatment of substance abuse, including drugs and alcohol
- halve global deaths and injuries from road traffic accidents
- ensure universal access to sexual and reproductive healthcare services
- achieve universal health coverage, including access to affordable **essential medicines** and vaccines
- reduce deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- strengthen the implementation of the WHO Framework Convention on Tobacco Control in all countries, as appropriate
- support the research and development of vaccines and medicines for communicable and non-communicable diseases and provide access to affordable essential medicines and vaccines
- increase investment in healthcare services and qualified healthcare staff, especially in low-income countries and small island developing states
- strengthen the capacity of all countries for early warning, risk reduction and management of health and wellbeing risks.

SDG 3 aims to achieve good health and wellbeing for everyone, at every stage of life. Its key features include targets for improvements or outcomes for a range of global health and wellbeing issues as well as actions or means of implementation targets that must be met if Goal 3 is to be achieved.

The features of Goal 3 that represent outcomes for health and wellbeing are to:

- reduce maternal mortality
- end preventable deaths of newborns and children under five
- end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases (NTD), and combat hepatitis, water-borne diseases and other communicable diseases
- reduce non-communicable diseases
- promote mental health and wellbeing
- reduce substance abuse, including drugs and alcohol
- reduce road traffic accidents
- reduce deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

Maternal mortality death of a mother during pregnancy, childbirth or within six weeks of delivery

Tropical diseases a group of diseases that mainly occur in tropical and subtropical environments and are most common in countries where people lack access to safe water and sanitation

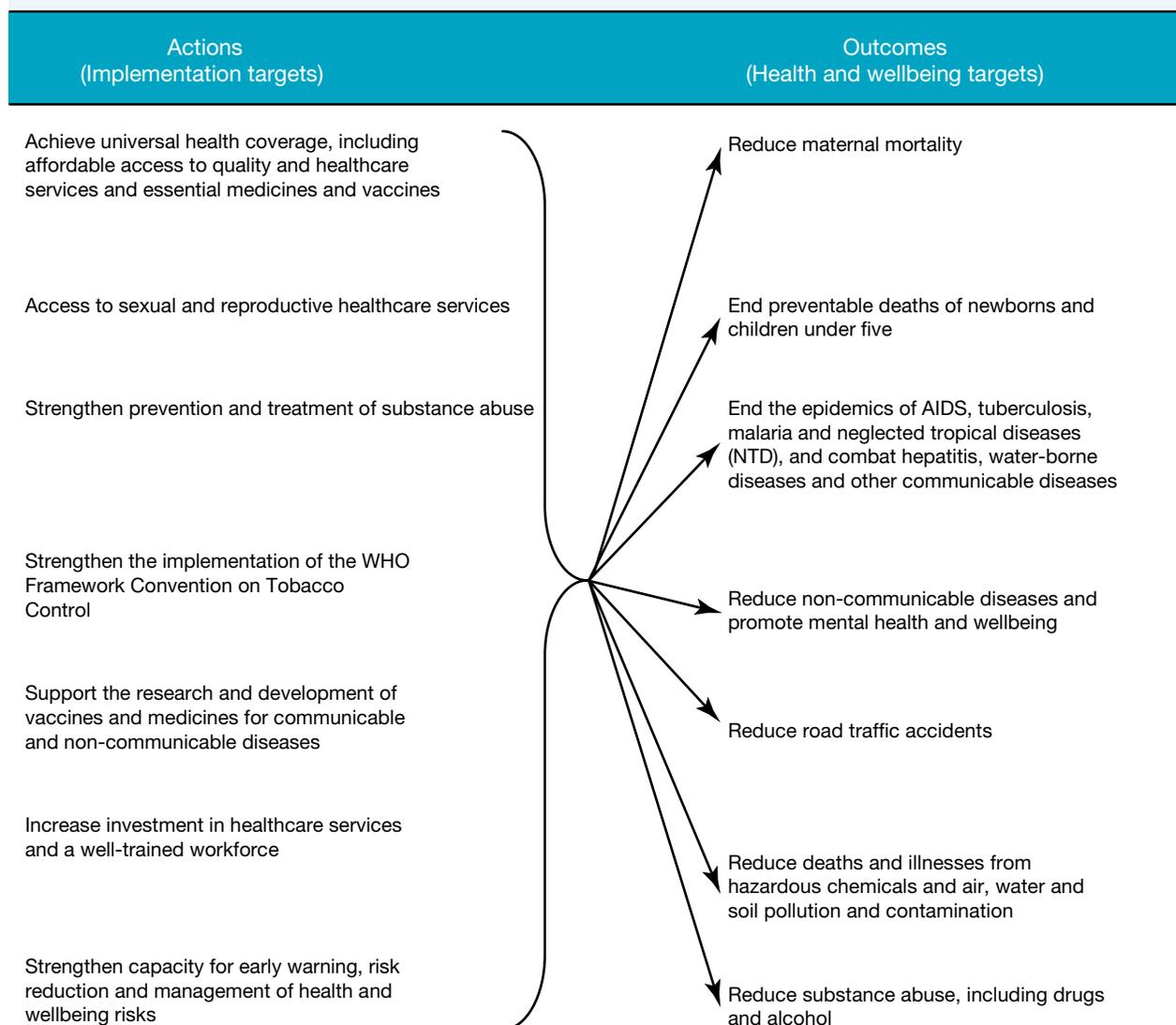
Essential medicines a range of medicines that meet the priority healthcare needs of the population

The features of SDG 3 that represent the ‘means of implementation’ or actions are:

- achieving universal health coverage. This is a prerequisite for achieving SDG 3 and includes expanding health and wellbeing services so all people have access to the health and wellbeing services they need at a cost that does not cause them to suffer financial hardship
- ensuring an adequate and well-trained health workforce is in place in every country
- having access to essential medicines and vaccines
- having access to sexual and reproductive healthcare services
- strengthening the implementation of the WHO Framework Convention on Tobacco Control in all countries
- supporting the research and development of vaccines and medicines for communicable and non-communicable diseases
- increase investment in healthcare services and qualified healthcare staff, especially in low-income countries and small island developing states
- strengthen the capacity of all countries for early warning, risk reduction and management of health and wellbeing risks.

The key features of SDG 3 are represented in **FIGURE 11.4**, which shows how the actions or implementation targets will contribute to improved health and wellbeing outcome targets.

FIGURE 11.4 The key features of SDG 3



11.3 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

11.3 Quick quiz on	11.3 Exercise	11.3 Exam questions
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Select your pathway

■ LEVEL 1 1, 3	■ LEVEL 2 2, 4	■ LEVEL 3 5, 6
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Test your knowledge

1. State the name of SDG 3 and its aim.
2. What is the difference between the features of SDG 3 that represent health and wellbeing outcomes and the features that represent ‘means of implementation’ or action features?
3. Describe universal health coverage.

Apply your knowledge

4. Why is universal health coverage considered to be a prerequisite for achieving Goal 3?
5. Why is it important to strengthen the capacity of all countries for early warning, risk reduction and management of health and wellbeing risks?
6. The features of SDG 3 can be grouped under a range of categories. Refer to **FIGURE 11.4** and complete the following table that represents one way the features can be grouped.

Health and wellbeing outcomes	
Population groups	1. Reduce maternal mortality 2. _____
Disease groupings	1. End the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases (NTD), and combat hepatitis, water-borne diseases and other communicable diseases 2. _____ 3. Reduce non-communicable diseases and promote mental health and wellbeing
Causes of burdens of disease	1. _____ 2. Reduce road traffic accidents
Actions or ‘means of implementation’	
Universal health coverage	1. Achieve universal health coverage, including affordable access to quality healthcare services and essential medicines and vaccines 2. _____ 3. Increase investment in healthcare services and a well-trained workforce
Substance control	1. _____ 2. Strengthen the implementation of the WHO Framework Convention on Tobacco Control
Medicines and research	1. _____
Early warning and protection	1. _____

Question 1 (1 mark)

Source: VCE 2017, Health and Human Development Exam, Q.10.a.i (adapted); © VCAA



Source: © World Health Organization 2015

Name the feature of the SDG represented in the information above.

Question 2 (2 marks)

Using an example, **explain** why SDG 3 — Ensure healthy lives and promote wellbeing for all ages is important in promoting health and wellbeing globally.

Question 3 (3 marks)

Outline three action areas of SDG 3 — Good health and wellbeing.

Question 4 (2 marks)

Explain the difference between the actions and the outcomes of SDG 3.

Question 5 (4 marks)

Identify two health and wellbeing features of SDG 3 that are more likely to be an issue in low-income countries than middle- or high-income countries and **explain** why.

More exam questions are available in your learnON title.

11.4 SDG 3 Key feature of maternal and child health and wellbeing

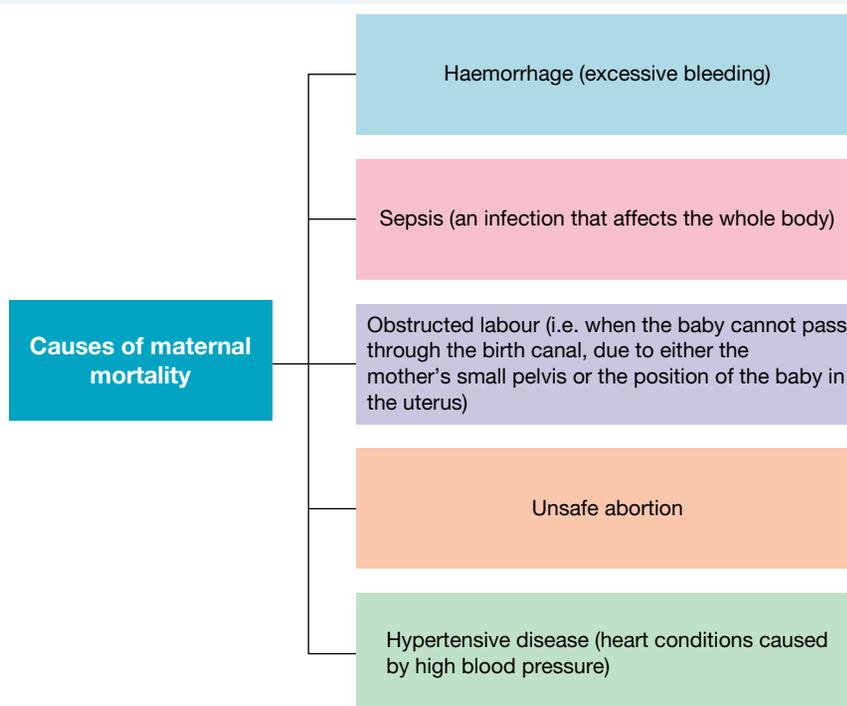
KEY CONCEPT Understanding the key features of SDG 3: maternal and child health and wellbeing

11.4.1 Reduce maternal mortality

Maternal mortality refers to the number of mothers who die due to complications related to pregnancy and childbirth. Most maternal deaths occur in low- and middle-income countries as a result of five main causes (see **FIGURE 11.5**).

Maternal mortality ratio the number of mothers who die as a result of pregnancy, childbirth or associated treatment per 100 000 women who give birth

FIGURE 11.5 Causes of maternal mortality

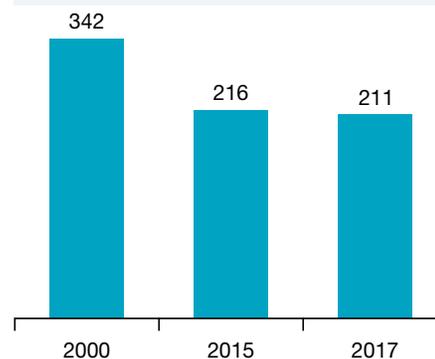


Malnutrition can also increase the risk of maternal mortality, particularly in low- and middle-income countries. Iron-deficiency anaemia contributes to 20 per cent of all maternal deaths.

Improvements in maternal mortality

The number of mothers who survive childbirth has improved significantly since 2000. The **maternal mortality ratio** was reduced by 38 per cent worldwide between 2000 and 2017, or from 342 maternal deaths per 100 000 live births to 211 per 100 000 (see **FIGURE 11.6**).

FIGURE 11.6 Global maternal mortality ratio (deaths per 100 000 live births)



Source: Adapted from data from Report of the Secretary-General, 'Progress towards the Sustainable Development Goals', United Nations, 2020.

Reasons for improvements in maternal mortality rates

There are several reasons for the improvement in maternal mortality rates, including:

- more women having access to sexual and reproductive health and wellbeing services, including **antenatal care**. Antenatal care ensures qualified health workers can monitor the mother's and baby's health and wellbeing and reduce the risk of complications.
- more births being assisted by skilled health personnel. During childbirth, skilled birth attendants can assist with obstructed labour and provide medical assistance if a **caesarean section** is required or if haemorrhaging occurs. Giving birth in a medical clinic greatly reduces the risk of infection during childbirth.
- fewer **adolescent** girls are now having children. In 2020, the adolescent birth rate was 41 births per 1000 women aged 15–19. Pregnancy during adolescence increases the risk of maternal mortality, as girls are often still developing and their bodies are less able to cope with pregnancy and childbirth. **Stillbirths** and newborn deaths are 50 per cent higher among infants born to adolescent mothers compared to infants born to mothers aged 20–29.
- greater access to family planning services. In 2020, 76.8 per cent of women aged 15–49 had access to **modern contraceptive methods** or family planning services. This enables families to plan the number of children they have and the spacing of births. By allowing two years between births, mothers and infants are more likely to survive pregnancy and childbirth and remain healthy.

SDG 3 aims to reduce maternal mortality rates from 211 per 100 000 to fewer than 70 per 100 000 live births by 2030. However, every day hundreds of women are still dying during pregnancy or from childbirth-related complications. Most of these deaths occur in low-income countries, particularly in sub-Saharan Africa and southern Asia where approximately 800 women die each day and the maternal mortality ratio is approximately 14 times higher than in higher-income countries.

Antenatal care healthcare provided to women during pregnancy and just after birth
Caesarean section a surgical procedure in which a baby is born through a cut made in the mother's abdominal wall and the wall of the uterus rather than through the normal birthing process

Adolescent/ce a stage of the lifespan that commences at puberty and ends when a person turns 20 years of age. It is a biological marker that signals the transition to adulthood and is included as part of youth.

Stillbirth the birth of an infant that has died in the womb

Modern contraceptive methods technological advances designed to overcome biology and enable couples to have sexual intercourse at any mutually-desired time

FIGURE 11.7 A Society for Family Health (SFH) family planning volunteer prepares to speak to women in Kano, Nigeria, about child spacing.



Reducing maternal mortality rates

Most maternal deaths can be prevented by providing access to sexual and reproductive healthcare services, in particular antenatal care during pregnancy, skilled birth attendants during childbirth, as well as care and support for mothers in the weeks after childbirth (see **FIGURE 11.9**). Globally, 81 per cent of births were attended by skilled birth attendants between 2014 and 2019, which was up from 64 per cent in 2000–2005. However, only 60 per cent of all births were assisted by skilled health professionals in sub-Saharan Africa and 77 per cent in southern Asia. Women living in rural areas are also much less likely to have access to these services compared to those living in urban areas. Only half of all pregnant women globally can access the recommended four antenatal care visits.

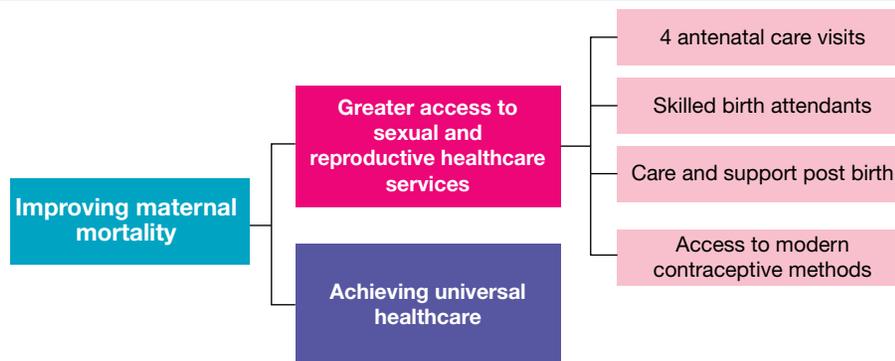
Preventing unintended pregnancy through universal access to family planning is critical to further improve the health and wellbeing of women and reduce maternal mortality. While access to modern methods of contraception for women aged 15 to 49 increased to 76.8 per cent in 2020, there are still many women who do not have the means to control the number of children they have and the timing and spacing of births. This figure is much higher in countries such as those in sub-Saharan Africa where only 55.5 per cent all women can access modern methods of contraception.

Adolescent pregnancy has also declined steadily in almost all regions but remains high in sub-Saharan Africa. In 2020, the adolescent birth rate in sub-Saharan Africa was 101 per 100 000 women aged 15–19 years.

FIGURE 11.8 Maternal mortality rates can be reduced with all women having access to quality antenatal care. It is recommended that women have four antenatal care visits during their pregnancy.



FIGURE 11.9 Improvements in maternal mortality can be achieved by increasing women's access to sexual and reproductive healthcare services.



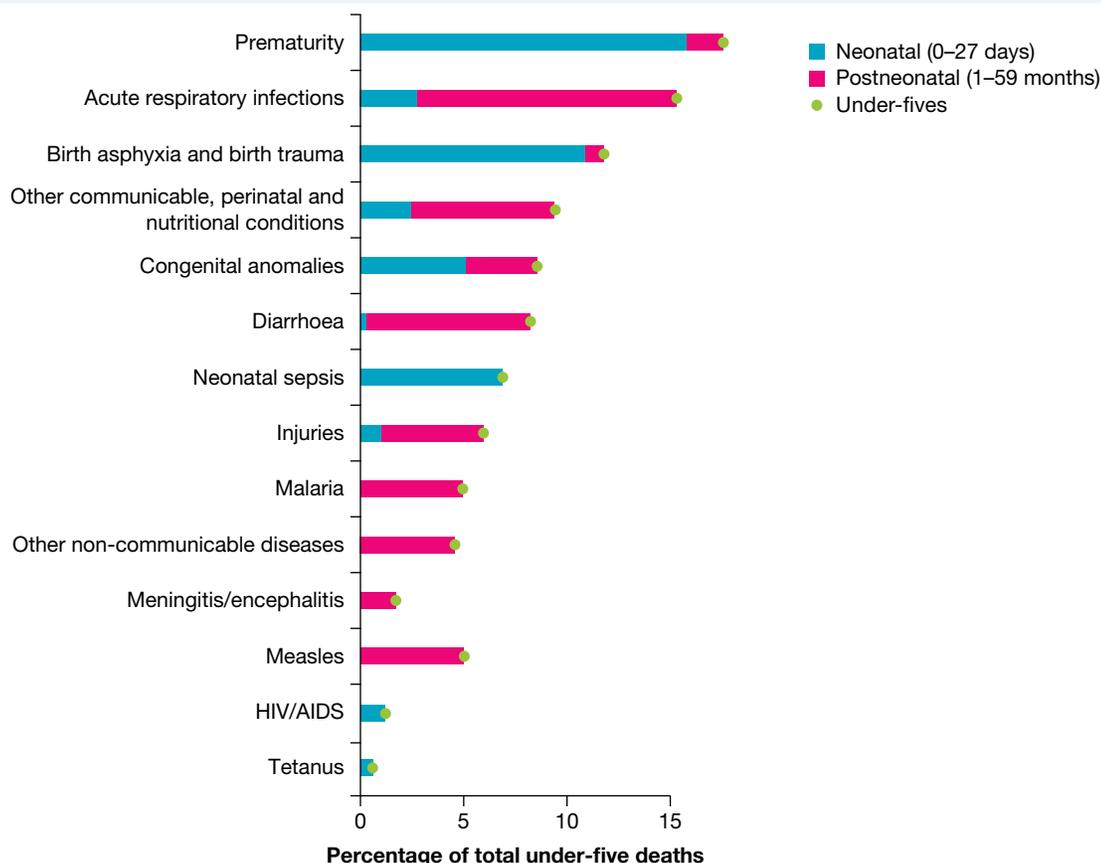
11.4.2 End preventable deaths of newborns and children under five

Many infant deaths occur in the **neonatal period** — the first 28 days of life. Up to half of all these deaths occur within the first 24 hours of birth, and 75 per cent occur in the first week. In 2018, 2.5 million newborns died, with most of these deaths occurring in the first week of life. The 48 hours immediately following birth is the most crucial period for newborn survival. Three quarters of neonatal deaths are due to premature birth, **birth asphyxia** (lack of breathing at birth), birth trauma and infections. Children who reach their fifth birthday have a much greater chance of surviving into adulthood. However, every day in 2019, 14 000 children died before reaching their fifth birthday, with acute respiratory infections, diarrhoea and malaria being the leading causes of death (see **FIGURE 11.10**).

Neonatal period the first 28 days after birth

Birth asphyxia a condition in which a baby's brain and other organs do not get enough oxygen before, during or immediately after birth. It can cause temporary or permanent damage.

FIGURE 11.10 Prematurity, acute respiratory infections, birth asphyxia and birth trauma are responsible for three-quarters of all deaths under five.



Source: World Health Organization, *World Health Statistics: 2018*, https://www.who.int/gho/publications/world_health_statistics/2018/EN_WHS2018_Part2.pdf?ua=1, p. 5

Improvements in newborn and child health and wellbeing

The global under-five mortality rate was reduced by more than half, from 76 to 39 deaths per 1000 live births, between 2000 and 2018. This represented a reduction from 9.9 million to 5.3 million deaths.

Neonatal mortality rates also declined from 31 deaths per 1000 live births in 2000 to 18 deaths per 1000 live births in 2018, representing a reduction from 4 million neonatal deaths in 2000 to 2.5 million in 2018.

Sub-Saharan Africa continues to have the highest neonatal mortality rate at 28 deaths per 1000 live births.

Improved access to antenatal care, more births being assisted by skilled health personnel, fewer adolescent girls falling pregnant and greater access to family planning services have all contributed. Since 2000, higher rates of childhood vaccination have saved almost 15.6 million lives and reduced the number of reported cases of measles by 67 per cent. Approximately 86 per cent of children worldwide received the required three doses of the Diphtheria-Pertussis-Tetanus vaccine in 2018 compared to 72 per cent in 2000.

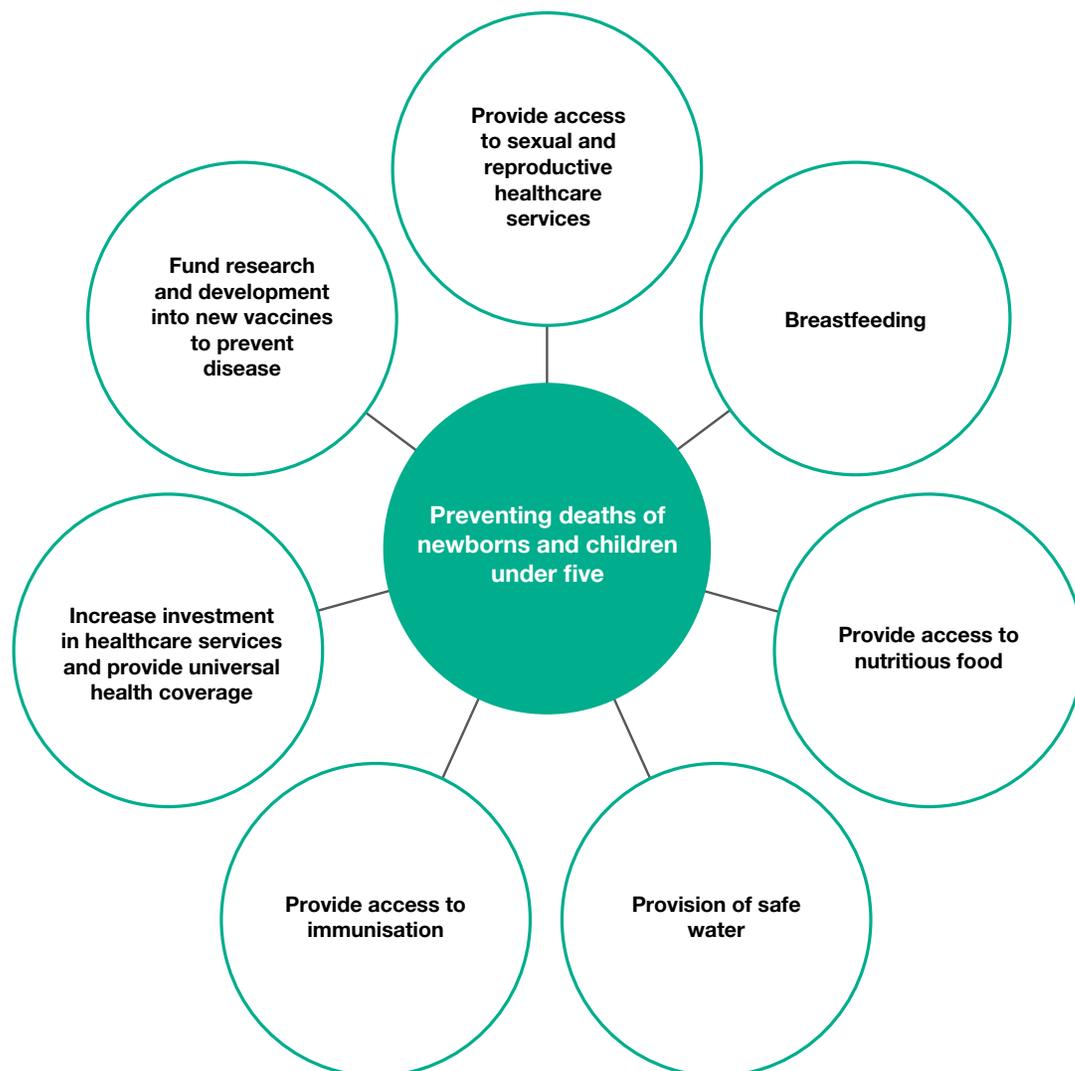
SDG 3 aims to end preventable deaths of newborns and children under five and reduce neonatal mortality from 19.2 per 1000 live births in 2015 to 12 per 1000 live births in 2030. It also aims to reduce under-five mortality rates from 43 deaths per 1000 live births to 25 per 1000 live births. However, one million newborns continue to die in their first week of life, and 2.5 million die during their first 28 days of life. Four out of every five deaths of children under five occurs in sub-Saharan Africa and southern Asia. Children born into poverty are almost twice as likely to die before the age of five as those from wealthier families. Children of educated mothers — even mothers with only primary schooling — are more likely to survive than children of mothers with no education.

End preventable deaths of newborns and children under five

Preventable deaths of newborns and those under five can be reduced by ensuring that mothers have access to sexual and reproductive health services, especially safe childbirth practices and neonatal care. Many deaths of children under five are due to preventable causes such as malnutrition, malaria, diarrhoea, measles and pneumonia. Breastfeeding, access to nutritious food, access to safe water, health and wellbeing services including vaccinations, and antibiotics are important for reducing the under-five mortality rate (U5MR). To achieve this, there needs to be increased investment in healthcare services. There are many children globally who are not vaccinated or do not receive the full vaccination schedule due to lack of access to healthcare. Investment by the global community is also needed for research and development of new vaccines to prevent diseases such as malaria, HIV and many tropical diseases, which are responsible for the deaths of many children under five (see **FIGURE 11.11**).

According to the United Nations, the impact of COVID-19 in 2020 is expected to have a significant impact on achievements in maternal mortality rates, and newborn and under-five mortality rates. Hundreds of thousands of additional under-five deaths are expected, along with tens of thousands of additional maternal deaths in 2020.

FIGURE 11.11 There are many factors that can contribute to ending preventable deaths of newborns and children under-five particularly in low- and middle-income countries.



11.4 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

11.4 Quick quiz



11.4 Exercise

11.4 Exam questions

Select your pathway

■ LEVEL 1

1, 3, 4

■ LEVEL 2

2, 5, 6

■ LEVEL 3

7, 8, 9, 10

Test your knowledge

1. What are the five main causes of maternal mortality?
2. Outline three ways that maternal mortality rates can be reduced.
3. When do most infant deaths occur?
4. What factors have contributed to reductions in under-five mortality rates?
5. How is COVID-19 expected to impact on the achievement of the targets for maternal mortality and preventable deaths of newborns and children under five? Provide two reasons that might explain this.

Apply your knowledge

6. Describe how access to sexual and reproductive health and wellbeing services can help reduce maternal and child mortality.
7. Why would children born into poverty be almost twice as likely to die before the age of five as those from wealthier families?
8. Discuss why universal health coverage could help reduce under-five mortality.
9. Refer to **FIGURE 11.10**. Compare the main causes of death for newborns to those that cause the death of children under five.
10. Create a table or mind map summarising the key points for SDG 3 — maternal and child health and wellbeing.

11.4 Quick quiz



11.4 Exercise

11.4 Exam questions

Question 1 (2 marks)

Using an example, **explain** why SDG 3 — Ensure healthy lives and promote wellbeing for all ages is important in promoting health and wellbeing globally.

Question 2 (1 mark)

Most infant deaths occur in the neonatal period. **What** is the meaning of neonatal?

Question 3 (2 marks)

Describe one way to reduce maternal mortality.

Question 4 (4 marks)

Explain the impact of COVID-19 on the progress that has been made in relation to reducing under five mortality rates.

More exam questions are available in your learnON title.

11.5 SDG 3 Key feature of communicable diseases

KEY CONCEPT Understanding the key features of SDG 3: Good health and wellbeing: key feature — communicable diseases

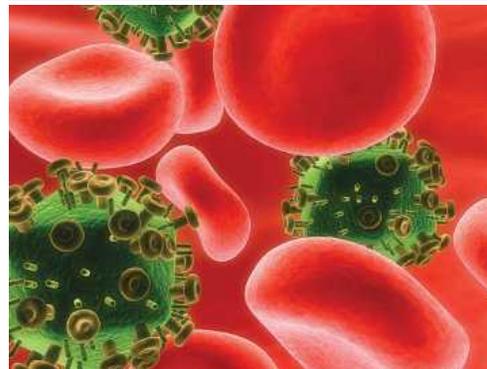
A feature of Goal 3 is to end epidemics of communicable diseases, in particular AIDS, tuberculosis, malaria and neglected tropical diseases. It also aims to reduce hepatitis, water-borne diseases and other communicable diseases.

11.5.1 AIDS

AIDS (Acquired Immunodeficiency Syndrome) is caused by the Human Immunodeficiency Virus (HIV), which damages and weakens the body's immune system. The body loses the ability to fight infections, and the infected person eventually develops AIDS. Those with AIDS are at high risk of developing infections, cancers and other diseases such as tuberculosis, which eventually leads to death. The HIV virus is transmitted via the exchange of infected bodily fluids such as blood, semen, vaginal secretions and breast milk. It is usually spread by sexual intercourse without a condom and by the sharing of needles and syringes. It is estimated that 75–85 per cent of adults who are HIV positive contracted the infection through unprotected sexual intercourse. HIV can also be passed from an infected mother to a child during pregnancy or birth, or through breastfeeding.

There is currently no cure for HIV and no vaccine to prevent the disease. However, antiretroviral drugs (ART) help delay and, in some cases, prevent the progression of HIV to AIDS. ART involves a combination of three or more drugs that stop the virus from reproducing so people with HIV can enjoy healthy lives and reduce the risk of transmitting the virus to others. However, ART does not eliminate the virus from the body and the drugs need to be taken continuously.

FIGURE 11.12 AIDS is caused by the HIV virus, which is transmitted via exchange of fluids such as blood. It destroys the immune system and the body loses its ability to fight infections.



Improvements in HIV/AIDS-related deaths and illness

An estimated 32.7 million people have died from AIDS-related illnesses since the start of the epidemic. However, progress has been made in reducing mortality from AIDS-related illnesses and the rate of new infections (see **FIGURES 11.14** and **11.15**). Progress has also been made in preventing mother-to-child transmission of HIV and reducing deaths of mothers who are infected with HIV.

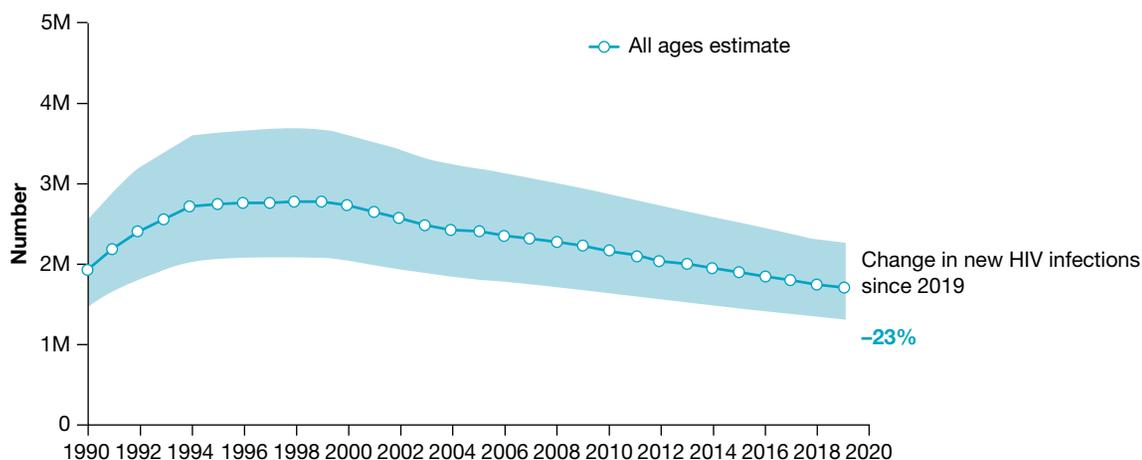
This progress has been due to substantial investment in health services, enabling more people to access ART treatment, ongoing research and development for better ways to diagnose the disease and cheaper medicines. Between 2013 and 2019 the percentage of people living with HIV and receiving ART increased from

FIGURE 11.13 Close to 10 per cent of Swaziland's total population are orphans due to HIV/AIDS.



39 per cent to 67 per cent. Twenty-six million people were accessing ART as of the end of June 2020. In 2019, approximately 85 per cent of pregnant women living with HIV had access to ART to prevent transmission of HIV to their babies.

FIGURE 11.14 The change in HIV infections between 2000 and 2019

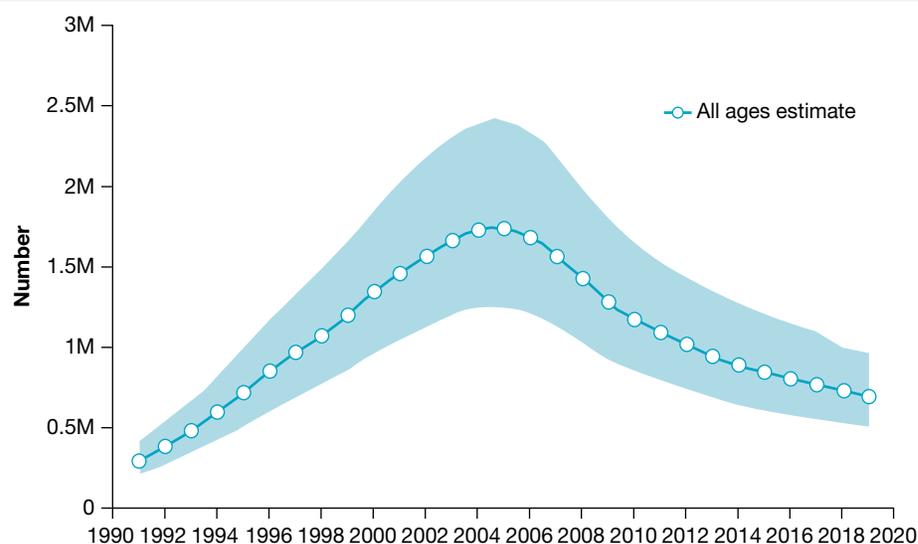


Source: <http://aidsinfo.unaids.org/>

SDG 3 aims to end the epidemic of AIDS by 2030. Despite the achievements since 2005, this remains a significant challenge for the global community.

- AIDS is still a major cause of morbidity and mortality, particularly in low- and middle-income countries.
- While mortality rates have fallen since 2004, approximately 690 000 people died from HIV-related causes in 2019 compared to 1.7 million in 2004.
- Sub-Saharan Africa is the most affected region, with 61 per cent of all new HIV infections occurring in this region in 2018.
- AIDS continues to be the leading cause of death among those aged 10 to 19 years in Africa, the second most common cause of death among youth globally and the leading cause of death for women of reproductive age worldwide.

FIGURE 11.15 The change in AIDS-related deaths between 2000 and 2019



Source: <http://aidsinfo.unaids.org/>

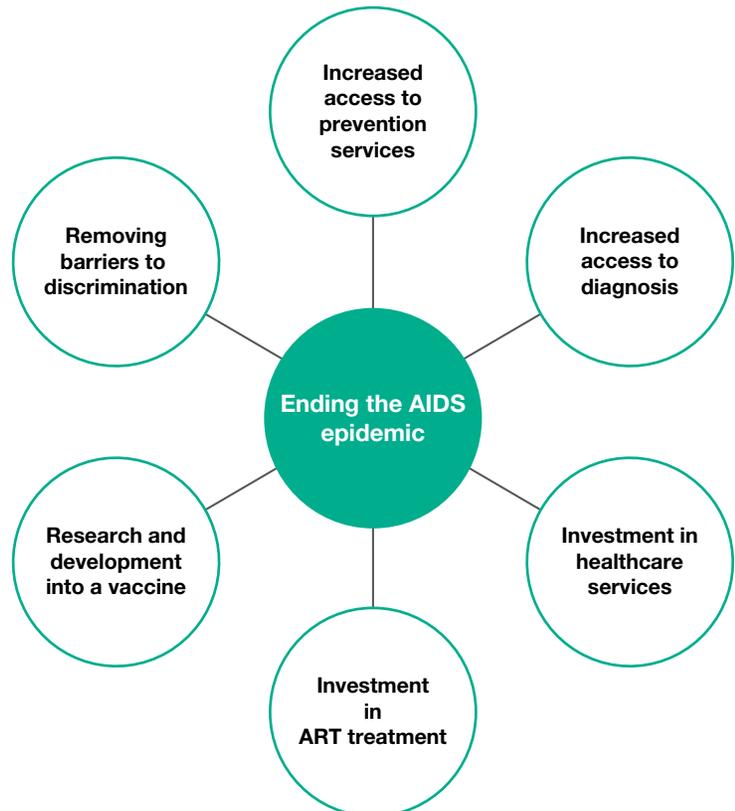
- In 2019 there were around 1.7 million new HIV infections, with approximately 38 million people living with HIV. Of these, 1.8 million were children younger than 15. Most of these children live in sub-Saharan Africa and were infected by their HIV-positive mothers during pregnancy, childbirth or breastfeeding.
- Of the 38 million people living with HIV, approximately 19 per cent (approximately 7.1 million people) do not know their HIV status.
- In 2019, global ART coverage of adults and children was approximately 67 per cent, however only 53 per cent of children aged 0–14 living with HIV were receiving ART.
- Approximately 15 per cent of pregnant women living with HIV do not have access to ART.

Ending the AIDS epidemic

Ending the AIDS epidemic requires all population groups to have access to prevention, diagnosis and ART. This requires continued investment in healthcare services and ART, and cost-effective testing and ongoing research and development into a vaccine. Measures are also needed to remove discrimination and stigma, which is a key barrier to accessing HIV services (see **FIGURE 11.16**).

The spread of HIV can be prevented by implementing a combination of actions including using condoms; voluntary male circumcision; pre-exposure medication that works to keep the HIV virus from taking hold in the body; promoting gender equality; and providing access to secondary education. There is still a lack of knowledge about HIV, its causes and how it can be prevented, particularly among youth. In sub-Saharan Africa, less than 40 per cent of youth aged 15 to 24 have correct knowledge about HIV.

FIGURE 11.16 Ending the AIDS epidemic requires a range of actions to be taken at a global level.



11.5.2 Malaria

Malaria is a life-threatening disease caused by parasites that are transmitted to people when bitten by infected female mosquitoes. Young children and pregnant women are at greater risk of contracting the disease. Malaria destroys the body's red blood cells and causes fever, headache, diarrhoea and vomiting. If left untreated, malaria can disrupt the blood supply to internal organs, causing death.

Actions to control and eradicate mosquitoes is the most effective way of preventing malaria. This is known as **vector control** and includes the use of insecticide-treated mosquito nets, which protect a person while they are sleeping; the spraying of the inside walls of homes with insecticide to kill and repel mosquitoes; and the use of antimalarial medicines. Once infected, malaria can be cured with quick diagnosis and treatment with ACT (Artemisinin Combination Therapy).

FIGURE 11.17 Malaria is a life-threatening disease caused by a bite from a female mosquito infected with malaria parasites.

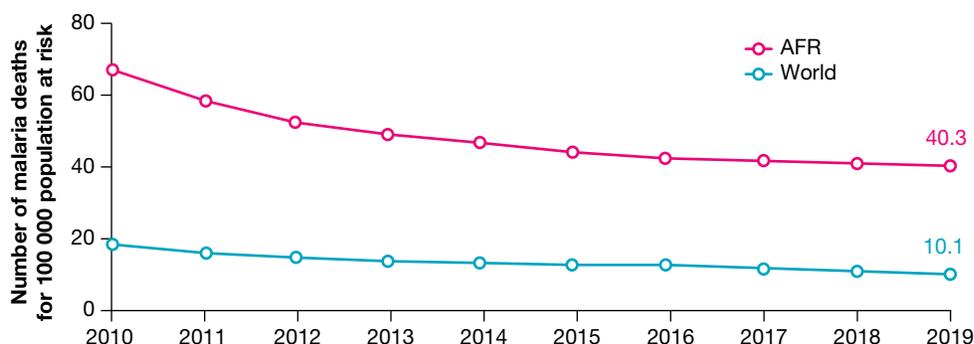


Vector control actions taken to control and eradicate the carriers of disease and infection

Improvements in malaria

Between 2000 and 2019, the number of deaths globally from malaria declined by 7.6 million. However, improvements in mortality rates have slowed. In 2019, malaria was responsible for the deaths of 409 000 people compared to 445 000 in 2016. Reductions in mortality rates have been significant in the African region, falling from 48.9 per 100 000 in 2015 to 40.3 per 100 000 in 2019. However, Africa accounts for 94 per cent of malaria cases and deaths worldwide (see **FIGURE 11.18**).

FIGURE 11.18 Globally, deaths from malaria have reduced over time. However, the African region continues to contribute to a high proportion of these deaths.



Source: World Health Organization, *World Malaria Report 2020*

In terms of incidence, the rates of malaria have increased since 2013. An estimated 229 million cases of malaria occurred in 2019 compared to 210 million cases in 2013 and 237 million cases in 2010 (see **FIGURE 11.19**).

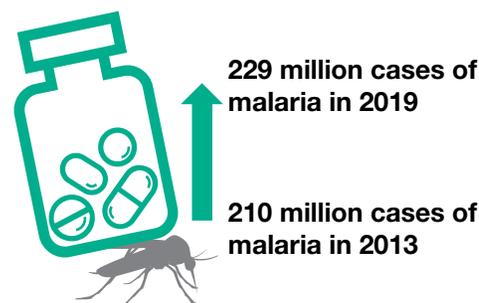
- The incidence rate of malaria has increased since 2013, yet remains lower than in 2010, decreasing by 18 per cent globally, or from 76 to 56 cases per 1000 population at risk, between 2010 and 2020.
- Malaria incidence in the African region reduced from 256 to 225 cases per 1000 population at risk from 2010 to 2019.
- Globally, more countries are moving towards the elimination of malaria. In 2019, 46 countries reported fewer than 10 000 malaria cases, up from 37 countries in 2010.

The World Health Organization estimates 6.8 million malaria deaths since 2001 have been prevented through the introduction of antimalarial strategies. The use of insecticide-treated bed nets and internal spraying of homes with insecticide are considered to have made major contributions to the reduction in morbidity and mortality rates. The use of insecticide-treated bed nets was estimated to account for 50 per cent of the decline among children aged 2–10 years in sub-Saharan Africa. Between 2004 and 2019, 1.9 billion insecticide-treated mosquito nets were provided to people living in malaria-prone countries in Africa, which meant 52 per cent of the at-risk population slept under a treated net. However, the percentage of people protected by insecticide-treated bed nets has been decreasing. In 2019, there were 8 per cent fewer people sleeping under insecticide-treated bed nets than in 2010.

The proportion of the population at risk being protected by the internal spraying of homes has also declined from 5.8 per cent in 2010 (180 million people) to 2.0 per cent in 2019 (97 million people).

FIGURE 11.19 The incidence of malaria has increased since 2013 and raises questions about whether the global goal of ending malaria by 2030 is possible.

The world is not on track to end malaria by 2030



Source: World Health Organization, *World Malaria Report 2020*

More effective diagnosis has made it easier and quicker for people suffering from fever caused by malaria to receive treatment, which has also helped reduce mortality rates. The world's first malaria vaccine is in the process of being piloted. Preventative treatment given to pregnant women after the **first trimester** can prevent maternal death, anaemia and low birth weight, a major cause of infant mortality. Between 2010 and 2019, access to preventative malaria treatment for pregnant women increased from 6 per cent to 34 per cent.

Malaria can also be reduced by removing or spraying stagnant water, which is a breeding ground for mosquitoes.

Ending the malaria epidemic

While progress has been made to end the epidemic of malaria by 2030, greater efforts are needed if the target for SDG 3 is to be achieved. Malaria continues to have a devastating impact on people's health and wellbeing. In 2019:

- malaria was still endemic in 87 countries
- more than 100 million people were still not protected by insecticide-treated bed nets
- there were 229 million new cases of malaria, which was an increase from 2015 when there were 218 million and an estimated 409 000 malaria deaths worldwide, most of which were children under five.

Ending the epidemic of malaria requires significant financial investment in healthcare and the health workforce to ensure universal access to diagnose, treat and prevent malaria. Mass-distribution of insecticide-treated bed nets is needed, along with more people being protected by the indoor spraying of their homes. Health systems in low-income countries are often under-resourced and not accessible to those most at risk of malaria.

Investment in the research and development of new vector control strategies, improved ways to diagnose the disease and more effective medicines are needed. Access to clean water and sanitation is also important to ensure that breeding grounds for mosquitoes are controlled.

Other challenges affecting the ability of countries to control and eliminate malaria include the risks posed by conflict in malaria-endemic zones, changing climate patterns and mosquito resistance to insecticides, particularly those used for indoor residual spraying (see **FIGURE 11.22**).

FIGURE 11.20 Baby sleeping under a mosquito net in Togo, West Africa

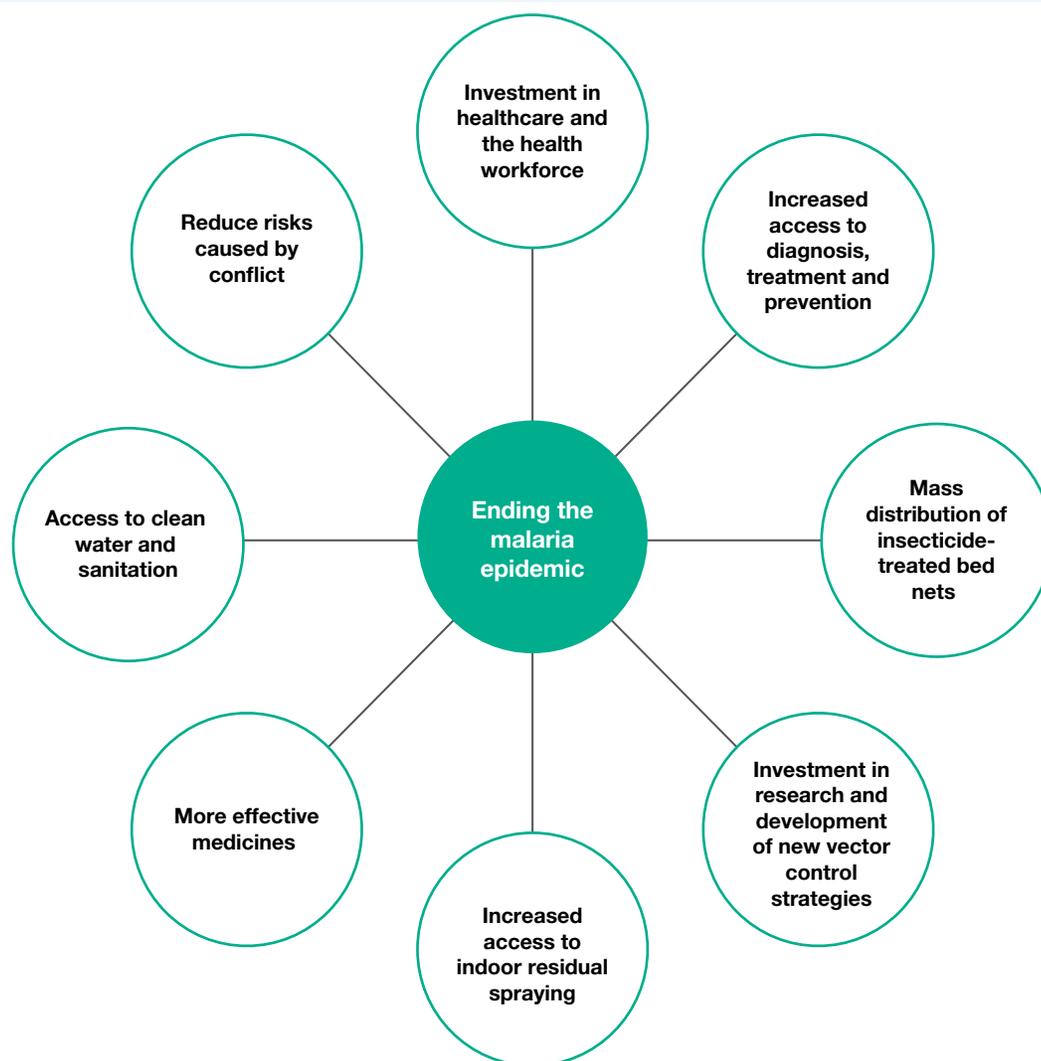


FIGURE 11.21 Access to necessary healthcare and medicines is needed to prevent, diagnose and treat malaria.



First trimester the first three months of pregnancy

FIGURE 11.22 Ending the malaria epidemic requires action in a range of areas.

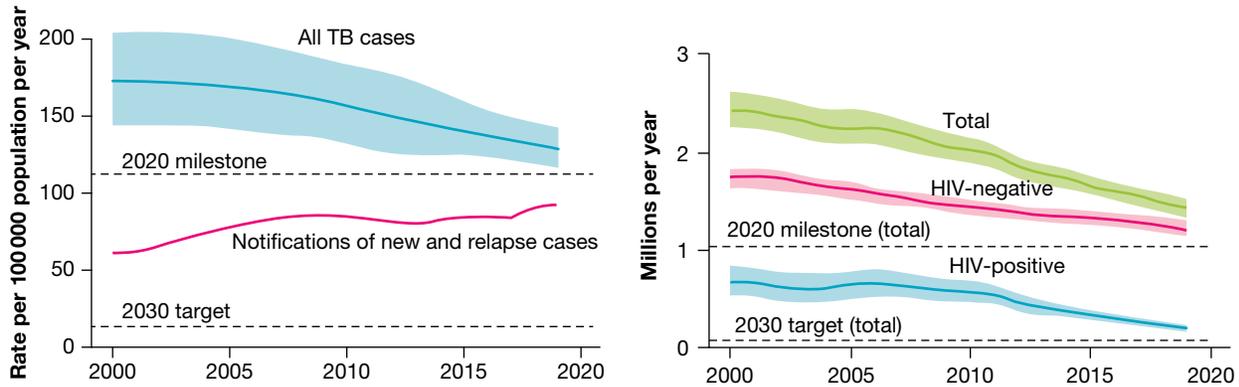


11.5.3 Tuberculosis

Tuberculosis (TB) is a disease that affects the lungs. It is highly contagious and is caused by bacteria that can spread from person to person via the air through coughing and sneezing. Ninety per cent of TB sufferers are adults. Its symptoms include night sweats, persistent cough, tiredness, weight loss and coughing up blood. If left untreated, TB destroys lung tissue and results in death. It mostly affects adults, although all age groups are at risk. The chances of developing TB are much higher among people infected with HIV. TB is curable and preventable. It can be prevented with vaccinations and, if diagnosed early, can be treated and cured with appropriate drugs. Approximately 85 per cent of people who develop TB can be successfully treated with a 6-month drug treatment program.

Improvements in tuberculosis

In 2019, 10 million people developed TB and the disease was responsible for 1.4 million deaths. This represented a decline in mortality from those suffering from TB from 23 per cent in 2000 to 14 per cent in 2019, which is a reduction from 28 per 100 000 to 16 per 100 000. Worldwide, the incidence of TB is declining by approximately 2 per cent each year, falling from 172 per 100 000 population in 2000 to 130 per 100 000 in 2019 (see **FIGURE 11.23**).

FIGURE 11.23 Global trends in estimated TB incidence and mortality rates, 2000–17

Note: Shaded areas represent uncertainty intervals.

Source: World Health Organization, *Global Tuberculosis Report 2020*

Major advances in the prevention, diagnosis and treatment of TB have contributed to these reductions. The BCG vaccine, which was developed almost 100 years ago has been shown to prevent TB in children. In 2019, 153 countries reported BCG vaccination coverage, with 87 of these countries reporting coverage of at least 90 per cent.

Ending the tuberculosis epidemic

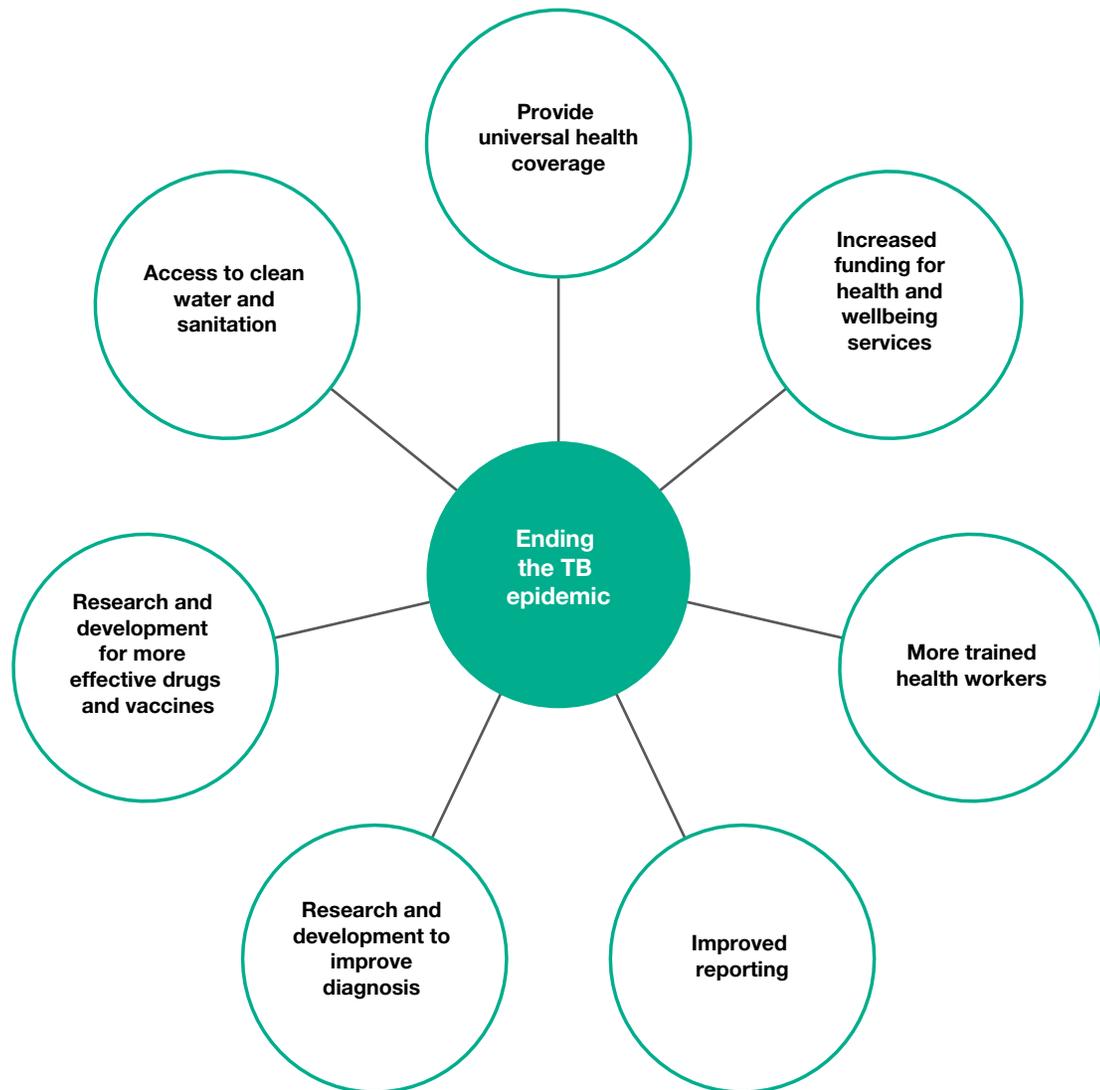
While the disease burden caused by TB is falling in all regions, it is not fast enough to meet the targets set. Nearly all cases of TB can be cured yet the disease is still one of the top ten causes of death worldwide, and caused more deaths than HIV in 2019.

- Over 95 per cent of TB deaths occur in low- and middle-income countries and the disease is among the top five causes of death for women aged 14–44.
- In 2019, there were an estimated 10 million people worldwide who contracted TB, of which 56 per cent were among men, 32 per cent were women and 12 per cent were children.
- Of the 10 million new cases of TB that occurred in 2019, only 7.1 million were officially notified to national authorities and to the WHO. This means many people are not receiving adequate diagnosis and treatment for the disease. However, this represents an increase from 7 million in 2018 and 6.4 million in 2017.
- Regular BCG vaccinations are still not reaching all children, putting many of them at risk.
- Drug-resistant TB continues to be a public health threat. Globally, in 2019 almost 500 000 developed drug-resistant TB.

Ending the TB epidemic depends on the provision of universal health coverage so all people have access to vaccination, early detection and effective treatment, especially the poor. Increased funding is needed for health and wellbeing services for the prevention, diagnosis and treatment of the disease. Increased funding for health and wellbeing services and trained health workers would also ensure that all cases of TB are reported and accurate data can inform health decisions.

Greater investment in research and development is needed for new and better ways to diagnose the disease, and for the development of resistant drugs and vaccines. There is currently no vaccine that is effective in preventing TB in adults, either before or after exposure to TB infection. New TB drugs have begun to emerge, particularly those better able to treat drug-resistant TB, and there are 14 vaccines in various stages of trialing. Funding is needed to enable further development and implementation of these. Access to clean water and sanitation is also important to prevent the spread of TB (see **FIGURE 11.24**). At the end of 2019 the world was not on track to meet the targets set.

FIGURE 11.24 Ending the epidemic of TB requires the global community to work together to address a range of factors.

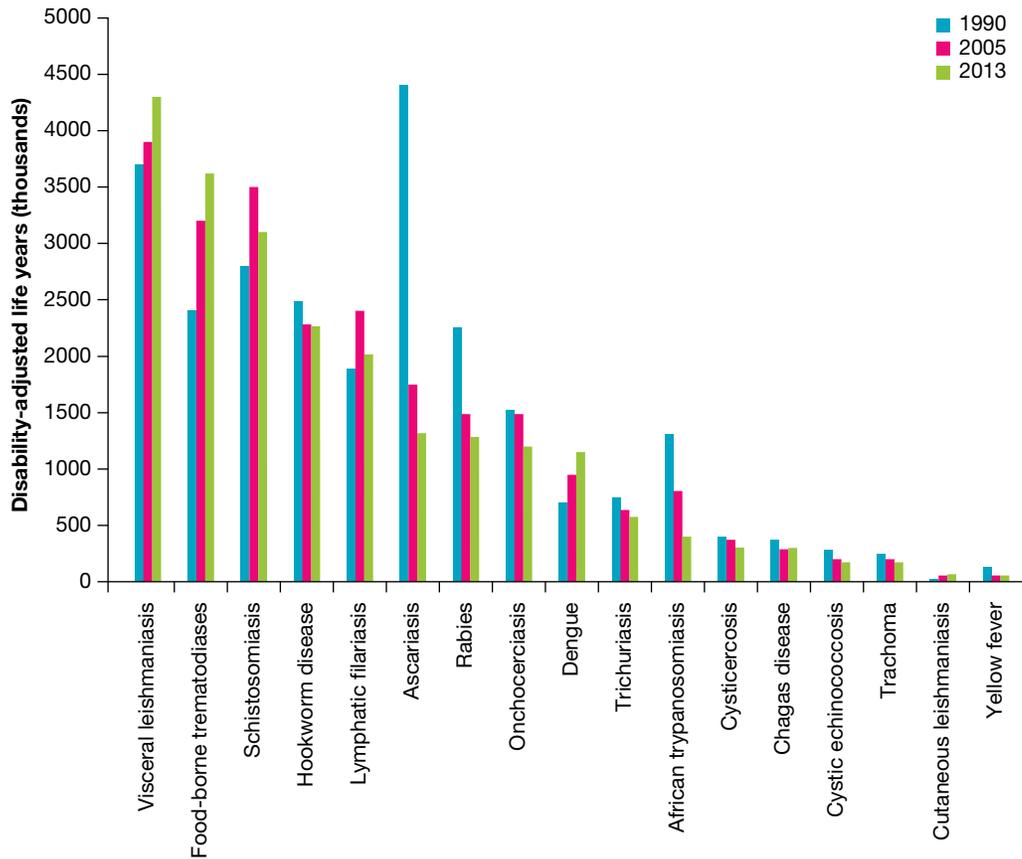


11.5.4 Neglected tropical diseases

Neglected tropical diseases (NTDs) are a diverse group of 18 diseases that mainly occur in tropical and subtropical environments. Their diversity includes the different ways in which they are transmitted as well as their different biological make-up. They all have a significant impact on health and wellbeing. They are referred to as neglected because they have received very little funding from governments and other organisations for research, prevention and control. Neglected tropical diseases thrive in the poorest, most marginalised communities, where people lack access to clean water and sanitation, have limited access to health and wellbeing services and who live in close contact with domestic animals and livestock. People are also at risk when they are in contact with infectious vectors such as mosquitoes, ticks, fleas and other carriers that transmit viruses or parasites.

These diseases can cause severe pain and permanent disability and, together, contribute around 150 000 deaths each year and globally account for 27 million disability-adjusted life years (DALY) (see **FIGURE 11.25**).

FIGURE 11.25 Global burden on NTDs (ranking based on the DALY in 2013, the latest data available.)



Source: Qian M-B, Zhou X-N 2019, 'Global burden on neglected tropical diseases', *Lancet Infectious Diseases*, 16, pp. 1113–1114.

In 2019, 1.76 billion people required mass or individual treatment and care for NTDs, down from 1.8 billion in 2015, and 2.19 billion in 2010. Two parasitic conditions that are responsible for considerable morbidity and disability are **schistosomiasis**, which affects over 220 million people, and **trachoma**, which affects 137 million people and is responsible for an estimated 1.9 million people being visually impaired.

Preventing neglected tropical diseases

Strategies that are effective in reducing morbidity and mortality from neglected tropical diseases include:

- safe and effective drugs that can prevent and treat infection
- vector control to remove carriers of these diseases such as mosquitoes, ticks, flies, fleas, bugs and worms
- veterinary public health measures for diseases and infections that are transmitted between animals and humans
- improved water and sanitation.

FIGURE 11.26 A doctor checks for the eye disease trachoma, which can lead to blindness as a result of the after-effects of conjunctivitis caused by chlamydia infections carried by flies.



Schistosomiasis a worm infection that occurs when people swim, bathe or have contact with fresh water contaminated with human excreta

Trachoma a bacterial infection of the eye that can cause complications including blindness

Improvements in neglected tropical diseases

Vector control and medicines have been successful in reducing several neglected tropical diseases. Several of these diseases are close to being eliminated and are no longer a public health problem. All countries have eliminated leprosy as a public health problem since 2010 and guinea-worm disease is also close to being eradicated. Improvements have also been made in addressing schistosomiasis, with more treatments being provided each year.

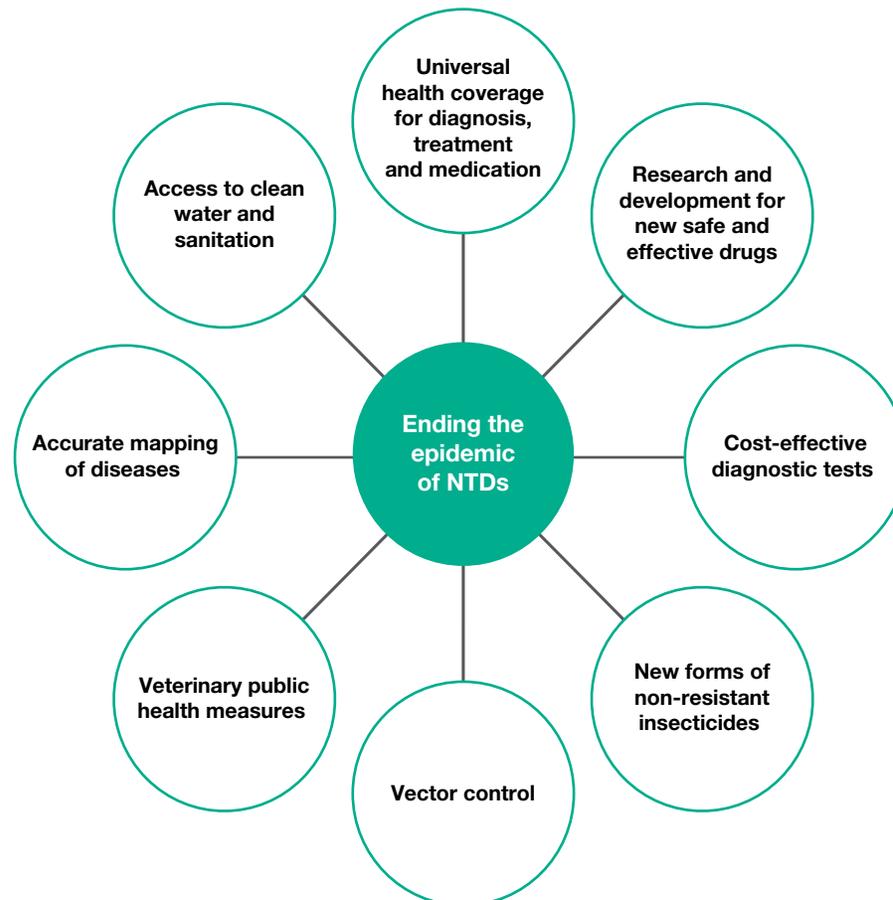
Ending the epidemic of neglected tropical diseases

The SDG target is to reduce the number of people needing treatment for these diseases by 90 per cent by 2030. To achieve this, research and development for new and effective drugs and cost-effective diagnostic tests is needed. Additional funding to provide universal health coverage is necessary to ensure all those at risk have access to diagnosis, treatment and medication. Funding is required for the development of new forms of insecticides as increasing levels of resistance to the current insecticides being used is threatening the progress that has been made in controlling some of these diseases. Ongoing commitment and funding for vector control and veterinary public health measures is necessary and has already been shown to be effective. Accurate mapping of disease distribution is also important. Actions outside the health sector are needed, such as access to clean water and sanitation, especially in remote areas where these diseases are more prevalent (see **FIGURE 11.28**)

FIGURE 11.27 Spraying insecticide is an effective method of vector control by killing the mosquitoes that cause dengue fever.



FIGURE 11.28 Ending the epidemic of neglected tropical diseases requires action in a range of areas and ongoing funding and commitment from the global community.

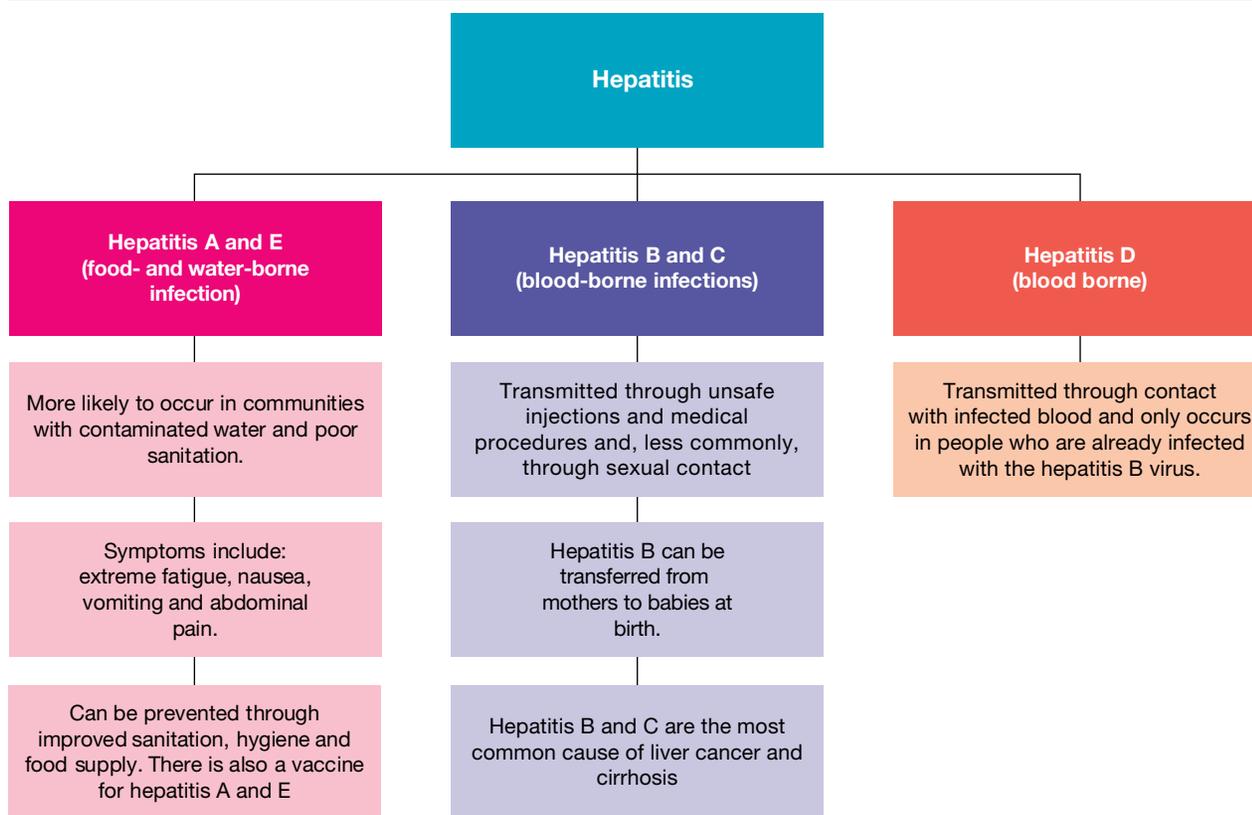


Other barriers to addressing neglected tropical diseases include global warming, climate change, ongoing urbanisation, and the global travel of people and goods — all of which have the potential to increase the spread of these diseases.

11.5.5 Hepatitis

Hepatitis is inflammation of the liver caused by a viral infection. Globally, 325 million people live with a hepatitis infection. There are five types of hepatitis that contribute to the global burden of disease, and have the greatest potential for outbreaks. These are referred to as types A, B, C, D and E. The five hepatitis viruses are very different — they differ in the way they are transmitted, how they affect population groups and their impact on health and wellbeing (see **FIGURE 11.29**).

FIGURE 11.29 Types of hepatitis: causes, symptoms and transmission.



Hepatitis A and E are food- and water-borne infections. Outbreaks of these types of hepatitis are more likely to occur in communities with contaminated water and poor sanitation. Hepatitis A and E can cause extreme fatigue, nausea, vomiting and abdominal pain. They can be prevented through improved sanitation, hygiene and food supply. There is also a vaccine for hepatitis A and E. Treatment includes bed rest and providing fluids to prevent dehydration.

Hepatitis B and C are blood-borne infections, and are transmitted through unsafe injections and medical procedures and, less commonly, through sexual contact. Hepatitis B can be transferred from mothers to babies at birth. Hepatitis B and C are the most common cause of liver cancer and cirrhosis. In 2020 there were approximately 250 million people living with chronic hepatitis B and 71 million with chronic hepatitis C. Hepatitis C is found worldwide, but the most affected regions are central and east Asia and north and west Africa. Most infections in these regions are caused by unsafe medical injections and other medical procedures. Hepatitis C epidemics related to injecting drug use occur in all regions, with an estimated 67 per cent of people who inject drugs infected with the hepatitis C virus. Hepatitis D is transmitted through contact with infected

blood and only occurs in people who are already infected with the hepatitis B virus.

All forms of hepatitis are responsible for an estimated 1.4 million deaths per year, which is similar to the death rates from HIV and tuberculosis. Hepatitis B accounts for 66 per cent of deaths, hepatitis C 30 per cent and hepatitis A and E are responsible for the remainder (see **FIGURE 11.30**). Hepatitis is also a growing cause of mortality among people living with HIV.

Hepatitis B is the form of hepatitis that contributes to the highest number of deaths from hepatitis. The prevalence of hepatitis B is higher in sub-Saharan Africa and East Asia, where 5–10 per cent of the adult population is chronically infected and mother-to-child transmission is the most common form of transmission.

Preventing hepatitis

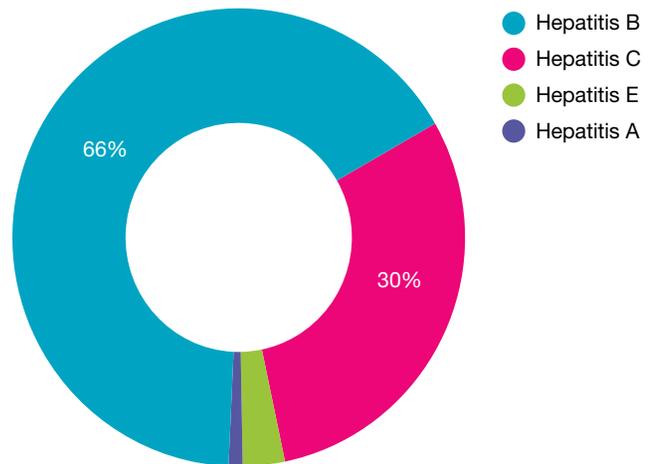
Hepatitis A and B can be prevented through immunisation and by ensuring blood supplies are screened and safe from the virus before being used for transfusions. Hepatitis A, B and C transmission can also be prevented with safe injection and safe sex practices. An increasing number of countries are now vaccinating infants against hepatitis B as part of their vaccination schedules.

Several blood tests are available to diagnose and monitor people with hepatitis A and B, although no treatments are available. Most sufferers of hepatitis A will recover with bed rest and fluids. Those with chronic hepatitis B infection can be treated with drugs that can slow the progression of cirrhosis, reduce incidence of liver cancer and improve long-term survival, but this generally does not cure hepatitis B infection. Therefore, most people who start hepatitis B treatment must continue it for life. In low- and middle-income countries there is limited access to services for the diagnosis and treatment of hepatitis and those who are diagnosed are often in the late stages of liver disease. In low-income countries, most people with liver cancer die within months of diagnosis. Hepatitis A and E can be prevented with access to clean water and sanitation.

Ending the epidemic of hepatitis

To end the epidemic of hepatitis, large-scale vaccination programs are needed, particularly for those at high risk of hepatitis A, B and E, and to prevent mother-to-child transmission. Access to clean water and sanitation is also important. Safe practices in healthcare settings are needed to ensure blood and surgical safety. Prevention programs that are successful in reducing hepatitis C infection rates need to be expanded and more funding for universal health coverage to provide affordable health and wellbeing services is needed to ensure people have access to the healthcare they need. Sufferers of hepatitis B need affordable medicines for the remainder of their lives (see **FIGURE 11.32**).

FIGURE 11.30 Percentage of deaths attributed to hepatitis viral infections, 2015

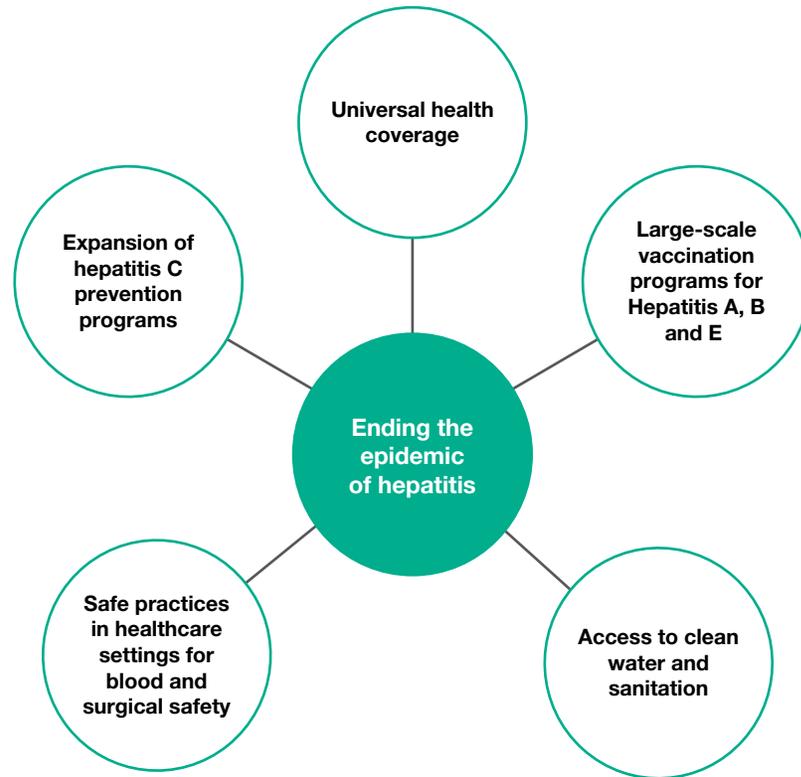


Source: <https://unstats.un.org/sdgs/report/2019/goal-03/>

FIGURE 11.31 Hepatitis A and B can be prevented through immunisation.



FIGURE 11.32 A range of actions must be taken to end the epidemic of hepatitis.



11.5 Activities

1. Work individually or in pairs to research one neglected tropical disease. Include a description, how it is transmitted, its impact on health and wellbeing and the regions or countries where most people are affected. Share with the rest of the class.
2. Use concept mapping software to create a concept map illustrating each disease group covered in this subtopic. For each disease group include a description of the disease, how it is transmitted, its impact on health and wellbeing and actions taken to reduce its spread.

11.5 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

11.5 Quick quiz



11.5 Exercise

11.5 Exam questions

Select your pathway

■ LEVEL 1

2, 3, 4, 5, 6, 7, 9, 10

■ LEVEL 2

1, 8, 11, 13, 14, 15

■ LEVEL 3

12, 16

Test your knowledge

1. What is the relationship between HIV and AIDS?
2. How is HIV transmitted?
3. What factors have contributed to the reduction in new cases and deaths from AIDS?
4. What is malaria and how can it be prevented?
5. What factors have contributed to the reduction in malaria deaths?

6. How can TB be prevented and treated?
7. What are neglected tropical diseases?
8. Explain how neglected tropical diseases can be reduced through vector control.
9. Which neglected tropical diseases cause considerable morbidity and mortality?
10. Which forms of hepatitis cause the greatest number of deaths?

Apply your knowledge

11. Why would the decreasing number of deaths from AIDS result in an increase in the number of people living with HIV?
12. Climate change is a barrier to reducing NTDs. Explain why.
13. Describe three actions that need to be taken to meet the SDG 3 target for malaria.
14. Refer to **FIGURES 11.14** and **11.15**. Provide two reasons for the trend evident in each of the graphs.
15. Refer to **FIGURE 11.25** and identify the neglected tropical disease that saw the greatest reduction in DALY between 1990 and 2013.
16. 'All forms of hepatitis can be treated and prevented.' Discuss this statement.

11.5 Quick quiz



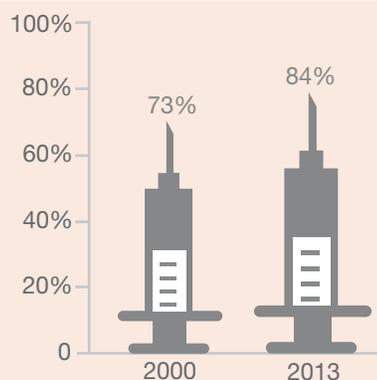
11.5 Exercise

11.5 Exam questions

Question 1 (1 mark)

Identify the key feature of Sustainable Development Goal 3 that is reflected in the image below.

Global measles vaccine coverage



Question 2 (3 marks)

Identify three examples of communicable diseases.

Question 3 (2 marks)

Malaria can be prevented by controlling and eradicating mosquitoes. This is known as vector control. **Identify** two examples of vector control techniques.

Question 4 (3 marks)

Outline the key areas required to focus on to end the AIDS epidemic.

Question 5 (2 marks)

What contributed to the reduction in mortality and incidence of tuberculosis?

More exam questions are available in your learnON title.

11.6 SDG 3 Key feature of non-communicable diseases

KEY CONCEPT Understanding the key features of SDG 3: Good health and wellbeing: key feature — non-communicable diseases

11.6.1 Non-communicable diseases

Another feature of SDG 3 is to reduce the incidence of non-communicable diseases (NCDs) that occur due to lifestyle or environmental factors. Four non-communicable diseases — cardiovascular disease, cancer, diabetes and chronic respiratory disease — account for 71 per cent of deaths globally. Cardiovascular disease is the most common non-communicable disease (affecting 17.9 million people), followed by cancers (9 million people), respiratory diseases (3.8 million) and diabetes (1.6 million). Together these diseases account for 71 per cent of the 41 million deaths from non-communicable diseases each year.

Traditionally, non-communicable diseases were a problem only for high-income countries. However, 85 per cent of the burden of these diseases now affects low- and middle-income countries where people become ill more quickly, suffer more serious illness, and die earlier than those in high-income countries. More than 5 million deaths from non-communicable diseases are the result of tobacco use, while more than 600 000 are the result of passive smoking. Other common risk factors include poor diets, physical inactivity and the harmful use of alcohol. As you saw in topic 8, tobacco, alcohol and processed foods have become more widely available in low- and middle-income countries due to global marketing. This has led to a rapid increase in non-communicable diseases.

Changes in our lifestyle have contributed to the increased incidence of non-communicable diseases. Levels of physical activity have declined while the consumption of energy-dense foods has increased. This has led to a rise in both adult and childhood obesity, a risk factor for many non-communicable diseases (see **FIGURES 11.35** and **11.36**).

FIGURE 11.33 More than 5 million deaths from non-communicable diseases are the result of direct tobacco use.



FIGURE 11.34 Rates of adult and childhood obesity are increasing in almost all regions.

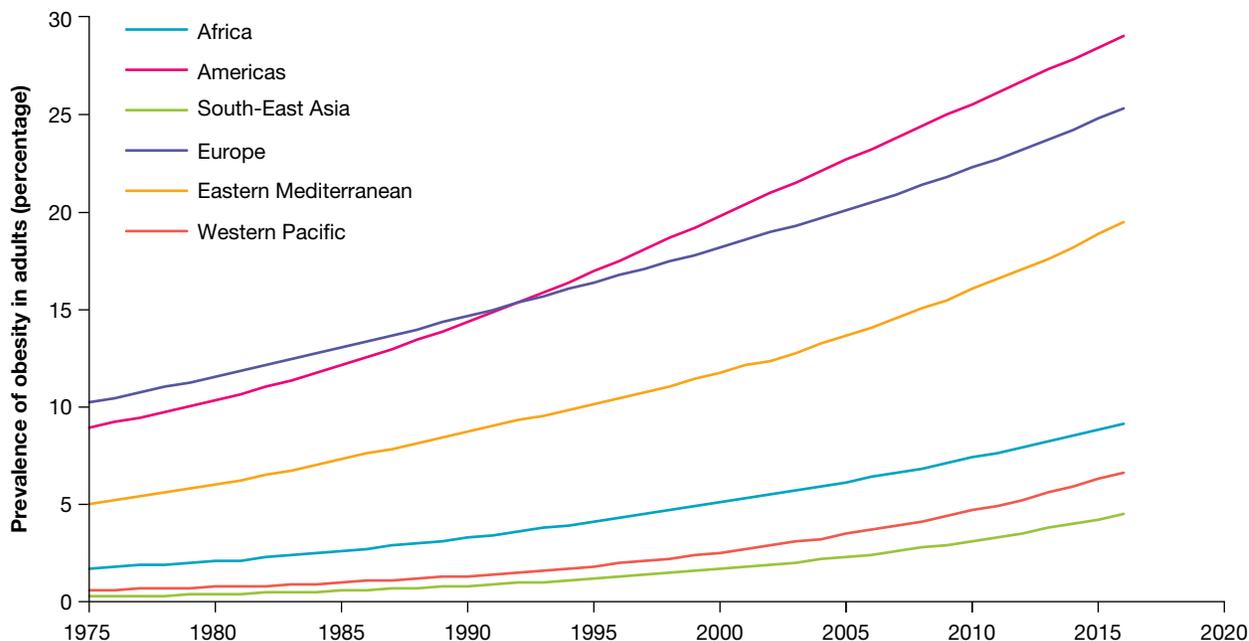


Non-communicable diseases are costly to healthcare systems. Some countries spend up to 15 per cent of their total health budget on the treatment of diabetes and its complications alone. In low- and middle-income

countries, the rapid rise in non-communicable diseases has the potential to reverse many of the economic gains achieved by the reduction in infectious diseases.

int-8507

FIGURE 11.35 Adult obesity is rising globally.



Note: Prevalence of obesity in adults 18 years and over, 1975–2016

Source: WHO/NCD-RisC and WHO Global Health Observatory Data Repository 2019

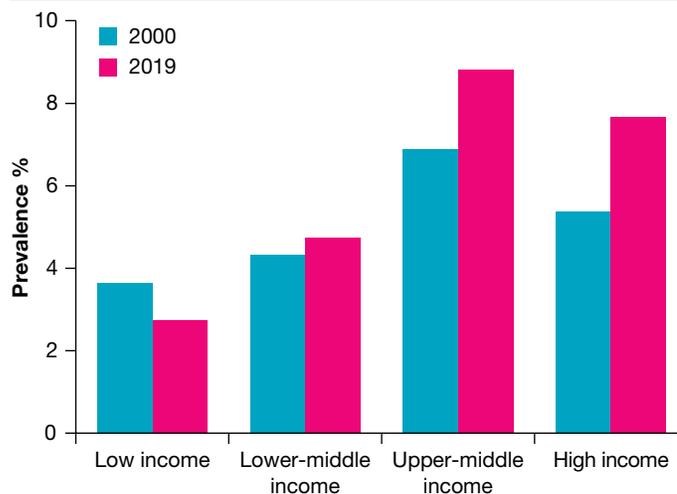
Many non-communicable diseases can be prevented, and for those already suffering ill health, early disease detection and affordable treatments are available. Inexpensive medicines can reduce the risk of heart attacks and stroke. In countries where the rates of tobacco smoking and alcohol consumption have been reduced, death rates from diseases such as cancer, heart disease, diabetes and stroke have been reduced. Of greater challenge is the need to reduce levels of obesity, where no country has yet been successful.

Reducing premature mortality from non-communicable diseases

Globally, the risk of dying from any one of the four main NCDs between ages 30 and 70 decreased from 22 per cent in 2000 to 18 per cent in 2019, but if the target for reducing mortality from non-communicable diseases is to be achieved a great deal of effort is needed (see **FIGURE 11.37**).

FIGURE 11.36 Changes in childhood obesity rates, 2000–19

int-8508



Source: World Health Organization, *World Health Statistics 2020*, <https://apps.who.int/iris/bitstream/handle/10665/332070/9789240005105-eng.pdf>, p. 14

FIGURE 11.37 Reducing premature mortality from non-communicable diseases is a global problem and requires a range of actions to be taken.



The World Health Organization recommends that countries:

- implement taxes on alcohol and tobacco products
- implement the Framework Convention on Tobacco Control to substantially reduce deaths due to smoking
- legislate for food labels to include easy to understand information
- encourage schools and workplaces to find ways to encourage regular physical activity
- place taxes on sugar-sweetened drinks, remove them from schools and restrict their marketing to reduce children’s exposure to unhealthy food and drinks.

Low-income countries have less capacity to prevent and control non-communicable diseases. The prevalence of hypertension (high blood pressure) in low-income countries is higher than in high-income countries, affecting an estimated 28.9 per cent of adults. High-income countries are nearly four times more likely to have services to treat non-communicable diseases covered by health insurance than low-income countries. Countries with

inadequate health insurance coverage are unlikely to provide universal access to essential healthcare for early diagnosis, treatment, management or cure.

Implementation of the WHO Framework Convention on Tobacco Control in all countries would help reduce deaths due to smoking. In 2018, more than 1.3 billion people aged 15 years or older smoked tobacco, 38.6 per cent of all males and 8.5 per cent of all females in this age group. Nearly 80 per cent of the world's smokers live in low- and middle-income countries, yet there are no services to help people quit smoking in one quarter of low-income countries. Some improvements have been made, with more countries passing laws requiring plain packaging for cigarettes or health warnings appearing on tobacco product packaging and improving the national monitoring of tobacco use.

Other measures that need to be taken to reduce deaths from non-communicable diseases include:

- raising the priority for the prevention and control of these diseases in all countries, particularly low- and middle-income countries where the focus has largely been on addressing infectious diseases
- reducing risk factors for NCDs and creating health-promoting environments
- strengthening health systems to address the prevention and control of NCDs and to provide universal health coverage
- investing in research and development for the prevention and control of NCDs and to monitor trends (see **FIGURE 11.37**).

11.6.2 Mental health and wellbeing

When people experience good mental health and wellbeing, they are able to realise their potential, cope with the normal stresses of life, work productively and contribute to their communities. Unfortunately, there are many people who do not enjoy good mental health and wellbeing. Poor mental health and wellbeing is associated with rapid social change, stressful work conditions, gender discrimination, social exclusion, an unhealthy lifestyle, risks of violence, physical ill health and wellbeing and human rights violations.

FIGURE 11.38 The WHO recommends placing taxes on sugar-sweetened drinks, removing them from schools and restricting their marketing to reduce obesity and diseases such as cardiovascular disease, cancer and type 2 diabetes.



FIGURE 11.39 World No Tobacco Day is held each year to raise awareness of the dangers of tobacco smoking and encourage people to quit smoking.



Mental disorders, such as depression, are among the 20 leading causes of disability worldwide, with an estimated 350 million people affected. Depression is long-lasting and causes enormous suffering, reducing the ability of a person to function at work, at school and in the family. At its worst, depression can lead to suicide. Globally, more than 800 000 people die due to suicide every year, with suicide being the second leading cause of death in 15- to 29-year-olds.

FIGURE 11.40 Good mental health and wellbeing is promoted when there are good social supports and an environment that respects human rights.



People who have gone through traumatic life events (unemployment, bereavement, psychological trauma) are at greater risk of depression. Mental disorders contribute to poverty and homelessness. People with mental disorders are often stigmatised, suffer discrimination and are denied their basic human rights. Mental disorders often affect, and are affected by, other diseases such as cancer, cardiovascular disease and HIV/AIDS. As a result, those who suffer from mental disorders often experience higher rates of morbidity and mortality and lower life expectancy.

Mental disorders such as depression can be treated effectively with appropriate medication and psychological support. An environment that respects and supports people's rights and provides strong social support is important for good mental health and wellbeing and can help prevent some mental disorders. Preventing depression is also possible when positive thinking programs are integrated into school-based curriculum; support programs are put in place for parents of children with behavioural problems to reduce the level of depression affecting adults; and exercise programs for the elderly are put in place.

The burden of depression and other mental health and wellbeing conditions is on the rise globally and while depression can be treated with antidepressants, fewer than half of those affected worldwide have access to these treatments (in many countries, it is less than 10 per cent). Mental disorders such as depression also need to be accurately diagnosed. The availability of specialised and general mental health workers in low- and middle-income countries is extremely low, which means that most mental disorders go undiagnosed and untreated. Almost half the world's population lives in countries where, on average, there is one psychiatrist to serve approximately 200 000 people.

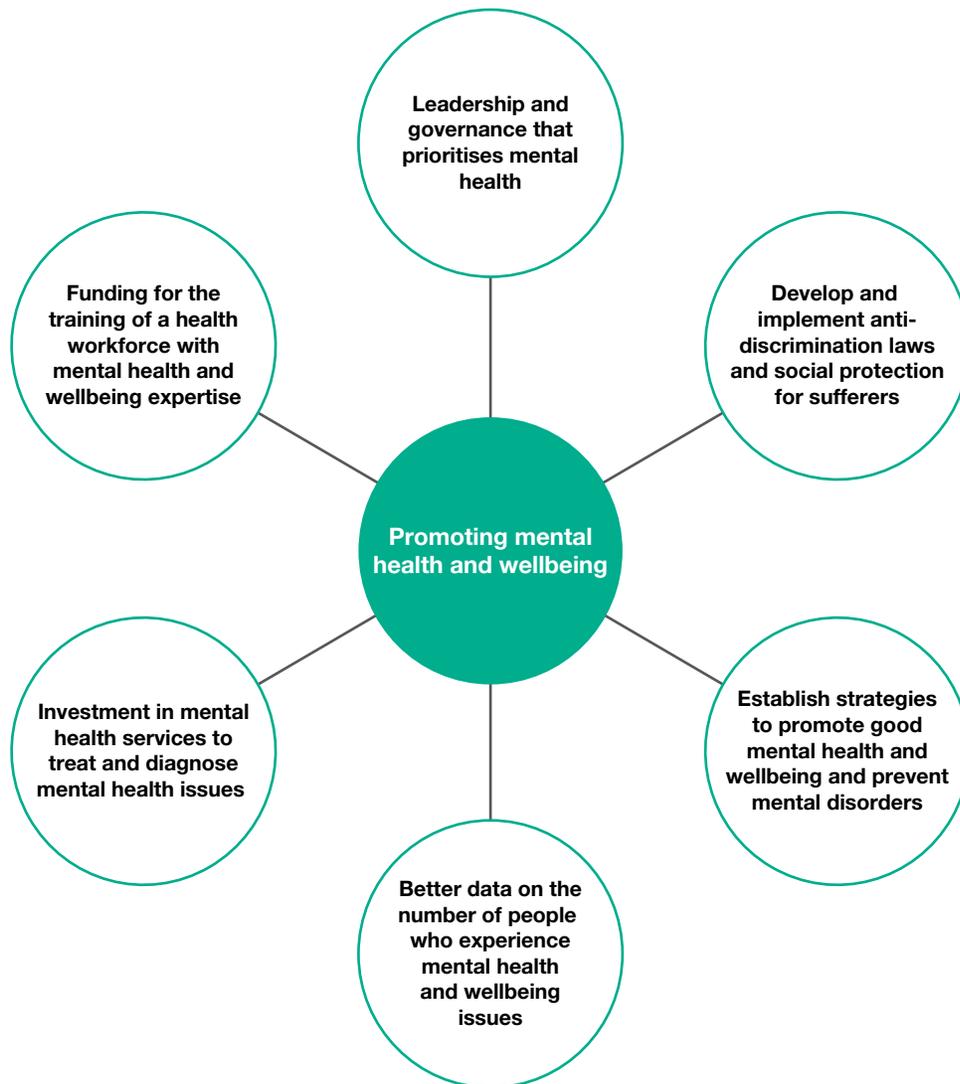
Promoting mental health and wellbeing

To promote mental health and wellbeing and achieve the targets of SDG 3 there needs to be:

- more effective leadership and governance for mental health and wellbeing. It needs to be a high priority of governments of all countries, but particularly low- and middle-income countries. This includes putting in place anti-discrimination laws and social protection for those who suffer from mental disorders.
- the development and implementation of a range of strategies to promote good mental health and wellbeing and prevent mental disorders
- more data on the number of people who experience mental health and wellbeing issues

- more investment in providing a range of mental health services that are accessible to those who need them and provide treatment for those affected
- increased funding for the training of a health workforce with expertise in mental health and wellbeing (see **FIGURE 11.41**).

FIGURE 11.41 Promoting mental health and wellbeing requires countries, especially low- and middle-income countries, to implement a range of measures.



11.6.3 Road traffic accidents

Around 1.35 million people die each year from road traffic accidents — around 3500 people lose their lives each day. A further 20–50 million people suffer non-fatal injuries, with many suffering long-term disability as a result. Road traffic injuries are the ninth leading cause of death globally, and the leading cause of mortality among people aged 15–29 years. Almost three-quarters of all road deaths are males. Ninety per cent of these deaths occur in low- and middle-income countries, with Africa being overrepresented.

Poor quality roads, unsafe vehicles and driver behaviour are responsible for most of the road traffic accidents worldwide, with driver behaviour being a significant factor. Speed, driving while under the influence of alcohol and drugs, and other risk-taking behaviours put people at risk of injury, disability or death.

Reducing the burden of disease from road traffic accidents

SDG 3 aims to halve the number of global deaths and injuries from road traffic accidents. This is an ambitious goal as the number of vehicles on the road increases each year. To achieve this, a coordinated approach is needed, involving the transport sector, police, health and education sectors. Good road infrastructure is important, along with ensuring that vehicles on the road are safe and in good working condition. Education, healthy public policy and law enforcement are needed to modify driver behaviour and, in the event of a road accident, emergency services and quality healthcare are needed to ensure those who are injured can get immediate and longer-term treatment. In many low- and middle-income countries, there is a lack of resources and political interest to invest in health promotion and law enforcement and limited healthcare services means many victims of road accidents are not provided with the necessary emergency services and treatment they need.

FIGURE 11.42 The number of vehicles on the roads increases each year, and the aim to halve the number of deaths and injuries is ambitious.



11.6.4 Drug and alcohol misuse

Alcohol

The misuse of substances, particularly alcohol, is a significant public health issue worldwide. Alcohol is responsible for 3 million deaths each year, which represents approximately 5.1 per cent of the global burden of disease. It increases a person's risk of developing over 200 diseases, including cirrhosis of the liver and several forms of cancer. Harmful alcohol consumption can also lead to death, injury and disability from violence, drowning and accidents.

The worldwide level of alcohol consumption is around 6.4 litres of pure alcohol per person aged 15 years or older, a level that has remained stable since 2010. Europe has the highest rate of consumption per person and increasing rates of alcohol consumption

are occurring in South-East Asia and countries in the Western Pacific region. Each year, alcohol accounts for approximately 7.6 per cent of deaths for males and 4 per cent for females. Of concern is the increasing rate of consumption of alcohol by females. Alcohol is a drug of dependence and many people need specialised medical assistance to help them change their behaviour. However, only one in six people worldwide have access to healthcare services capable of supporting them with alcohol issues.

FIGURE 11.43 Alcohol contributes to approximately 51 per cent of the global burden of disease and contributing 7.6 per cent of deaths for males.



Illicit drugs

It has been estimated that 150–250 million people, or between 3.5 and 5.7 per cent of people aged 15–64, worldwide have used illicit drugs. Illicit drugs are responsible for more than 450 000 deaths each year. Between 15 and 27 million people are considered to have drug-use disorders. The most common illicit drug being used is cannabis, followed by amphetamines, cocaine and opioids.

Illicit drugs affect economic and social development. They contribute to crime, instability, insecurity and the spread of HIV. Injecting drugs carries a high risk of contracting blood-borne viruses such as HIV, hepatitis C and hepatitis B. Injecting drug use accounts for an estimated 30 per cent of new HIV infections outside sub-Saharan Africa. Illicit drug use is a major public health concern and results in considerable healthcare costs.

In some countries the use of illicit drugs has remained stable, while in other countries, including many low- and middle-income countries, the rate of illicit drug use has been increasing. Illicit drug use is also becoming more concentrated among youth, particularly male youth living in urban areas. Children and youth who suffer from neglect, abuse, household dysfunction, exposure to violence and instability are at greater risk of substance abuse.

Reducing the burden of disease from alcohol and illicit drugs

It has been estimated that the cost of treating all drug-dependent people worldwide would be US\$200–250 billion. Therefore, greater funding is required to strengthen prevention and treatment services and reduce the burden of disease associated with drug and alcohol misuse. Drug and alcohol dependent people require treatment, which is only accessible to around one in six (4.5 million) people worldwide. In Africa, this is much less at 1 in 18.

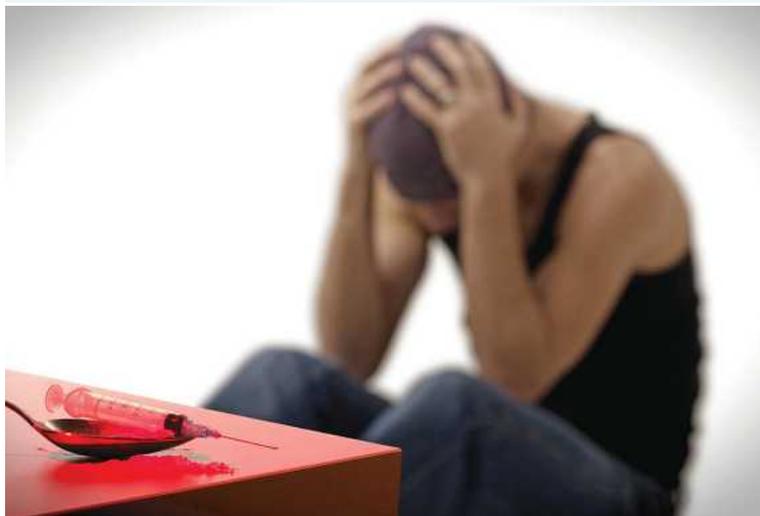
Governments also need to implement strong policies in relation to drug and alcohol use, and work with police and the health and education sectors to ensure enforcement of legislation, the provision of resources for the prevention and treatment of alcohol and drug disorders and access more accurate data. International cooperation is also needed to address the illegal movement of drugs and alcohol between countries.

11.6.5 Hazardous chemicals and air, water and soil pollution and contamination

Every year, almost 12.6 million people die from diseases associated with environmental hazards, such as air, water or soil pollution. This represents one in four deaths worldwide. In addition, 22 per cent of the global disease burden (in DALYs) is attributable to environmental risks that can be prevented.

Low- and middle-income countries experience the largest environment-related disease burden with a total of 7.3 million deaths. Children under five and adults aged 50–75 are at greatest risk. As more people move to cities, pollution from heavy traffic, poor housing and limited access to water and sanitation services bring about significant health and wellbeing risks. Environmental risk factors contribute to more than 100 diseases and injuries, two-thirds of which are due to indoor and external air pollution.

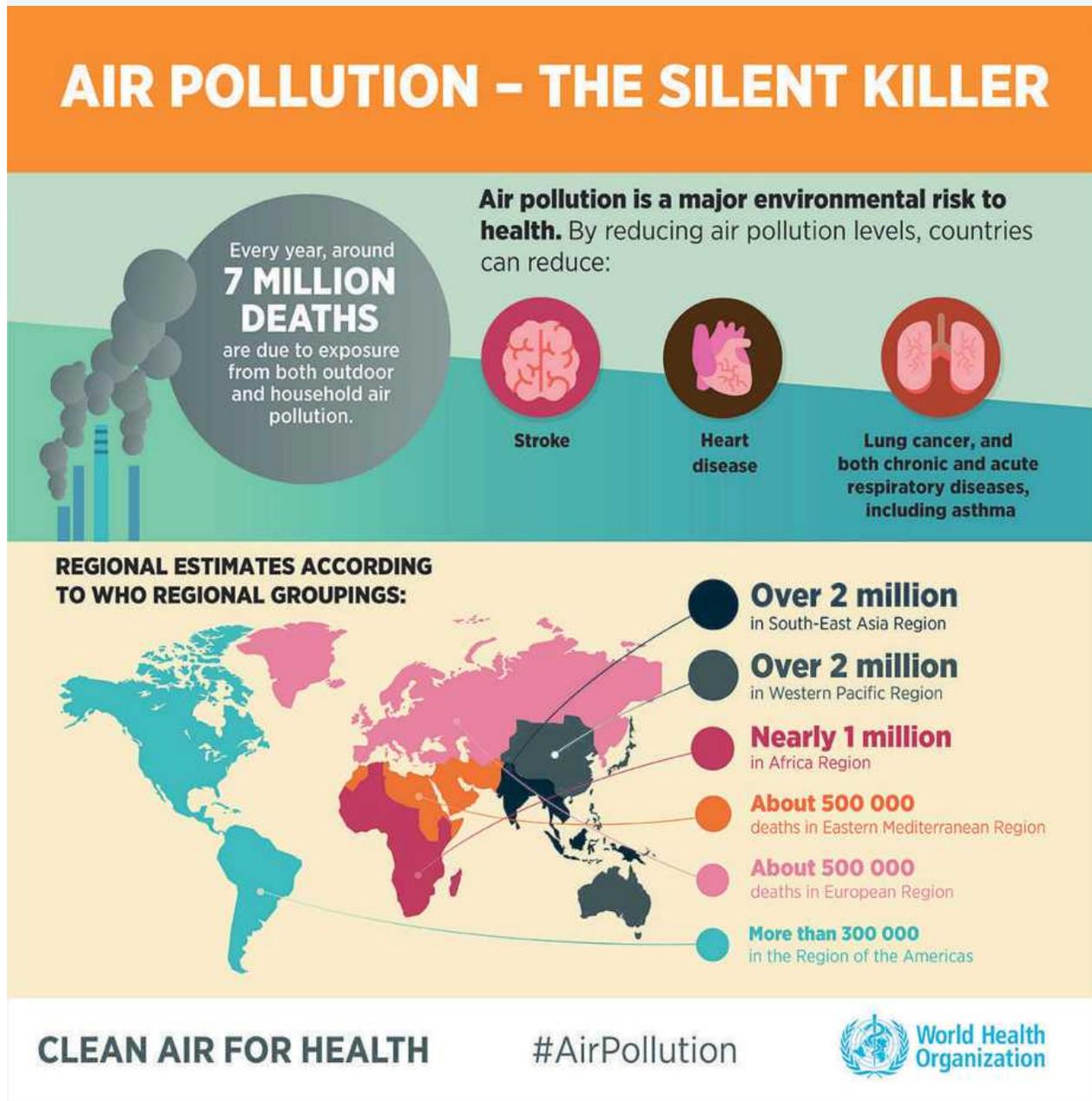
FIGURE 11.44 Illicit drug use is a major public health concern and results in considerable costs to healthcare services.



Air pollution

In 2019, 91 per cent of the world's population did not breathe clean air, and more than half of the urban population were exposed to external air pollution levels at least 2.5 times above the safety standard set by the WHO. Indoor and external air pollution resulted in around 7 million deaths, mainly from heart and lung diseases such as stroke, heart disease, respiratory infections and cancer (see **FIGURE 11.45**).

FIGURE 11.45 Air pollution is responsible for around 7 million deaths, in particular stroke, heart disease and diseases of the lungs, including lung cancer.



Indoor air pollution

Around 3 billion people, mainly in low- and middle-income countries, cook and heat their homes using solid fuels, such as wood, charcoal, coal and dung, in open fires and poorly functioning stoves. These fuels produce small soot particles that penetrate deep into the lungs. Where there is limited ventilation,

indoor smoke can contain extremely high levels of damaging fine particles. Women and children are at greatest risk as they are usually responsible for most of the cooking. Exposure to indoor air pollution almost doubles the risk for childhood pneumonia and acute lower respiratory infections. In adults, indoor air pollution is responsible for almost one-quarter of all premature deaths from stroke, 15 per cent of all deaths due to ischaemic heart disease, more than one-third of deaths from chronic obstructive pulmonary disease and 17 per cent of lung cancer deaths. The small particles also inflame the airways and lungs and impair immune functioning.

External air pollution

External air pollution is caused by energy production and traffic fumes, which release deadly air pollutants, such as black carbon and greenhouse gases. External air pollution contributes to increased morbidity and mortality. As cities become larger, the quality of air in many of them is becoming a global concern.

Reducing air pollution relies on the use of clean technologies and fuels for cooking, heating and lighting and for transport, as well as improved urban design and energy-efficient housing.

FIGURE 11.46 As cities become larger, the quality of air in many of them is becoming a global concern.



Water pollution

Contamination of drinking water and soil, mainly through poor sanitation, is responsible for an estimated 871 000 deaths, half of which occur in Africa. Unsafe water, sanitation and hygiene is responsible for many deaths from diarrhoeal diseases, as well as contributing to deaths from malnutrition, intestinal worm infections and schistosomiasis. As global access to clean water and sanitation increases, deaths resulting from these diseases are declining.

Reducing deaths and illness from environmental pollution

Reducing the level of environmental pollution is a challenge for all countries. Its success relies on decreasing the world's reliance on fossil fuels and increasing access to clean fuels and efficient technologies. Reducing vehicle emissions by investing in rapid transit systems that can move large numbers of people in cities will reduce reliance on cars and decrease air pollution. Tobacco smoke-free legislation is also effective in reducing exposure to second-hand tobacco smoke.

Governments need to provide incentives for the use of clean energy and ensure that environmental considerations are included in decisions made by the transport, waste management and industry sectors, as well as implementing rigorous monitoring of air pollution levels. Increasing access to safe water and adequate sanitation and promoting hand washing would further reduce deaths from diarrhoeal diseases.

11.6 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

11.6 Quick quiz



11.6 Exercise

11.6 Exam questions

Select your pathway

■ LEVEL 1

1, 5, 6, 7, 8

■ LEVEL 2

2, 3, 4, 9

■ LEVEL 3

10, 11, 12

Test your knowledge

1. What is meant by non-communicable diseases?
2. What are the four major risk factors that account for most of the burden of disease associated with non-communicable diseases worldwide?
3. Outline three ways that premature mortality from non-communicable diseases could be reduced globally.
4. Why do those suffering from mental disorders often experience higher rates of morbidity and mortality?
5. How can mental health and wellbeing be improved?
6. What factors are responsible for road traffic accidents?
7. Which type of environmental contamination is responsible for the largest burden of disease worldwide?
8. What diseases can be attributed to environmental contamination?

Apply your knowledge

9. Refer to **FIGURE 11.35** and identify two regions where the prevalence of overweight in children and in adults has increased the most between 2005 and 2019.
10. Using the information in **FIGURE 11.36**, explain why these trends are a significant issue for low- and upper-middle-income countries.
11. Reducing road traffic accidents requires a coordinated approach. Discuss.
12. Explain how reducing drug and alcohol misuse could positively affect three non-communicable diseases that are part of SDG 3.

11.6 Quick quiz



11.6 Exercise

11.6 Exam questions

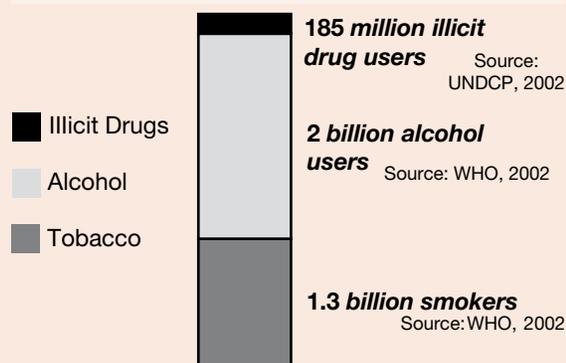
Question 1 (1 mark)

Outline why drug, tobacco and alcohol abuse is included in Goal 3 — Good health and wellbeing.

Question 2 (2 marks)

Identify the key feature of Sustainable Development Goal 3 that is reflected in the data below. **Justify** why it has been included as a key feature of SDG 3.

World extent of psychoactive substance use



Question 3 (3 marks)

Identify three non-communicable diseases.

Question 4 (2 marks)

Explain why most mental disorders in low- and middle-income countries go undiagnosed and untreated.

Question 5 (2 marks)

Explain what has led to the increase in non-communicable disease.

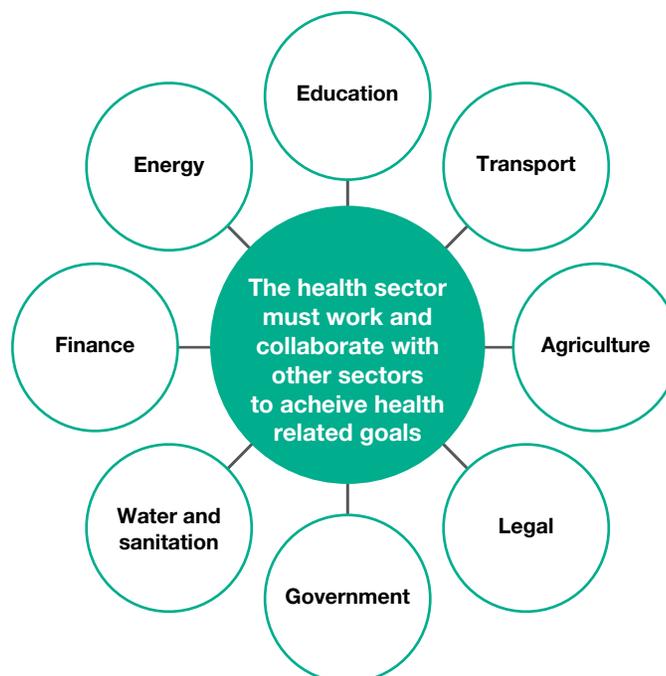
More exam questions are available in your learnON title.

11.7 The relationships between SDG 3 and SDG 1

KEY CONCEPT Understanding the relationships between SDG 3 and SDG 1: No poverty

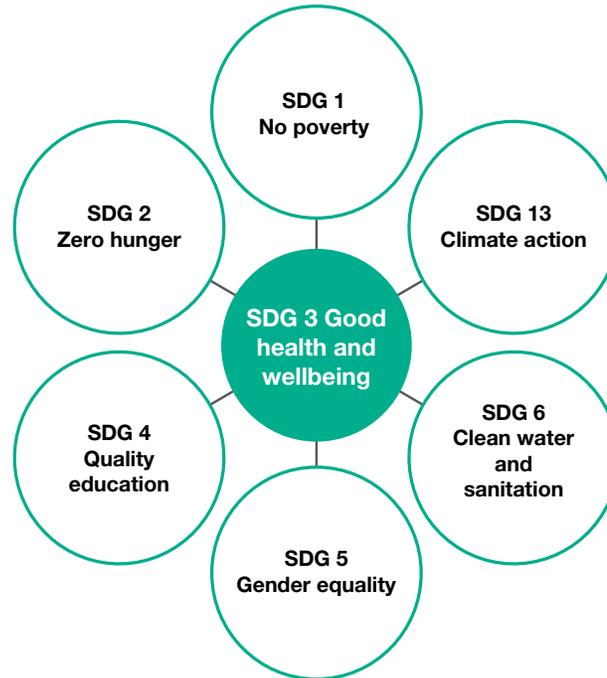
SDG 3: Good health and wellbeing can be explored as a single goal but, as you saw previously in this topic, the SDGs are interconnected and indivisible. It is therefore important to consider how the achievement of SDG 3 is both dependent upon and underpins other SDGs. Without good health and wellbeing, achieving many of the SDGs will be difficult. In a similar way, the achievement of SDG 3 is dependent upon the achievement of other SDGs. The social model of health recognises that health and wellbeing is determined by a range of economic, sociocultural and environmental conditions and, as such, good health and wellbeing is connected to issues such as poverty, good nutrition, gender equality, education, access to safe water and sanitation, and climate change. The social model of health also emphasises the importance of intersectoral collaboration. Political decisions and policies in the non-health sectors such as water and sanitation, food and agriculture, education, urban planning, transport and social protection are all connected to the achievement of Goal 3: Good health and wellbeing.

FIGURE 11.47 A range of sectors must work together to achieve health-related goals and improve health and wellbeing and human development globally.



The next few subtopics will focus on the relationship between SDG 3: Good health and wellbeing and SDGs 1, 2, 4, 5, 6 and 13 (see **FIGURE 11.48**) and how the achievement of SDG 3 is dependent upon collaborative approaches across many sectors.

FIGURE 11.48 The achievement of SDG 3 is interconnected with the achievement of other Sustainable Development Goals.



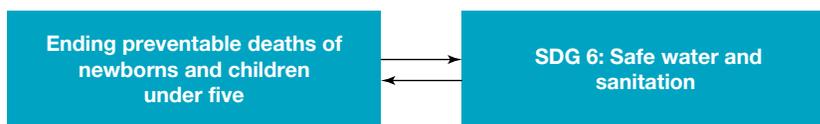
on Resources

 **Teacher-led video** Interrelationships between the Sustainable Development Goals (SDGs) (tlvd-0257)

EXAM TIP

When showing the relationship between actions taken to achieve SDG 3 and actions taken to achieve other SDGs, it is important that you are familiar with the other SDGs so you can show how they are interdependent.

For example:



The following provides an example of this:

Actions taken to end preventable deaths of newborns and children under five will not be successful unless actions are taken to address SDG 6: Safe water and sanitation. One of the major causes of deaths in newborns and children under five is dehydration due to diarrhoea caused by drinking contaminated water. Therefore, achieving the targets for SDG 3 is dependent upon actions taken to achieve the targets included in SDG 6.

FIGURE 11.49 SDG 1: No poverty and SDG 3 are interconnected.



Microfinance small, low-cost financial services for poor people that involve low-interest loans to develop small businesses



NO POVERTY: END POVERTY IN ALL ITS FORMS EVERYWHERE

Goal 1 seeks to remove poverty and inequality within and among nations. The aim is to end poverty in all its forms by 2030 and includes:

- eradicating extreme poverty currently measured as people living on less than US\$1.90 a day
- reducing the proportion of men, women and children living in poverty by half
- implementing social protection systems
- ensuring equal rights and access to essential resources, services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including **microfinance**
- building the resilience of those in vulnerable situations and reducing exposure to environmental disasters that result in poverty.

11.7.1 The meaning of SDG 1

SDG 1 aims to end poverty in all its forms by 2030. The World Bank defines extreme poverty as living on less than US\$1.90 a day. Poverty is a major cause of ill health and ill health is a major cause of poverty. When individuals and families are poor, they can't afford to purchase food, clean water, clothing, shelter and healthcare. They also struggle to afford to educate themselves and their children, are less able to find and remain in a job, and to access services that would help them escape poverty. Those who are poor are also more vulnerable to air and water pollution and other hazards such as landslides, drought and flooding, all of which carry physical and mental health and wellbeing risks. Without the necessary resources, people are unable to access medical care and protect their children through vaccination. Poverty, therefore, is the main factor contributing to low levels of childhood immunisation, low levels of literacy and high death rates from infectious diseases such as tuberculosis, measles, whooping cough (pertussis), cholera, malaria and

FIGURE 11.50 In many countries, women are often poor due to discrimination.



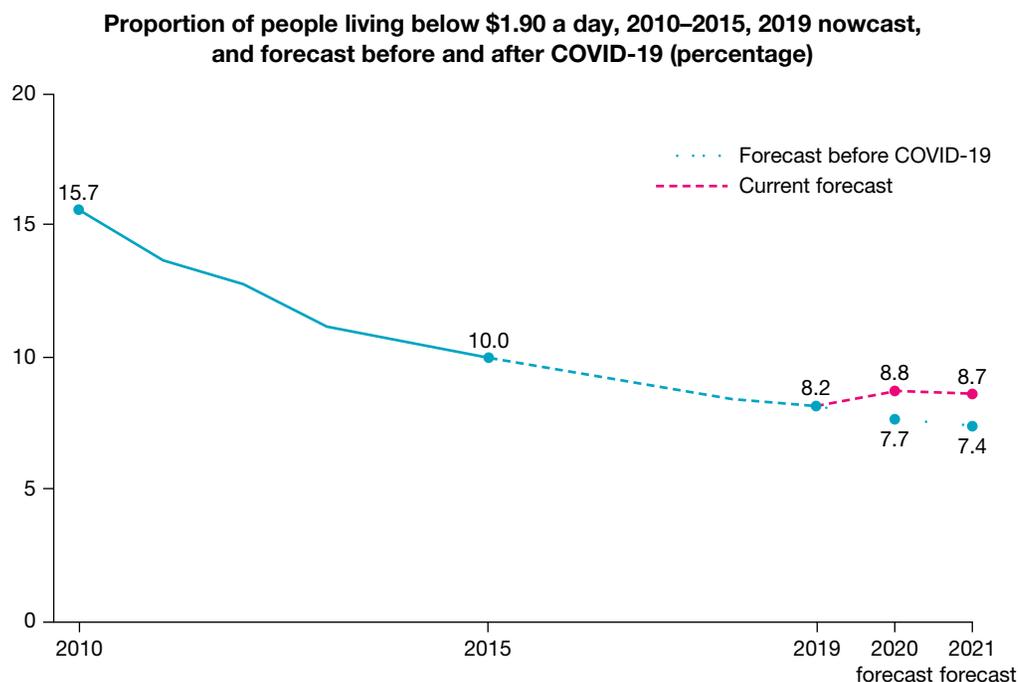
tetanus. Children born into poverty are almost twice as likely to die before the age of five compared to children born to wealthier families.

Effects on health and wellbeing and human development

Poverty can be caused by more than a lack of income and resources. It can arise due to discrimination and social exclusion. In many countries, women, youth, the elderly, migrants and those with a disability are often poor because of discrimination. Women are more likely than men to live in poverty due to less access to paid work, fewer educational opportunities, a lack of rights in relation to property ownership and inheritance, and a lack of access to natural resources, new technologies and finance. This has an impact on mental and spiritual health and wellbeing and affects human development by reducing people's standard of living as well as leaving them politically and economically vulnerable. Women often lack opportunities to participate in making decisions that affect their lives and those of their community. This also reduces spiritual health and wellbeing.

Globally, the proportion of people living in extreme poverty has reduced since 2010, but in 2019 there were still 8.2 per cent of the world's population struggling to afford their most basic human needs (see **FIGURE 11.51**). Poverty not only affects those living in low- and middle-income countries, but also people in high-income countries. There are currently 30 million children living in poverty in high-income countries. The health and wellbeing and human development of these people is directly affected by poverty. COVID-19 is expected to result in an additional 71 million people being pushed into extreme poverty in 2020 (see **FIGURE 11.51**).

FIGURE 11.51 Global number of extreme poor



Source: <https://unstats.un.org/sdgs/report/2020/Goal-01/>

11.7.2 Links between SDG 1 and SDG 3

The governments of poor countries often do not invest resources to provide public health and wellbeing services, such as safe water and sanitation, health promotion programs, universal health coverage, education and social security benefits, all of which affect people's ability to enjoy good health and wellbeing. The target of providing universal health coverage as part of SDG 3 helps to end poverty by ensuring all people have access to essential medicines, vaccines and healthcare services at an affordable price.

Natural disasters and outbreaks of disease can result in people, communities and countries being plunged into poverty. Collaborative approaches are needed to end poverty and achieve good health and wellbeing. Countries must have strategies in place to help reduce risks from natural disasters and outbreaks of disease and minimise the impact of events and ensure people do not experience poverty because of an event. This has been evident in the COVID-19 pandemic where many countries, particularly low-income countries, do not have the resources or infrastructure needed to protect people from the disease. As a result, many people have been plunged back into poverty. **Social protection measures** are important to ensure that, regardless of economic situation, all people will have access to high quality healthcare at no cost, will be able to care for their children and provide food, shelter and education, and in the event of unemployment, illness, pregnancy, disability or old age, will have income security.

Good health and wellbeing is a major contributor to human development, economic growth and poverty reduction. Many of the economic, sociocultural and environmental actions that need to be taken to achieve both goals require collaboration across different sectors, such as welfare, finance, legal, health, water and sanitation, and industry. For example, implementing social protection measures has been successful in reducing the levels of poverty in many countries such as Brazil and Argentina.

FIGURE 11.52 Outbreaks of disease such as COVID-19 can result in people, communities and countries being plunged into poverty.



Social protection measures measures put in place to prevent individuals and families from suffering from poverty because of a crisis or another unexpected event. Measures include the provision of healthcare, and income security for children, those who become sick or disabled and the elderly.

11.7 Activity

Access the **Neglected tropical diseases** weblink and worksheet in the Resources tab and then complete the worksheet that demonstrates the interrelationships between good health and wellbeing and poverty.

on Resources

-  **Digital document** Neglected tropical diseases worksheet (doc-32231)
-  **Weblink** Neglected tropical diseases

11.7 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

11.7 Quick quiz

on

11.7 Exercise

11.7 Exam questions

Select your pathway

■ LEVEL 1

1, 2

■ LEVEL 2

3, 4

■ LEVEL 3

5, 6, 7, 8

Test your knowledge

1. Define 'extreme poverty'.
2. Apart from income, what are two other causes of poverty and who is most at risk?

3. What are social protection measures and why are they important?
4. How does poverty affect health and wellbeing and human development?
5. Why would a focus of Goal 1 include strengthening community resilience and reducing exposure to environmental disasters?

Apply your knowledge

6. Why are children born into poverty almost twice as likely to die before the age of five compared to those born into wealthier families?
7. Refer to **FIGURE 11.51** and discuss:
 - a. the likelihood of meeting the aim to eradicate extreme poverty by 2030
 - b. the impact of COVID-19 on the achievement of this aim.
8. Outline four examples that show how SDG 1 and SDG 3 are related and require collaboration across sectors to achieve both goals.

11.7 Quick quiz

on

11.7 Exercise

11.7 Exam questions

Question 1 (4 marks)

Source: VCE 2017, *Health and Human Development Exam*, Q.10.b; © VCAA

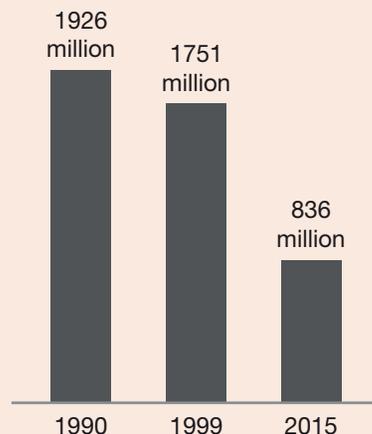
'Globally, the number of people living in extreme poverty has declined by more than half, falling from 1.9 billion in 1990 to 836 million in 2015.'

Source: United Nations, 'The Millennium Development Goals Report 2015', United Nations, New York, 2015, p. 4

Discuss two ways in which this decline in global poverty could have contributed to the reduction in maternal deaths between 1990 and 2015.

Question 2 (2 marks)

The below figure shows the global number of extreme poor, over time.



What can be concluded from this data about the global number of extreme poor?

Question 3 (1 mark)

What is Sustainable Development Goal 1 – No poverty about?

Question 4 (3 marks)

Explain how SDG 3 – Ensure healthy lives and promote wellbeing for all ages assists in the achievement of SDG 1 – No poverty.

Question 5 (3 marks)

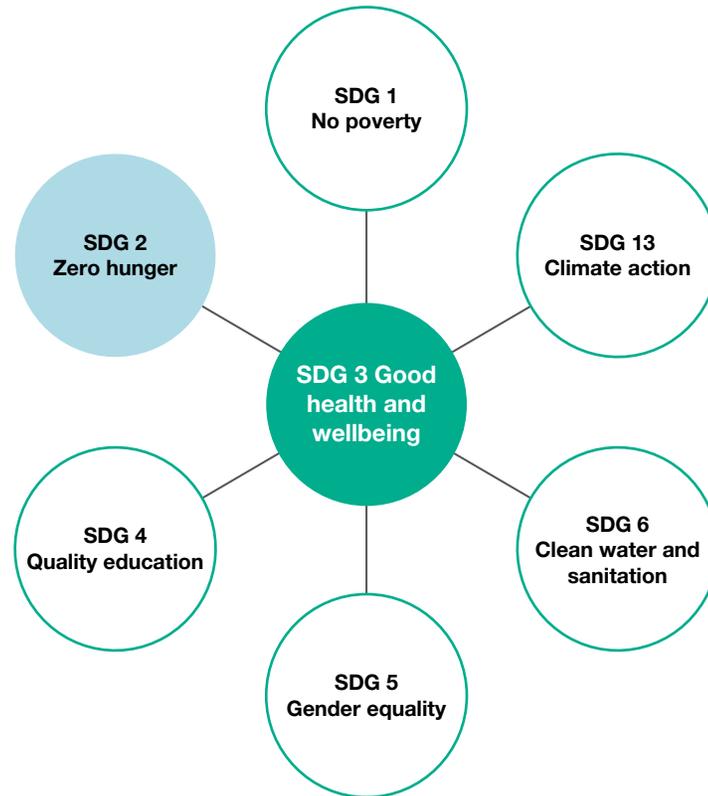
Explain how the relationship between SDG 3 – Ensure healthy lives and promote wellbeing for all ages and SDG 1 – No poverty can promote human development.

More exam questions are available in your learnON title.

11.8 The relationships between SDG 3 and SDG 2

KEY CONCEPT Understanding the relationships between SDG 3 and SDG 2: Zero hunger

FIGURE 11.53 SDG 2: Zero hunger and SDG 3 are interconnected.



ZERO HUNGER: END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION, AND PROMOTE SUSTAINABLE AGRICULTURE

Goal 2 aims to end all forms of hunger and malnutrition, making sure all people — especially children and the more vulnerable — have access to nutritious food all year round by promoting **sustainable agriculture**. By 2030 the aim of this goal is to:

- end hunger and ensure access for all people, in particular the poor and people in vulnerable situations, such as infants, to safe, nutritious and sufficient food
- end all forms of malnutrition
- double agricultural productivity and incomes of small-scale food producers, and ensure equal access to land and resources
- ensure sustainable food production systems and resilient agricultural practices that increase productivity and production, maintain ecosystems, and adapt to climate change and extreme weather, are implemented
- maintain the genetic diversity of seeds, plants and animals and ensure access for all
- increase investment in agriculture infrastructure, research and technology
- address trade restrictions that disadvantage farmers, particularly in low- and middle-income countries
- adopt measures to ensure the proper functioning of global food commodity markets and ensure access to market information.

Sustainable agriculture the capacity of agricultural practices over time to provide sufficient food in ways that are economically efficient and profitable, socially responsible and environmentally sound

11.8.1 The meaning of SDG 2

SDG 2 aims to end all forms of hunger and malnutrition by ensuring that everyone has access to nutritious food. This is referred to as **food security**. Hunger is defined as the continuing lack of food needed for an active and healthy life. Having access to food is essential for achieving good health and wellbeing and for improving human development. Food scarcity and hunger results in malnutrition and ill health. Being malnourished can lead to an inadequate intake of micronutrients such as iron, vitamin A, iodine and zinc.

Those most at risk of the effects of malnutrition are children, particularly up until five years of age, pregnant and lactating women, and the elderly. Globally, there are 144 million children whose growth is stunted due to being undernourished (see **FIGURE 11.55**).

FIGURE 11.54 141.3 million children have stunted growth due to lack of food. Pregnant and lactating women and the elderly are also at risk.

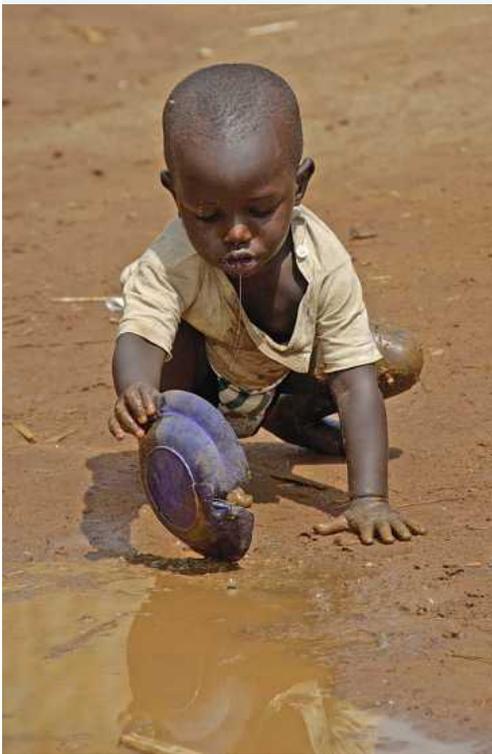


FIGURE 11.55 144 million children experienced stunted growth due to malnutrition and a further 47 million children experienced wasting as a result of a lack of food and nutrition.

STUNTING AND WASTING

AMONG CHILDREN ARE

LIKELY TO WORSEN



21.3% (144 MILLION)

OF CHILDREN
UNDER 5
ARE STUNTED



6.9% (47 MILLION)

OF CHILDREN
UNDER 5
ARE AFFECTED
BY WASTING
(2019)

Source: <https://unstats.un.org/sdgs/report/2020/overview/>

Impact of hunger on health and wellbeing and human development

Hunger and malnutrition is the biggest contributor to child mortality, causing 45 per cent of the 6.3 million preventable deaths in children under five. Hunger weakens the immune system and children become too weak to fight off disease. Children suffering from hunger have increased frequency and severity of diseases such as pneumonia, measles, malaria and diarrhoea, and are at greater risk of dying from these conditions. Hunger is an underlying cause in 61 per cent of deaths from diarrhoea, 57 per cent from malaria, 52 per cent from pneumonia and 45 per cent from measles. Malnutrition in infants can be prevented by mothers exclusively breastfeeding their babies for the first six months.

Micronutrients, especially iron, vitamin A, and iodine are particularly important for good health and wellbeing. According to the World Health Organization, deficiencies in iron and vitamin A rank among the top ten leading causes of death and disease in low-income countries. A deficiency of iron during pregnancy can lead to maternal death and impairs children's physical and cognitive development. Iron-deficiency

Food security 'the state in which all persons obtain nutritionally adequate, culturally appropriate, safe food regularly through local non-emergency sources' (VicHealth, 2008)

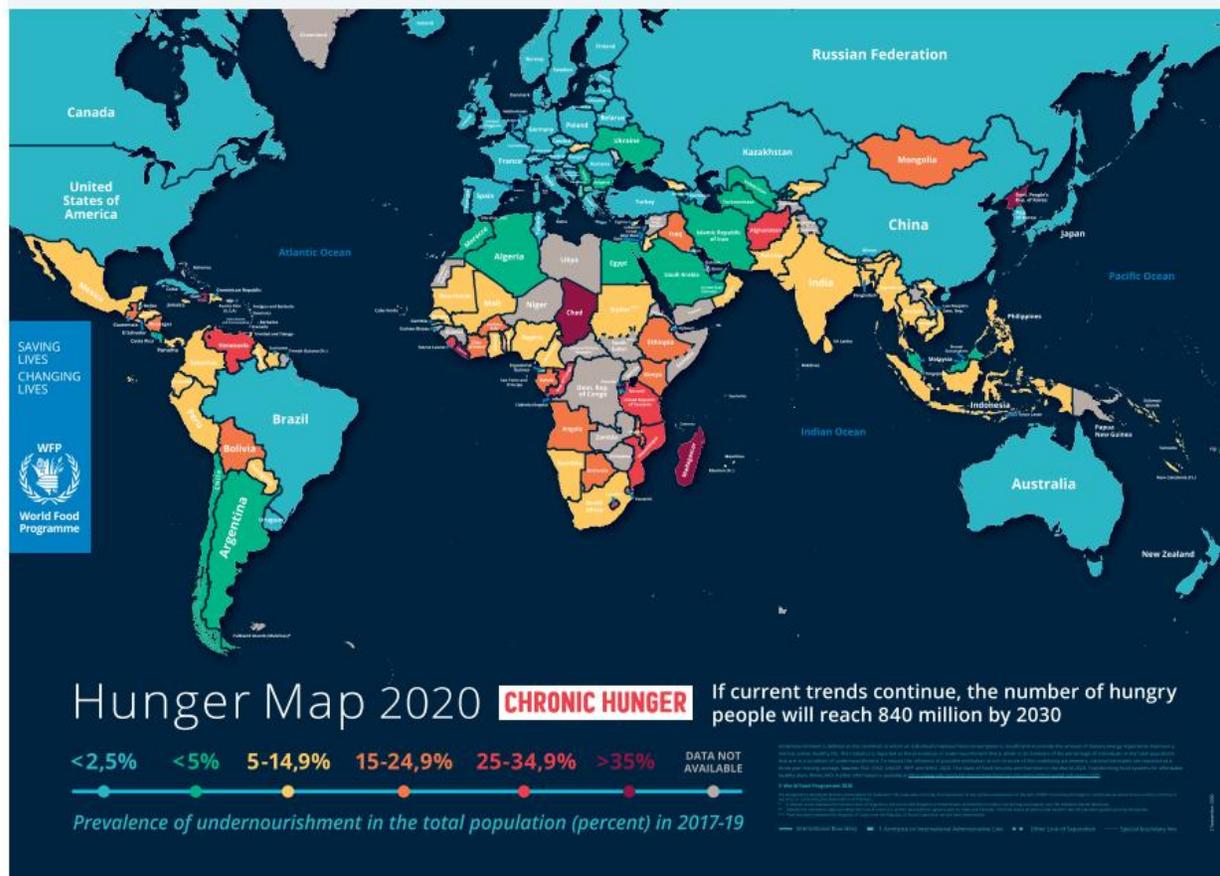
anaemia contributes to 20 per cent of all maternal deaths. Serious iodine deficiency during pregnancy can result in stillbirth, spontaneous abortion and congenital abnormalities such as cretinism, a form of mental impairment. Iodine deficiency, especially during pregnancy, affects 780 million people worldwide. Vitamin A deficiency can lead to blindness, poor immune function and reduced cell function needed for normal growth to occur. Pregnant women and children with vitamin A deficiency have a higher rate of morbidity and mortality (see **FIGURE 11.56**).

FIGURE 11.56 Effects of deficiencies in iron, iodine and vitamin A

Iron	Iodine	Vitamin A
<ul style="list-style-type: none"> Deficiency in pregnancy can lead to maternal death and impairs children's physical and cognitive development Contributes to 20 per cent of all maternal deaths 	<ul style="list-style-type: none"> Deficiency in pregnancy can result in stillbirth, spontaneous abortion and cretinism, a form of mental impairment Affects 780 million people world wide 	<ul style="list-style-type: none"> Deficiency can lead to blindness, poor immunity and reduced growth Pregnant women and children with vitamin A deficiency have higher rates of morbidity and mortality

Globally, 687 million people are undernourished and do not have enough food to lead a healthy, active life. As hunger causes poor health and wellbeing, stunted growth, low levels of energy and reductions in mental functioning, it can lead to poverty by reducing people's ability to work and learn. Extreme hunger and malnutrition are major barriers to human development. Most of the world's hungry people live in low- and middle-income countries, where 12.9 per cent of the population is undernourished (see **FIGURE 11.57**). Southern Asia faces the greatest hunger burden, with approximately 381 million undernourished people. In sub-Saharan Africa, undernourishment is estimated to affect 19.1 per cent of the population.

FIGURE 11.57 World Hunger Map



Source: World Food Programme, 2018, <https://www.wfp.org/content/2018-hunger-map>

Rates of undernourishment increased from 628.9 million in 2014 to 687 million in 2019 (FIGURE 11.58). (NB: In 2019 figures for undernourishment were revised down due to improved estimates from all countries but in particular, China.)

As you have seen, hunger and malnutrition have a significant impact on physical health and wellbeing. When people are malnourished and suffer ill health, human development is impaired. Without food, people are unable to live a long and healthy life and pursue their interests. They will be unable to achieve a decent standard of living and lack the basic human right of having adequate food. Children who are hungry and malnourished will not be able to attend school, and will not have the opportunity to develop the skills and knowledge needed to get decent work and to participate in the social and political lives of their communities.

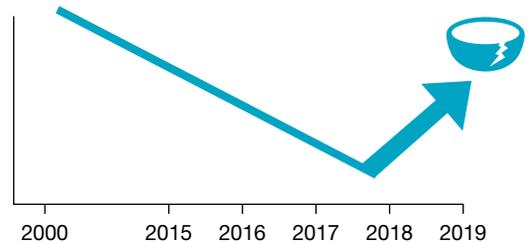
11.8.2 Links between SDG 2 and SDG 3

Actions designed to achieve zero hunger will also help achieve SDG 3. Maternal and child health and wellbeing will be improved with access to nutritious food, contributing to reductions in under-five and maternal mortality rates. With improved nutrition, children will be at reduced risk of contracting and dying from communicable diseases such as malaria and hepatitis, and vaccine-preventable diseases such as measles and tuberculosis. Well-nourished mothers are more likely to give birth to healthier babies and to experience good health and wellbeing during pregnancy and childbirth. A well-nourished population is a healthier one, which may help reduce the demand for health services and corresponding costs to the healthcare system.

Achieving good health and wellbeing will also contribute to the achievement of zero hunger. Adults who enjoy good health and wellbeing are able to work and produce their own food for the family or to work and earn an income. Earning an income means that families can purchase healthy food to eat, which helps reduce the level of hunger.

FIGURE 11.58 The rates of world hunger increased in 2019 compared to 2014 with conflict, drought and environmental disasters linked to climate change being the key reasons.

World hunger is on the rise again:
687 million people were undernourished in 2019, up from 628.9 million in 2014.



Note: *In 2019 updates for many countries made it possible to estimate with greater accuracy. As a result, whilst there appears to be a downward shift in number, the numbers have in fact continued to increase.

Source: <https://unstats.un.org/sdgs/report/2020/overview/>

FIGURE 11.59 Well-nourished mothers are more likely to experience good health and wellbeing during pregnancy and give birth to healthier babies.



CASE STUDY

Three smart ways innovation is helping reduce food loss and waste

Tomatoes rotting on vines because there is no one to pick them. Milk curdling in jars because there are no markets to bring it to. Fruits decaying on shelves because customers don't have access to produce like before. Lost resources, wasted food. The restrictions in movement and quarantine measures caused by the COVID-19 pandemic have increased the levels of food loss and waste the world over.

As the pandemic continues to put people's food security and nutrition at risk in many countries and hurt the livelihoods of small producers, we are called to re-evaluate our food systems.

One thing is clear: in this time of crisis, there is no room for food loss and waste!

Fortunately, new and innovative technology is being developed every day to improve the way our food is produced, distributed and consumed, transforming our food systems for the better. Here are just a few examples:

1. Apps to maximise the sale or donation of food

Smartphones are increasingly widespread, and apps are a simple and easy way to reach large portions of the global population. During the pandemic, the popularity of apps to solve food loss and waste has increased. Several countries also began to develop apps to facilitate the logistics, transport and e-commerce of perishable foods.

Too Good to Go is one app that gives shops and restaurants in many cities a platform to sell their surplus food at reduced prices at the end of the day. For example, in Rome, app users can find food offered at discounted prices by a neighbourhood market, a large supermarket chain and popular city eateries.

The Feeding India app, instead, focuses on donations of food for those in need. Restaurants and individuals can sign up on the app to donate food, which is then collected and distributed by this non-profit's network of more than 4 500 volunteers. These regular feeding programmes run in more than 45 Indian cities and have served over 4.8 million meals so far.

In Kenya, the Twiga Foods platform connects 3 000 food outlets a day with fresh produce through a network of 17 000 farmers and 8 000 vendors, allowing restaurants to buy only what they need and farmers to deliver more efficiently. The company has reduced typical post-harvest losses in Kenya from 30 percent to 4 percent for produce brought to markets on the Twiga network.

2. New technology through 3D product design

FAO [Food and Agricultural Organization] has worked on a number of innovative technologies to increase the efficiency of post-harvest handling and food processing. One of these new solutions harnesses 3D printing technology. FAO offers online, open-source 3D designs of innovative equipment (equipment that the Organization itself uses in country projects) for download and use.

One of FAO's most popular downloads is a multipurpose wooden crate for the transport, handling, storage and retail display of produce, reducing the need for the produce to be transferred from one box to another. The innovative design uses basic wooden materials, but as a result much less food is ruined along the value chain. This design has had 13 000 downloads in under two years and is used widely in Sudan and Thailand.

3. Simple equipment in an innovative way

Being innovative is not all about new technology — it can also mean using simple techniques in a new way. Many FAO projects reduce food losses at the harvesting stage just by challenging traditional techniques and introducing new methods.

For example, in many Asian countries a large proportion of produce is lost during transportation. One FAO project in three South Asian countries found that post-harvest losses ranged between 20 and 50 percent for fruits and vegetables. Much of this is due to packaging that fails to protect the produce.

In Bangladesh, tomatoes are traditionally transported from farm to market in large mesh sacks. Many of the tomatoes are bruised or damaged when they arrive. An FAO project in the region proposed using large crates instead, which substantially reduced losses and allowed farmers to sell a larger proportion of their produce. FAO provided groups of smallholder farmers with crates to get them started and trained them on food-handling best practices, including in transport. The difference in the quality and shelf-life of the produce was so noticeable that in Sri Lanka, one supermarket now provides crates to farmers to guarantee the quality of their produce.

Simple but effective changes like this can dramatically improve handling in the supply chain and have a huge impact on the income and food security of local farmers. They also contribute to improving the quality and shelf life food for consumers.

For many people on the planet, food is a given. But for the millions of people who are chronically hungry, food is not a guarantee. Reducing loss and waste means respecting food and the natural resources, effort and investment that has gone into it. When we think about food's backstory, it is easier to see what our food really represents and how precious it really is.

Source: Food and Agriculture Organization, <http://www.fao.org/fao-stories/article/en/c/1309567/>, 28/09/2020



CASE STUDY REVIEW

1. Why is it important to address the levels of food loss and waste?
2. How has COVID-19 impacted the level of food loss and waste?
3. Explain two ways that smartphone apps can be used to reduce food loss and waste.
4. Why is packaging an important consideration in reducing food loss and waste?
5. Outline two examples of how the packaging and transport of food has been improved using either 3D printing design or simple equipment.

11.8 Activities

1. Access the **Undernutrition** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **End malnutrition** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

-  **Digital documents** Undernutrition worksheet (doc-32232)
End malnutrition worksheet (doc-32227)
-  **Weblinks** Undernutrition
End malnutrition

11.8 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

11.8 Quick quiz



11.8 Exercise

11.8 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3

■ LEVEL 2

4, 5

■ LEVEL 3

6, 7

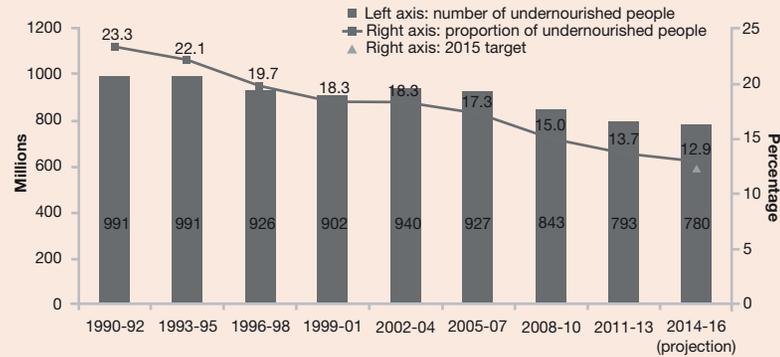
Test your knowledge

1. What is hunger?
2. What does food security mean?
3. Which micronutrients are of concern when people are undernourished?
4. How do hunger and malnutrition affect human development?

Apply your knowledge

5. How are poverty and hunger interrelated?
6. Outline the relationship between hunger, immunity and disease.
7. Justify why collaborative action between SDG 2 and SDG 3 is necessary to promote health and wellbeing and human development.

Question 1 (1 mark)



Using the graph, **identify** the proportion of people who are undernourished in 2014–16.

Question 2 (1 mark)

What is the aim of SDG 2 – Zero hunger?

Question 3 (3 marks)

Explain how the relationship between SDG 3 – Ensure healthy lives and promote wellbeing for all ages and SDG 2 – Zero hunger can promote human development.

Question 4 (3 marks)

Explain how SDG 3 – Good health and wellbeing assists in the achievement of SDG 2 – Zero hunger.

Question 5 (3 marks)

Explain how SDG 2 – Zero hunger assists in the achievement of SDG 3 – Good health and wellbeing.

More exam questions are available in your learnON title.

11.9 The relationships between SDG 3 and SDG 4

KEY CONCEPT Understanding the relationships between SDG 3 and SDG 4: Quality education



QUALITY EDUCATION: ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

Goal 4 addresses the need for girls and boys to have equal access to high quality education at all levels, from pre-primary through to tertiary, and to develop the vocational skills needed for employment. By 2030 the aim is to:

- ensure all children complete free, equitable and quality primary and secondary education
- ensure all children have access to quality early childhood development, care and pre-primary education
- ensure all adults have equal access to affordable and quality technical, vocational and tertiary education
- increase the number of youth and adults who have relevant skills for employment
- eliminate all disparities in education and vocational training, including people with disabilities, indigenous people and vulnerable children
- ensure all youth and adults have adequate literacy and numeracy skills
- ensure all learners are taught curriculum that promotes sustainable development
- build and upgrade education facilities
- expand the number of scholarships available to low- and middle-income countries for essential skills training
- increase the number of qualified teachers.

FIGURE 11.60 SDG 4: Quality education and SDG 3 are interconnected.



11.9.1 The meaning of SDG 4

SDG 4 addresses the importance of girls and boys having equal access to high quality education at all levels, from pre-primary (early childhood) through to tertiary, and to develop the vocational skills needed for employment. The emphasis is on the completion of 12 years of publicly funded, high-quality primary and secondary education, of which at least 9 years are compulsory. This goal also focuses on building a qualified teacher workforce and the delivery of a relevant curriculum to ensure the educational experience is productive and helps build the necessary knowledge and skills.

FIGURE 11.61 Students being read to in a pre-school.



Education and girls

Girls are less likely to enrol in or complete primary and secondary education. Factors such as drought, food shortages, armed conflict, poverty, child labour and HIV/AIDS contribute to low school enrolment and high drop-out rates for both boys and girls; however, they tend to have a greater impact on girls. Lack of access to water and sanitation means girls must spend a significant proportion of their day fetching water. This means they are not able to attend school. The lack of sanitation facilities also has an impact on girls' enrolment at school. Families are less likely to send their female children to school if separate and private toileting facilities are not provided for girls. For families on limited incomes, male children are often provided with educational opportunities before their female siblings.

Progress in achieving quality education

There has been progress in achieving universal primary education. At the global level, the participation rate in early childhood and primary education was 85 per cent in 2019, up from 70 per cent in 2000, however, there is a lot of variation across countries and regions. The lowest rates are in sub-Saharan Africa (41 per cent) and northern Africa and western Asia (52 per cent).

Youth literacy rates were estimated to be 93 per cent for young men and 90 per cent for young women in 2018. However, there remained an estimated 100 million illiterate youth and 124 million children and youth not enrolled in school. In addition, 757 million adults, two-thirds of whom were women, could not read or write. Children from the poorest households are still four times less likely to be enrolled in school than those from the wealthier households. Differences between rural and urban areas also remain high.

While more students are attending school, 617 million (58 per cent) children and adolescents of primary and lower-secondary level are not meeting minimum standards in reading and mathematics.

During the COVID-19 pandemic, many schools offered remote learning to students through virtual classrooms to reduce the impact of school closures. While this was an option for some, it was out of reach for many. Lack of access to computers and the internet at home, as well as a low level of computer-related skills, put many already marginalised students at a further disadvantage. The UN reported remote learning remained out of reach for at least 500 million students around the world.

In 2018, an estimated 86 per cent of primary school teachers worldwide were trained; the proportion was only 72 per cent for southern Asia and 64 per cent for sub-Saharan Africa (see **FIGURE 11.63**).

FIGURE 11.62 It is important that youth (those aged 15–24) be provided with the skills necessary to enable them to gain employment. However, there were 100 million illiterate youth in 2018.

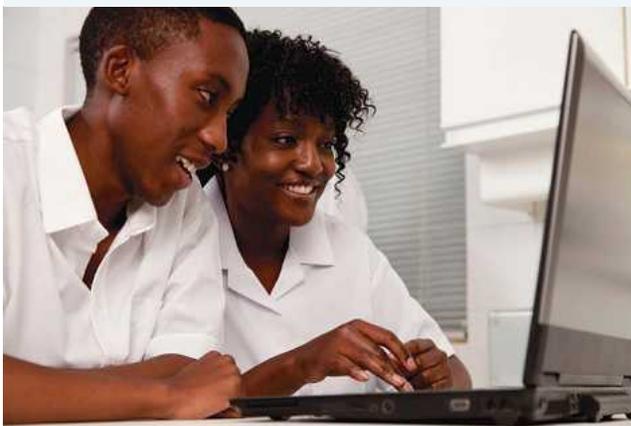
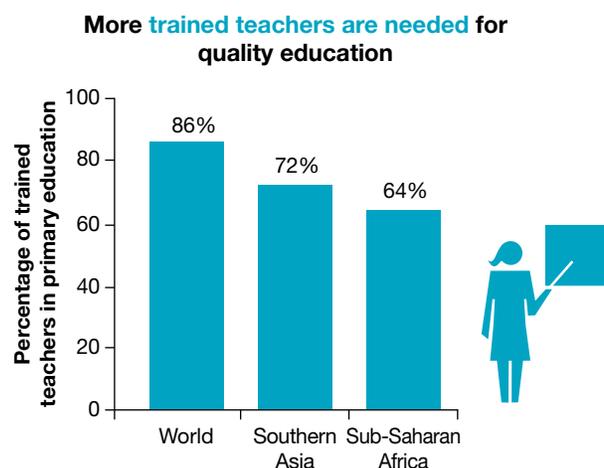


FIGURE 11.63 Improving literacy and numeracy and developing vocational skills is dependent upon having qualified and skilled teachers.



Source: <https://unstats.un.org/sdgs/report/2020/overview/>

A challenge for low-income countries is providing schools that have basic infrastructure. In 2018, only 34 per cent of primary schools in low-income countries had electricity and 38 per cent were equipped with basic handwashing facilities critical for preventing diseases such as COVID-19.

11.9.2 Links between SDG 4 and SDG 3

Actions to achieve SDG 4 will also help achieve SDG 3, hence collaborative action is needed between the health and education sectors. Quality education is the foundation for improving people's lives and achieving good health and wellbeing. On the other hand, good health and wellbeing is essential to achieve high levels of educational attainment for all men, women and children and for increasing opportunities for employment and income. When people experience poor levels of health and wellbeing, opportunities to attend school are reduced. This reduces opportunities for employment and to receive an income. An income provides the capacity to purchase nutritious food, shelter, clean water, healthcare and education, all of which contribute to good health and wellbeing.

FIGURE 11.64 Educated mothers have fewer and healthier children and their children have a 40 per cent higher survival rate.



An educated and skilled workforce brings about greater economic growth. Economic growth provides more resources for governments to invest in universal health coverage, essential medicines and social protection measures. People are able to access preventative and curative health services, which helps reduce morbidity and mortality from communicable and non-communicable diseases. Educating women and girls also results in falling fertility rates and stable population growth. A mother's income has 20 times more impact on child survival than a father's income. Educated mothers have fewer and healthier children, they are 50 per cent more likely to immunise their children than uneducated mothers, and their children have a 40 per cent higher survival rate. They are also twice as likely to send their own children to school as mothers without an education.

Quality education is important for promoting human development and, as you saw in topic 9, education is one of the factors used to determine the Human Development Index.

Impact of education on health and wellbeing and human development

Education provides opportunities for employment, which means families can purchase nutritious food, water, clothing and shelter as well as being able to afford healthcare when needed. Educated girls also marry later, are less likely to experience sexual violence, and are more likely to be able to protect themselves from HIV/AIDS and other diseases, all of which contribute to improved physical health and wellbeing. Improved physical health and wellbeing brings opportunities to develop relationships with others, which improves social health and wellbeing. People are more likely to be happier, feel more empowered and confident, which promotes mental health and wellbeing. Education and employment can provide a sense of purpose and belonging, which promotes spiritual health and wellbeing. Improving education, particularly for girls, promotes human development. Education increases knowledge and skills, which creates opportunities for employment and increases the choices that people have and enhances their capabilities. When people are more educated they are more likely to have an interest in, and participate in, decisions impacting their community. Education for girls helps ensure equity in opportunity and therefore increases the ability to make choices and to live their life according to their needs and interests.

11.9 Activity

Access the **Quality education** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital document** Quality education worksheet (doc-32233)
-  **Weblink** Quality education

11.9 Exercises

learnon

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11.9 Quick quiz 

11.9 Exercise

11.9 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3

■ LEVEL 2

4, 5, 6, 7

■ LEVEL 3

8, 9

Test your knowledge

1. What is the focus of SDG 4?
2. Why are girls less likely to enrol in and complete primary and secondary education?
3. Why are trained and qualified teachers important for the achievement of quality education?
4. How does education impact human development?
5. Why would children from poorer households be four times more likely not to be in school than those from wealthier households?
6. What progress has been made in achieving SDG 4? Use data to support your answer.
7. What percentage of children and adolescents are not meeting minimum standards in reading and mathematics and why is this important?

Apply your knowledge

8. Explain why children in rural areas are less likely to be in school than those in urban areas.
9. Explain how actions taken to achieve SDG 4 will also contribute to the achievement of SDG 3.

11.9 Quick quiz 

11.9 Exercise

11.9 Exam questions

Question 1 (2 marks)

Increasing the number of children who have access to preschool and kindergarten facilities is one aim of SDG 4 – Quality education. **Justify** why this aim is important.

Question 2 (1 mark)

Other than increasing the number of children who have access to preschool and kindergarten facilities, **name** one other aim of SDG 4 – Quality education.

Question 3 (2 marks)

Describe how achievement of SDG 4 – Quality education can promote human development.

Question 4 (3 marks)

Explain how SDG 4 – Quality education assists in the achievement of SDG 3 – Ensure healthy lives and promote wellbeing for all ages.

Question 5 (3 marks)

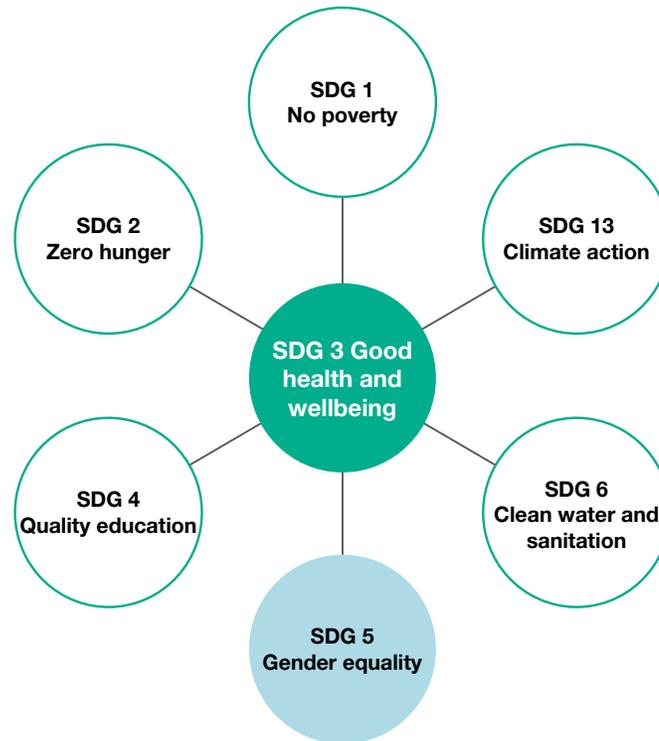
Explain how SDG 3 – Ensure healthy lives and promote wellbeing for all ages assists in the achievement of SDG 4 – Quality education.

More exam questions are available in your learnON title.

11.10 The relationships between SDG 3 and SDG 5

KEY CONCEPT Understanding the relationships between SDG 3 and SDG 5: Gender equality

FIGURE 11.65 SDG 5: Gender equality and SDG 3 are interconnected.



GENDER EQUALITY: ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

This goal seeks to end discrimination and violence against women and girls by addressing the barriers that exist to gender equality. Gender equality is not only a social issue but also an economic one. By 2030 the aim is to:

- end all forms of discrimination against all women and girls everywhere
- end all forms of violence against women and girls, including human trafficking and sexual exploitation
- eliminate harmful practices, such as child, early and forced marriage and female genital mutilation
- recognise and value unpaid domestic work
- ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
- ensure universal access to sexual and reproductive health
- ensure women have equal rights to economic resources, access to ownership and control over land and other forms of property, financial services, inheritance and natural resources
- improve the use of ICT to support equality and empower women
- adopt policies and legislation that support gender equality and empowerment of all women.

11.10.1 The meaning of SDG 5

SDG 5 aims to end discrimination and violence against women and girls by addressing the barriers that exist to gender equality. Gender equality is where women and men have the same level of power and control over all aspects of their lives. Gender equality is a basic human right yet, despite comprising half of the world's population, women and girls do not experience gender equality.

Women face discrimination in all areas of political, economic and social life. In many low- and middle-income countries women and girls are denied access to basic education and healthcare and are victims of violence and discrimination. One in three women worldwide has been subject to physical or sexual violence. Women are underrepresented

in political and economic decision-making processes and lack access to work beyond the agricultural sector, where they tend to undertake almost 80 per cent of the unpaid work. Unpaid work includes housework such as preparing meals, fetching firewood, collecting water and caring for children, the sick and elderly in the home and community. Therefore, women have less time than men for other activities, including paid work and education. Women spend approximately three times as many hours in unpaid domestic work as men.

Women earn 10 to 30 per cent less than men for the same work and women and girls are 16 per cent less likely to have access to information communication technologies, such as mobile phones and computers. Mobile phones help women feel safer and more connected, save time and enable access to key services such as mobile finances and health information. They offer a way of delivering services and have the potential to increase access to education and employment opportunities.

FIGURE 11.66 Women's access to mobile phone technology is a way of bridging the gender gap. They help women feel safer, can be used to access finances and provide access to information, education and employment.



CASE STUDY

Digital technologies can reduce the gender gap

Eighty per cent of the population in developing countries owns a mobile phone, but few of these are women. On average, women are 14 per cent less likely to own a mobile phone than men and this increases to 38 per cent in south Asia.

The gender gap is more pronounced in the use of the internet. In Africa, women are 50 per cent less likely to use the internet than men. In addition to ownership and access, lack of control over the use of the technology is an additional barrier for women. In India, it has been found that 12 per cent of women did not access the internet more often because they did not think it was appropriate, and more than 8 per cent did not access it more often because family or friends would disapprove.

However, digital technologies have the potential to reduce gender inequality in relation to employment as they can make work arrangements more flexible, can connect women to work, and generate new opportunities in online work, e-commerce, and the sharing economy. Digital technologies can also promote women's voice and agency. Social media can be an outlet for women to participate in public discussions and voice their opinions, which helps empower women and reduce the gender gap. ▶

CASE STUDY REVIEW

1. How does mobile phone ownership of women in low-income countries compare to that of men?
2. What barriers exist in relation to women accessing the internet?
3. How can digital technologies reduce the gender gap in the world?
4. Explain how digital technologies can advance women's voice and agency.

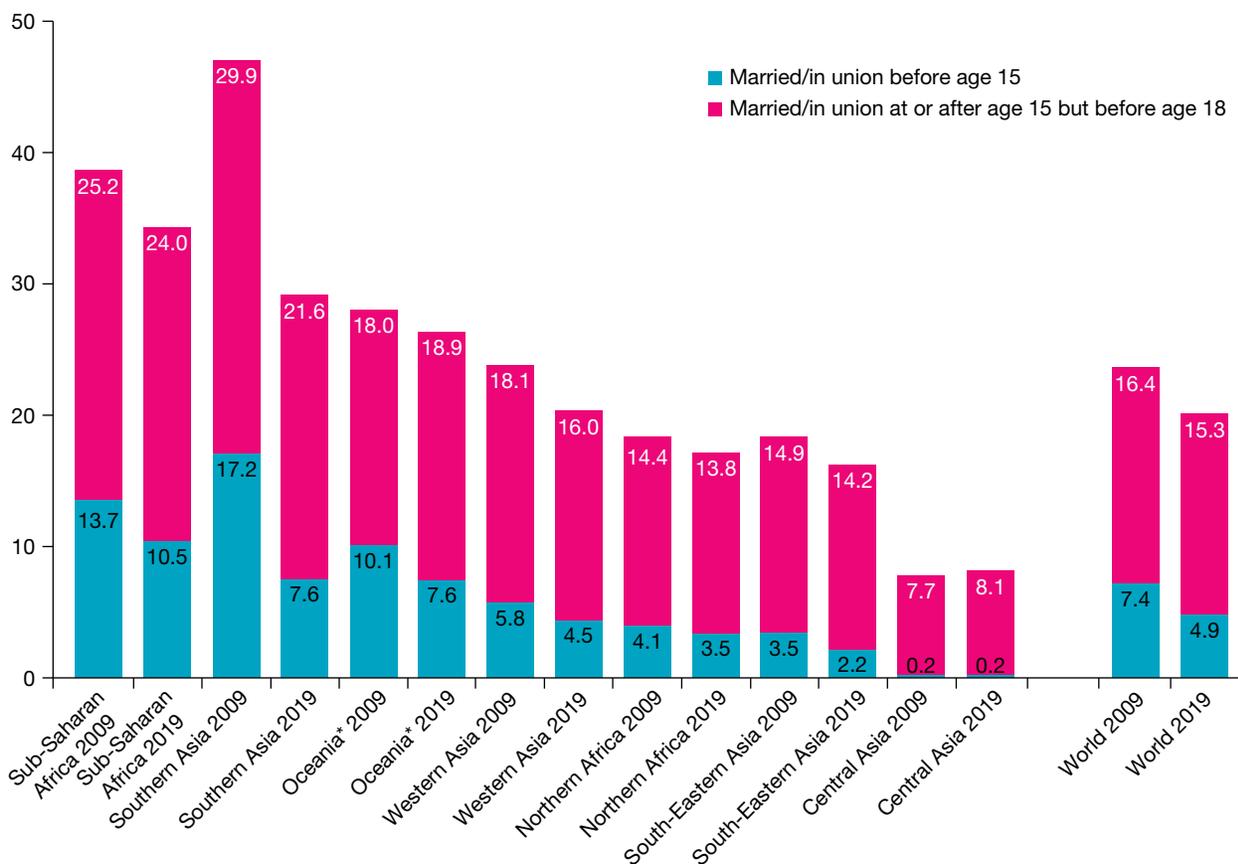
In some countries, the law discriminates against women. Women are not permitted to vote, own property, take out loans from banks, or take ownership of possessions arising from an inheritance. In other words, if a woman's husband dies, she does not have the legal right to take ownership of any land he owned. In some countries, women and girls are the property of their husband or father. A man has the right to marry off his daughters at a young age or sell them into prostitution. With no legal right to ownership of property or access to finance, women can find themselves victims of human trafficking and sexual exploitation. In 2019, an estimated 20 per cent of women between 20 and 24 years of age reported they were married or in a partnership before they were 18 years of age. While the rates of child marriage have declined, around 23.8 per cent of girls and women were married in childhood (see **FIGURE 11.67**).



int-8509

FIGURE 11.67 The rates of child marriage have declined, particularly in southern Asia, however, 23.8 per cent girls and women today were married in childhood.

Proportion of women 20 to 24 years of age who were married or in union before age 15 and before age 18, around 2009 and around 2019 (percentage)



Note: * Excluding Australia and New Zealand

Source: <https://unstats.un.org/sdgs/report/2020/Goal-05/>

Goal 5 also aims to end violent and harmful practices, such as female genital mutilation, which is the practice of partially or totally removing girl's external genital organs for non-medical reasons. Genital mutilation has serious effects on girls' physical, emotional and mental health and wellbeing. It can increase the risk of contracting HIV and cause complications during pregnancy and childbirth, leading to the death of the mother and baby. In 2019 at least 200 million girls and women had been subjected to female genital mutilation in 31 countries where this practice is most common.

11.10.2 Links between SDG 5 and SDG 3

Actions taken to achieve gender equality empower women and girls. This is important for economic growth, ending poverty and promoting good health and wellbeing. Small loans to women in Bangladesh have been shown to increase family income twice as much as similar loans to men. Water and sanitation systems controlled by women have been shown to be more sustainable and effective than those controlled by men. This contributes to good health and wellbeing for all members of the community and for all ages.

Impact on health and wellbeing and human development

Action taken to end violence against women and girls promotes good physical, mental and spiritual health and wellbeing.

Violence results in injuries and, at its worst, death for women and children. Living in fear reduces mental, spiritual and social health and wellbeing. Ending violence will also help end the sexual assault of women and children, which will promote good physical, spiritual, social and mental health and wellbeing.

Achieving gender equality means girls can access education and women can gain employment. Educating women and girls is the single most effective measure to raise overall economic productivity, lower infant and maternal mortality, educate the next generation, improve nutrition, and promote health and wellbeing. Gender equality provides opportunities for women to participate in their society, to vote and become leaders in the community. This promotes social and spiritual health and wellbeing and human development. SDG 5 is clearly interconnected with the achievement of other SDGs, particularly SDG 3, and demonstrates why collaborative action is necessary.

FIGURE 11.68 Empowering women and girls is important for economic growth and ending poverty.



11.10 Activity

Access the **Gender equality** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital document** Gender equality worksheet (doc-32234)
-  **Weblink** Gender equality

11.10 Exercises

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11.10 Quick quiz

on

11.10 Exercise

11.10 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3

■ LEVEL 2

4, 5, 6, 7, 8

■ LEVEL 3

9, 10, 11

Test your knowledge

1. What is meant by gender equality?
2. What is the aim of SDG 5?
3. In what areas do women face discrimination?
4. Why are women often victims of trafficking and sexual exploitation?
5. Why do women have less time than men for paid work and education?
6. Why is access to technology such as mobile phones important for achieving gender equality?

Apply your knowledge

7. Women spend approximately three times as many hours in unpaid domestic work as men. Explain why this is a problem.
8. Why is it important for women to have leadership roles in government?
9. Explain the relationship between girls' education and fertility rates.
10. Refer to **FIGURE 11.67**.
 - a. Which region had the highest percentage of children and youth married before the age of 18?
 - b. Which region had the greatest decline in child marriage between 2009 and 2019?
 - c. Why is it important to reduce the rates of child marriage?
11. Justify why collaborative action between SDG 5 and SDG 3 is necessary to promote health and wellbeing and human development.

11.10 Quick quiz

on

11.10 Exercise

11.10 Exam questions

Question 1 (3 marks)

Explain how SDG 5 — Gender equality assists in the achievement of SDG 3 — Ensure healthy lives and promote wellbeing for all ages.

Question 2 (3 marks)

Explain how achieving SDG 5 — Gender equality could promote human development.

Question 3 (1 mark)

In some low- and middle-income countries, women and girls are often fed after the male members of their family.

Identify to which Sustainable Development Goal this relates.

Question 4 (2 marks)

Read the following text, which is relevant for both question 4 and 5.

In 2005, Mozambique signed a new law that gave women equal rights as members of a household. Women finally received the legal right to divorce, create pre-nuptial agreements and inherit property.

The Family Law legally redefined the status of women and overhauled marriage laws.

The law also limited marriage to women of 18 years of age and older. Men were now no longer the defacto head of household, and women are able to work outside the home without acquiring permission and can buy and manage financial assets.

Source: Adapted from: <http://endpoverty2015.org/goals/genderequity>

Describe how the above changes may improve the health and wellbeing of Mozambique's women.

Question 5 (1 mark)

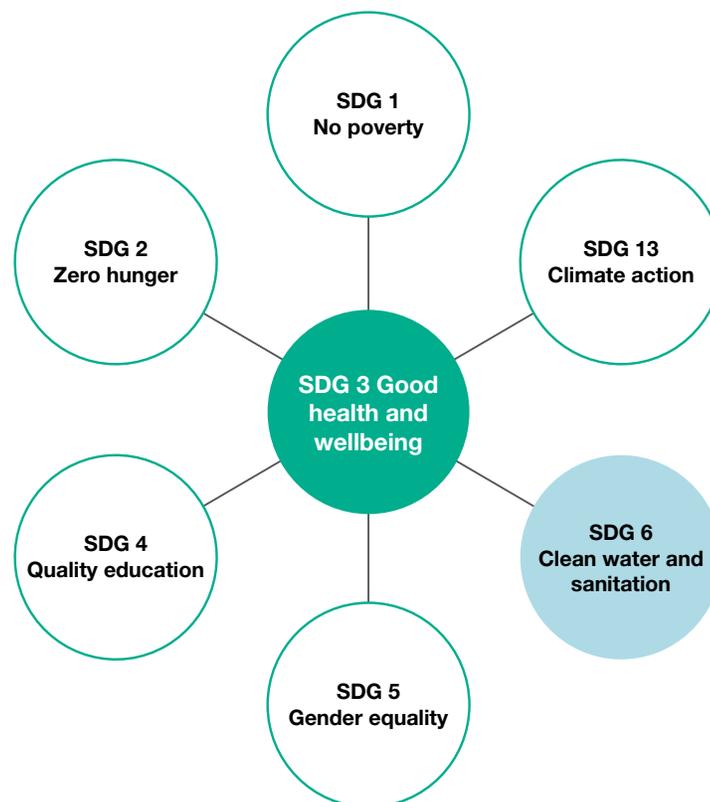
Identify the Sustainable Development Goal that is the main focus in the information in question 4.

More exam questions are available in your learnON title.

11.11 The relationships between SDG 3 and SDG 6

KEY CONCEPT Understanding the relationships between SDG 3 and SDG 6: Clean water and sanitation

FIGURE 11.69 SDG 6: Clean water and sanitation and SDG 3 are interconnected.



This goal is about ensuring that all people are able to enjoy clean water and adequate sanitation. By 2030 the aim is to:

- achieve universal and equitable access to safe and affordable drinking water
- enable access to adequate and equitable sanitation and hygiene for all
- improve water quality by reducing pollution, eliminating dumping and minimising the release of hazardous chemicals and materials
- increase the efficient use of water and ensure sustainable access to clean water
- implement integrated water resources management at all levels, including across borders
- protect and restore water-related ecosystems
- expand international cooperation and capacity to support low- and middle-income countries to achieve their targets
- support the participation of local communities in water and sanitation management.

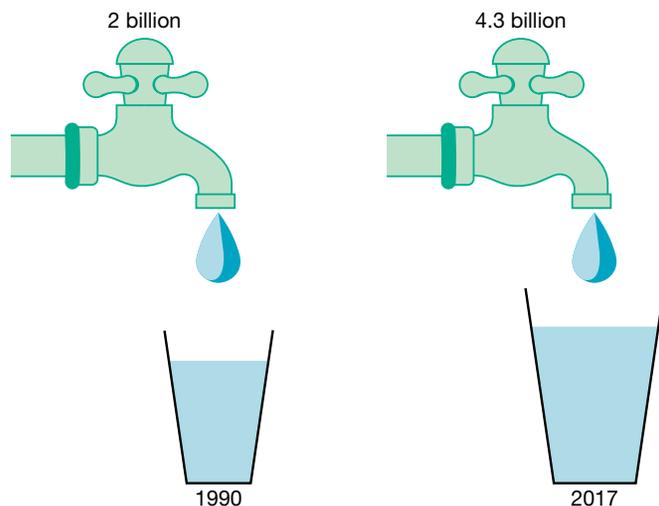
11.11.1 The meaning of SDG 6

SDG 6 is about ensuring that all people can enjoy clean water and adequate sanitation. Clean water and sanitation is essential for the health and wellbeing of individuals and communities. It reduces pollution and the risk of communicable and non-communicable diseases, including diarrhoeal and vector-borne diseases, and improves housing quality and environmental conditions by reducing water and soil contamination.

Each person requires 20–50 litres of water for drinking, cooking and hygiene each day. Sanitation is the safe disposal of human wastes, as well as the maintenance of hygienic conditions through garbage collection and the disposal of wastewater. Having access to clean water and sanitation is a basic human right, yet 785 million people, most of them living in low- and middle-income countries, do not have access to clean water and 2 billion do not have access to sanitation facilities such as toilets. In 2017, 673 million people were practising **open defecation**. More than 800 000 people die each year due to inadequate water, sanitation and hygiene. There has, however, been significant improvement made since 1990, with 2 billion people gaining access to safe drinking water across this time (see **FIGURE 11.70**).

Water transmits disease when it is contaminated by bacteria, viruses, parasites or other micro-organisms. These contaminants enter drinking water through animals and humans excreting into a catchment area, contaminated water seeping into leaky or damaged pipes in a distribution system, and from unhygienic handling of stored household water. Contamination from industrial and agricultural waste, such as pesticides, arsenic and other chemicals, also causes water to become unsafe. It is estimated that every day 2 million tons of waste, including human excreta and agricultural wastes, is dumped into lakes and rivers and almost 70 per cent of the water taken from rivers, lakes and aquifers is used for irrigation. Ten per cent of the world’s population is thought to consume food irrigated by wastewater. Access to water, sanitation and hygiene services are also necessary to prevent infection and contain the spread of viruses such as COVID-19.

FIGURE 11.70 Since 1990, 1.9 billion people have gained access to piped drinking water.



Source: Sustainable Development Goals Report, United Nations

Open defecation using open spaces rather than a toilet to pass human waste

Effects on health and wellbeing and human development

Without safe water, people cannot bathe or clean their clothes or homes properly. Diarrhoea is the most widely known disease linked to contaminated water, with 297 000 children dying each year from diarrhoea caused by contaminated water and poor sanitation. Many others suffer from a range of neglected tropical diseases, such as schistosomiasis and other worm infestations, as well as cholera, dysentery, hepatitis A, typhoid and trachoma, all of which are caused by unsafe water and sanitation.

Water scarcity also affects one in five people globally. It can be caused by drought, conflict or the lack of adequate infrastructure, which means women and children must walk long distances to collect water. When water is scarce, people use unsafe sources of drinking water and may decide hand washing is not a priority, which adds to the likelihood of diarrhoea and other diseases. Lack of access to clean water and sanitation is also a major contributor to malnutrition and poverty.

Ensuring everyone has access to safe water and sanitation by 2030 means countries need to invest in adequate infrastructure, provide sanitation facilities and encourage hygiene practices. Infrastructure on its own will not solve the problem. People need to be educated so they understand the links between clean water, sanitation and health and wellbeing. This is more likely to be successful with participation from local communities to ensure culturally appropriate communication tools are used and school-based programs are implemented.

11.11.2 Links between SDG 6 and SDG 3

Actions taken by the water and sanitation sector to achieve SDG 6 underpin the ability to achieve SDG 3. Without clean water and sanitation, reductions in maternal and child mortality, communicable diseases and diseases caused by soil and water pollution and contamination will not be achieved.

Ensuring people have access to high quality healthcare services is also affected by achieving SDG 6. In low- and middle-income countries, 25 per cent of healthcare facilities lack any water source, 10 per cent do not have improved sanitation and 33 per cent lack water and soap for hand washing.

Improved water and sanitation, along with better management of water resources, can increase economic growth and contribute to poverty reduction. Every \$1 spent on sanitation brings a \$5.50 return from keeping people healthy and productive. The potential global economic gains from investing in sanitation and water are estimated to be \$260 billion per year. These

FIGURE 11.71 Countries will need to invest in water infrastructure if everyone is to achieve access to safe water by 2030. Achieving this is important if SDG 3 is to be realised.

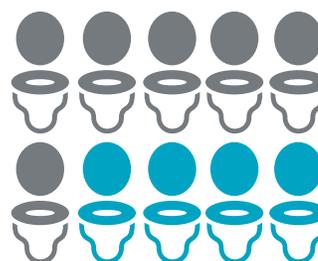


FIGURE 11.72 Improving the quality of water and sanitation services contributes to poverty reduction and is critical for the achievement of SDG 3: Good health and wellbeing.

3 in 10 people lack access to safely managed drinking water services



6 in 10 people lack access to safely managed sanitation facilities



Source: <https://unstats.un.org/sdgs/report/2018/overview/>

economic gains provide greater capacity for countries to invest resources into providing universal health coverage, sexual and reproductive health services, and access to essential and affordable medicines and vaccines.

Good health and wellbeing can also contribute to the achievement of SDG 6. Where people enjoy good health and wellbeing, they are more able to work and contribute to the economic growth of their country by contributing to the taxation system. This provides increased funding for governments to invest in water and sanitation infrastructure for all people, not just those living in urban areas. This demonstrates how collaborative action is necessary between the sector responsible for safe water and sanitation services and the achievement of SDG 3.

CASE STUDY

COVID-19 will not be stopped without providing safe water to people living in vulnerability – UN experts

GENEVA (23 March 2020) – As washing hands with soap and clean water is vital in the fight against COVID-19, governments worldwide must provide continuous access to sufficient water to their populations living in the most vulnerable conditions, UN experts said.

‘The global struggle against the pandemic has little chance to succeed if personal hygiene, the main measure to prevent contagion, is unavailable to the 2.2 billion persons who have no access to safe water services,’ the experts said.

‘We call on governments to immediately prohibit water cuts to those who cannot pay water bills. It is also essential that they provide water free of cost for the duration of the crisis to people in poverty and those affected by the upcoming economic hardship. Public and private service providers must be enforced to comply with these fundamental measures.

‘For the most privileged, washing hands with soap and clean water — the main defence against the virus — is a simple gesture. But for some groups around the world it is a luxury they cannot afford.’

The UN experts welcomed the measures announced by some governments to mitigate the impact of the loss of jobs likely to result from the pandemic and called for policies to ensure the continuous access to water and sanitation.

‘People living in informal settlements, those who are homeless, rural populations, women, children, older persons, people with disabilities, migrants, refugees and all other groups vulnerable to the effects of the pandemic need to have continuous access to sufficient and affordable water. Only this will allow them to comply with the recommendations of health institutions to keep strict hygiene measures,’ the UN experts said.

They expressed concerns that economically vulnerable people will become victims of a vicious cycle. ‘Limited access to water makes them more likely to get infected. Infection leads to illness and isolation measures, making it difficult for people without social security to continue earning a living. Their vulnerability increases, which results in even more limited access to water. Governments need to implement measures to break this cycle.

‘Throughout our mandates, we keep insisting on the need to ensure that “no one is left behind.” Governments must pay special attention to marginalised groups who are rarely at the centre of public policies related to water and sanitation. In relation to COVID-19, this message is even more critical,’ they said.

Source: United Nations Human Rights 2020, <https://www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=25738&LangID=E>

CASE STUDY REVIEW

1. What is the relationship between safe water, hygiene and COVID-19?
2. Which groups of people are identified as needing continuous access to sufficient and affordable water?
3. What actions by the government are recommended to help ensure people have access to safe water and hygiene?
4. What is meant by ‘economically vulnerable people will become victims of a vicious cycle’?

11.11 Activity

Access the **Clean water and sanitation** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

-  **Digital document** Clean water and sanitation worksheet (doc-32235)
-  **Weblink** Clean water and sanitation

11.11 Exercises

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11.11 Quick quiz



11.11 Exercise

11.11 Exam questions

Select your pathway

■ LEVEL 1
1, 2, 3, 4

■ LEVEL 2
5, 6, 7

■ LEVEL 3
8, 9

Test your knowledge

1. How much water does each person need each day? What is this water used for?
2. What is meant by the term 'sanitation'?
3. What are the ways in which water can become contaminated?
4. What diseases are associated with a lack of access to safe water and sanitation?
5. Why is water scarcity a problem?
6. What is needed to ensure everyone has access to safe water and sanitation by 2030?

Apply your knowledge

7. Why is access to safe water and sanitation a basic human right?
8. Explain how safe water and sanitation contributes to the elimination of malnutrition and poverty.
9. Justify why collaborative action between programs addressing SDG 6 and SDG 3 is necessary to promote health and wellbeing and human development.

11.11 Quick quiz



11.11 Exercise

11.11 Exam questions

Question 1 (2 marks)

What is the focus of SDG 6?

Question 2 (2 marks)

Outline how the achievement of SDG 6 — Clean water and sanitation will assist in the achievement of SDG 3 — Ensure healthy lives and promote wellbeing for all ages.

Question 3 (3 marks)

Explain how the achievement of SDG 6 — Clean water and sanitation can promote health and wellbeing and human development.

Question 4 (4 marks)

The Sustainable Development Goals are interrelated and impact on each other.

Explain the interrelationship between SDG 3 – Ensure healthy lives and promote wellbeing for all ages and SDG 6 – Clean water and sanitation.

Question 5 (4 marks)

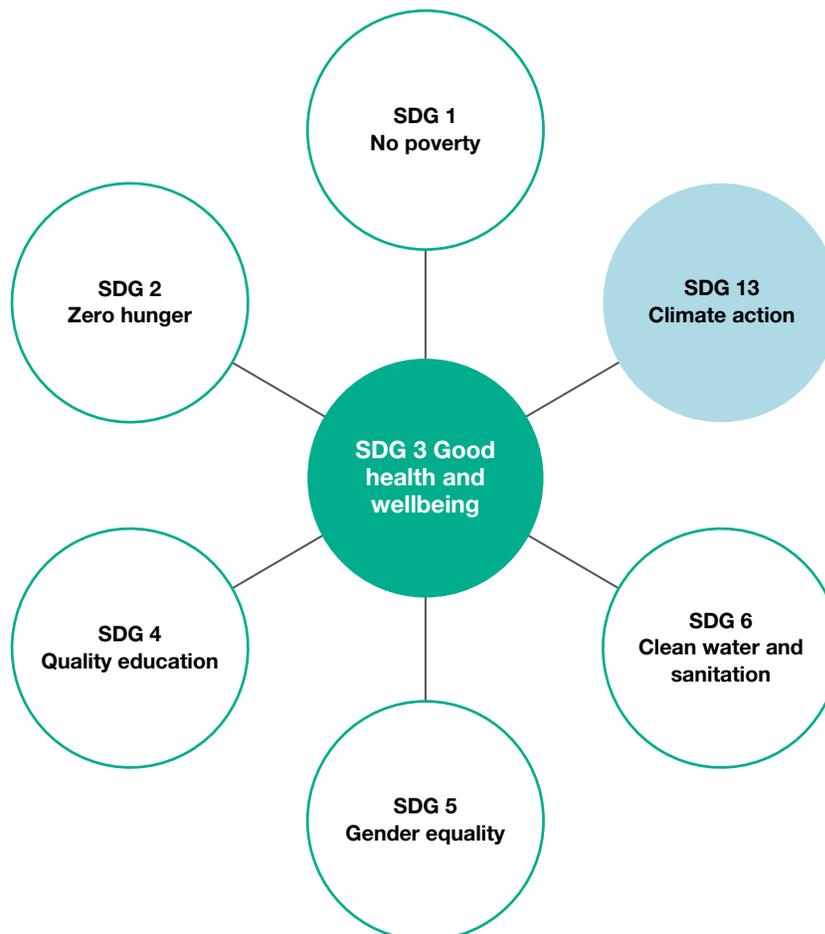
What actions are needed to ensure everyone has access to safe water and sanitation by 2030?

More exam questions are available in your learnON title.

11.12 The relationships between SDG 3 and SDG 13

KEY CONCEPT Understanding the relationships between SDG 3 and SDG 13: Climate action

FIGURE 11.73 SDG 13: Climate action and SDG 3 are interconnected.





CLIMATE ACTION: TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

Goal 13 is about taking urgent action to combat climate change and its impacts. By 2030 the aim is to:

- strengthen the resilience and capacity of all countries to adapt to climate-related hazards and natural disasters
- integrate climate change measures into national policies, strategies and planning
- improve education, awareness-raising and the capacity of people and organisations to take actions that reduce or prevent environmental degradation
- implement the commitment by high-income countries to frameworks developed by the United Nations to take action to reduce climate change and to provide funds to support low- and middle-income countries to implement strategies to reduce climate change
- promote ways of raising capacity for effective climate change-related planning and management in low-income countries and small island developing states, including focusing on women, youth and local and marginalised communities.

11.12.1 The meaning of SDG 13

SDG 13 is concerned with the effects of climate change and the need for all countries to take urgent action to reduce these effects. Climate change is caused by human activities. You saw in topic 10 that the over-reliance on fossil fuels and the resulting greenhouse gases have contributed to global warming and rising sea levels. This has brought about an increase in the frequency of weather-related natural disasters. Severe weather and rising sea levels are affecting people, their homes and their health and wellbeing regardless of where they live. 2020 was one of the hottest years in recorded history. The five-year average global temperature from 2016–2020 was also the highest on record. The world continues to experience rising sea levels, extreme weather conditions and increasing concentrations of greenhouse gases. Climate-related disasters are responsible for the deaths of 150 000 people each year. Many more are injured, homeless, displaced or in need of emergency assistance. While the majority of fatalities are due to events such as earthquakes and tsunamis, over 90 per cent per cent of all disasters are caused by floods, storms, droughts, heatwaves and other extreme weather events.

Effects on health and wellbeing and human development

Climate change is a threat to health and wellbeing and human development. It affects the sociocultural and environmental factors that impact health and wellbeing, including clean air, safe drinking water, and adequate food and secure shelter. With rising sea levels, those living in small island states and other coastal regions and those living in cities built on the coast are at risk of losing their homes and livelihoods. More than half of the world's population lives within 60 km of the coast.

Countries with weak health infrastructure are most at risk of the effects of climate change and have less ability to cope with its effects. Children and the elderly, especially those living in low- and middle-income countries,

FIGURE 11.74 Using public transport and alternatives, such as cycling or walking, rather than private vehicles could reduce carbon emissions and air pollution.



are among the most vulnerable to the health and wellbeing risks that will occur. It has been estimated that, between 2030 and 2050, climate change will cause approximately 250 000 additional deaths each year from malnutrition, malaria, diarrhoea and heat stress. Climate change is expected to bring about an increase in:

- infectious diseases due to increased humidity and heat from droughts, flood and heat waves. This increase in heat and humidity will provide ideal breeding grounds for vector-borne diseases such as malaria, dengue fever and other neglected tropical diseases.
- allergies and asthma due to an increase in air pollution and pollen seasons
- deaths from cardiovascular and respiratory disease, particularly among elderly people. This is due to extreme high air temperatures, which raises the levels of ozone and pollutants in the air.
- hunger and malnutrition as food production is affected by increased drought in some areas and flooding in others. Drought significantly limits food production while flooding can contaminate sources of fresh water and increase the risk of diarrhoeal diseases.
- reduced mental, social, spiritual and emotional health and wellbeing due to displacement as a result of the loss of homes and livelihoods.

A lack of action on climate change has the potential to undo the progress made in reducing poverty, increasing access to safe water and food security. SDG 13 recognises that climate change can be addressed but requires global action. All countries must commit to transforming existing energy, industry, transport, food, agriculture and forestry systems to reduce greenhouse gas emissions and global warming. This will take time and countries also need to develop their capacity to anticipate extreme weather events through early warning systems. Countries need to become more resilient to the effects of climate change and put in place strategies to reduce the effects of extreme weather events when they do occur, such as the protection of water and sanitation systems.

In 2014 at the UN Climate Summit in New York, governments, businesses and others in the private sector made a commitment to take action to address climate change. At this summit, it was recognised that low- and middle-income countries need financial and technical support for the development and implementation of new initiatives. In response, a Green Climate Fund was created, designed to generate funds to support international action.

11.12.2 Links between SDG 13 and SDG 3

Many policies and individual actions have the potential to reduce greenhouse gas emissions and improve health and wellbeing. Cleaner energy systems, promoting energy efficient public transport and alternatives, such as cycling or walking, rather than using private vehicles, could reduce carbon emissions and air pollution, all of which would help reduce current morbidity and mortality rates due to communicable diseases and a range of non-communicable diseases.

FIGURE 11.75 In southern Sudan in Africa a family uses a home solar system to supply electricity to their home where they previously had no access to electricity.



The achievement of SDG 3 is dependent upon collaborative action being taken to address climate change. Clean water and sanitation underpin the achievement of reducing child deaths from diseases such as diarrhoea. Ending the epidemics of infectious diseases cannot be achieved if climate change produces conditions that increase the risk of these diseases. Similarly, reducing premature mortality from non-communicable diseases is compromised when climate change produces conditions that increase the risk of these diseases. Reducing deaths and illnesses from hazardous chemicals, air, water and soil pollution will not be achieved if the effects of climate change are not addressed.

Actions to address climate change will also protect and promote health and wellbeing and achieve SDG 3. It will bring about a planet that is not only more environmentally intact, but also has cleaner air, safer water, more food, more effective and fairer health and social protection systems and healthier people — what is good for the planet is also good for people’s health and wellbeing.

11.12 Activity

Access the **Climate change** weblinks and worksheet in the Resources tab and then complete the worksheet.

Resources

 **Digital document** Climate change worksheet (doc-32228)

 **Weblinks** Climate change 1
Climate change 2

11.12 Exercises

learn

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

11.12 Quick quiz



11.12 Exercise

11.12 Exam questions

Select your pathway

 **LEVEL 1**
1, 3

 **LEVEL 2**
2, 4

 **LEVEL 3**
5, 6, 7

Test your knowledge

1. What has contributed to global warming and rising sea levels?
2. Why are rising sea levels of concern?
3. What diseases are expected to increase due to climate change?
4. What action can be taken to reduce carbon emissions and household air pollution?

Apply your knowledge

5. Why would the establishment of a Green Climate Fund be important for acting on climate change?
6. Refer to **FIGURE 11.75**. How might the home solar system in Africa assist in promoting health and wellbeing and human development?
7. Explain how the achievement of SDG 3 is interdependent with the achievement of SDG 13 and requires collaborative action.

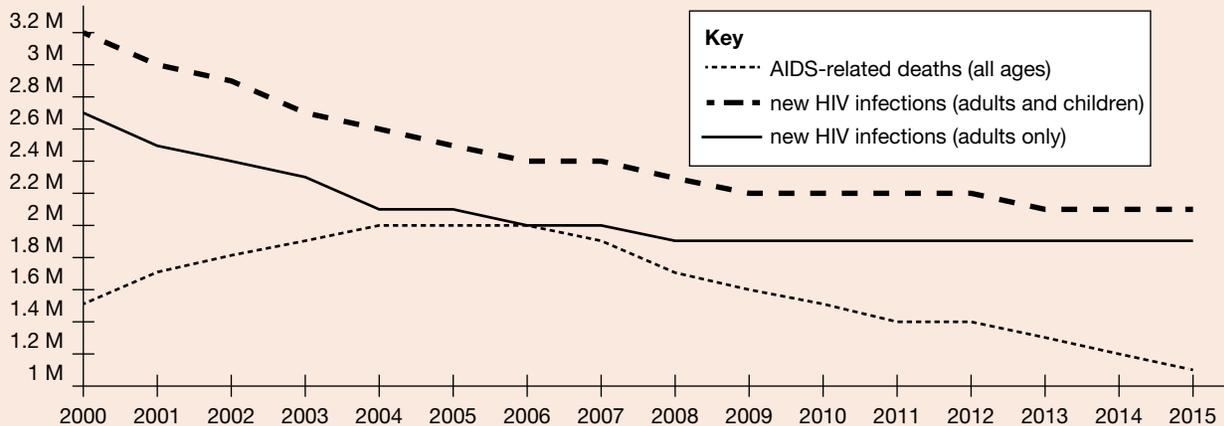
Question 1 (10 marks)

Source: VCE 2019, Health and Human Development Exam, Q.5; © VCAA

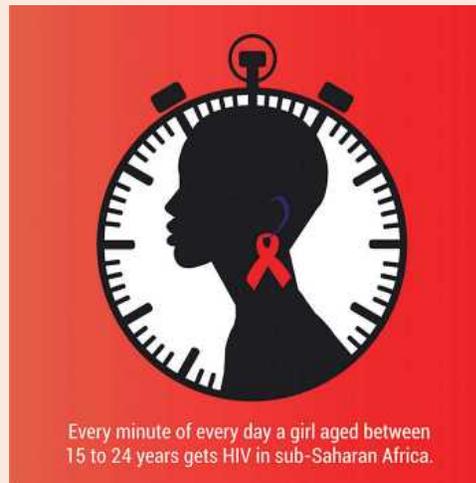
Consider the following three sources relating to HIV/AIDS.

Source 1

Global annual AIDS deaths and new infections, 2000–2015 (in millions)



Source: United Nations Population Fund, <www.unfpa.org/hiv-aids>; UNAIDS 2016

Source 2

Source: World Health Organization, 'World AIDS Day 2018'

Source 3

Mosiya lives in rural Tanzania with her 60-year-old grandmother and three younger brothers. Mosiya was 13 when she and her brothers were orphaned, both parents dying from AIDS complications due to the lack of access to antiretroviral medication. Now, at the age of 15, due to poverty Mosiya has been forced to leave school to work at the local coffee plantation. The income she earns is sufficient to meet her family's basic food needs. However, Mosiya and her grandmother grow additional vegetables to supplement the family's diet and to sell at the local village market. The money raised is used to pay for her brothers' school materials. Mosiya is fortunate as other girls in her village have been forced to work in the sex industry.

Using the information provided and your understanding of the key features of Sustainable Development Goal (SDG) 3, **analyse** how addressing the HIV/AIDS epidemic can lead to an improvement in health and wellbeing and the achievement of one other SDG.

Question 2 (3 marks)

Describe how a lack of progress in the achievement of SDG 13 — Action climate change may impact on the achievement of SDG 3 — Ensure healthy lives and promote wellbeing for all ages.

Question 3 (3 marks)

‘From 1880 to 2012, average global temperature increased by 0.85°C. To put this into perspective, for each 1 degree of temperature increase, grain yields decline by about 5 per cent. Maize, wheat and other major crops have experienced significant yield reductions at the global level of 40 megatonnes per year between 1981 and 2002 due to a warmer climate.’

Source: <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-13-climate-action/targets/>

Describe how a decrease in grain yield as a result of climate change may impact on the achievement of SDG 3 — Ensure healthy lives and promote wellbeing for all ages.

Question 4 (4 marks)

In Afghanistan all but three of the past 11 years have seen floods or droughts, including the country’s most severe drought ever, which lasted from 1998 to 2006. Over the next 45 years, scientists predict a decrease in rainfall and a rise in average temperatures of up to 4°C compared to 1999. Droughts are likely to be the norm by 2030, leading to land degradation and desertification.

Some 80 per cent of Afghans depend on rain-fed agriculture and cattle-grazing for their incomes, both of which are threatened by temperature increases and erratic rainfall.

To strengthen climate-resilient livelihoods, women will be provided alternative livelihood options and other income-generating employment. The capacity of small and medium enterprises will be built so that they can expand the production of handicrafts and other products. To respond to grazing needs, around 2000 hectares of degraded rangelands will be reforested across the country.

To improve irrigation infrastructure, small-scale reservoirs will be built along selected rivers and water-harvesting techniques will be introduced. Underground irrigation (karezes) and canal systems will be rehabilitated to reduce water losses and enhance agricultural productivity. Local level water retention and utilisation capacity will be improved by building community-based check dams, contour bunds and other infrastructure to conserve water and enhance groundwater recharge.

Source: Adapted from: http://www.af.undp.org/content/afghanistan/en/home/operations/projects/environment_and_energy/ClimateChange.html

a. Identify an action taken in the article above and describe how this action can help achieve SDG 3 — Ensure healthy lives and promote wellbeing for all ages. **3 marks**

b. Identify the Sustainable Development Goal the above article represents. **1 mark**

Question 5 (3 marks)

SDG 13 recognises that climate change can be addressed but requires global action.

Describe the actions that are required if we are to achieve the targets for SDG 13.

More exam questions are available in your learnON title.

11.13 The UN's Sustainable Development Goals and the World Health Organization

KEY CONCEPT Understanding the priorities and the work of the World Health Organization

The World Health Organization (WHO) is a branch of the United Nations. It was established in 1948 and works with governments and other agencies in 194 countries, in six regions and from 150 offices around the world to achieve better health for everyone, everywhere. The WHO brings together the world's top health experts to provide leadership in supporting countries to respond to a range of global health issues to improve the health and wellbeing of all people. Its work is relevant to all countries — low-, middle- and high-income — and is based on achieving all health-related SDG targets.

FIGURE 11.76 Headquarters of the World Health Organization in Geneva, Switzerland. WHO is the directing and coordinating authority for health within the United Nations system.



The WHO's vision is a world in which all people achieve the highest possible standard of health and wellbeing. Its mission is to promote health, keep the world safe and serve the vulnerable. There are three main principles that underpin their work:

1. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political beliefs, economic or social condition.
2. The health of all peoples is fundamental to the attainment of peace and security and is dependent on the fullest cooperation of individuals and States.
3. Unequal development in different countries in the promotion of health and control of diseases, especially communicable disease, is a common danger.

11.13.1 The work of the World Health Organization

As the authority on international health, the WHO has six core functions, which provide a framework for their work (see **FIGURE 11.77**).

FIGURE 11.77 The six core functions of the World Health Organization



TABLE 11.1 Six main functions of the WHO

Function	Explanation	Example
Provide leadership and create partnerships to promote health and wellbeing	The WHO works with member states and other agencies to develop international policies and regulations to prevent and manage disease outbreaks and coordinate relief efforts in times of disaster.	<ul style="list-style-type: none"> Partnerships have helped produce effective vaccines against meningitis, Ebola and the first malaria vaccine. They have also worked with countries in the development of the COVID-19 vaccines.
Carry out research and provide health and wellbeing information	The WHO works with others to ensure the most up-to-date research is available to help inform decisions that promote health and wellbeing; prevent and control diseases; improve health systems; and help achieve universal access to healthcare. The WHO provides expertise in research and development to improve the way in which diseases can be prevented, diagnosed, managed and treated.	<ul style="list-style-type: none"> Their work has led to guidelines and advice on preventing and treating conditions such as asthma, hepatitis and Zika. They provided information to all countries on ways to prevent the spread of COVID-19 that was simple and easy to read.
Set norms and standards, and promote and monitor their implementation	The WHO works with other agencies and governments to standardise the way research is carried out, the use of common indicators for the collection of data and the health and wellbeing terminology that is used. This makes it more effective and efficient to share information, monitor the impact of disease and evaluate the effectiveness of programs and initiatives.	<ul style="list-style-type: none"> International Classification of Diseases, which enables all countries to use a common standard for reporting diseases The WHO Essential Medicine List that provides a guide for countries on the main medicines that a health system needs. The WHO's work has led to global standards for air and water quality and safe and effective medicines. An emerging challenge is the protection of the effectiveness of antibiotics as a result of drug resistance.
Develop policies to help countries take action to promote health and wellbeing	Policies help governments and the global community implement action that is known to be effective in bringing about improvements in health and wellbeing. The WHO helps countries adapt these policies to meet their local context and helps governments implement them.	<ul style="list-style-type: none"> Global Framework Convention on Tobacco Control The Stop TB Strategy Healthy Eating and Physical Activity Guidelines Guidelines on the intake of sugars to reduce the risk of non-communicable diseases in adults and children.
Provide technical support and help build sustainable health systems	The WHO provides advice and support to countries to implement changes in areas such as the provision of universal healthcare, health financing and a trained workforce. They help countries strengthen their capacity for early warning, risk reduction and the management of health and wellbeing risks.	<ul style="list-style-type: none"> Assisting countries with health finance through developing a national health finance strategy Providing policy briefs on the importance of free healthcare
Monitor health and wellbeing and assess health and wellbeing trends	The WHO has developed a Global Health Observatory, which stores and shares health-related data. It helps countries identify who is getting ill, from which diseases and how and where they are getting ill so resources can be targeted to where they are needed most.	<ul style="list-style-type: none"> Each year, the WHO studies influenza trends to determine what should be included in the following season's influenza vaccine. WHO closely monitored the spread of COVID-19 and provided up-to-date data for the global community.

11.13.2 The World Health Organization's priorities

In 2018, through the Thirteenth General Programme of Work, 2019–2023, the WHO established three strategic priorities. Each of these priorities is aligned to the achievement of Sustainable Development Goal 3: Good health and wellbeing and are relevant to low-, middle- and high-income countries.

FIGURE 11.78 The World Health Organization's strategic priorities and goals



Source: World Health Organization, *Draft Thirteenth General Programme of Work, 2019–2023: Report by the Director-General*, http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_4-en.pdf?ua=1

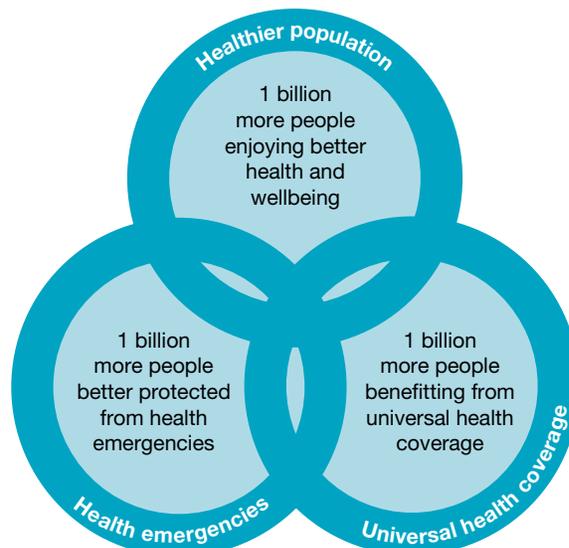
Each of the three strategic priorities are accompanied by ambitious goals to be achieved by 2023 (see **FIGURE 11.79**) These goals are referred to as the ‘triple billion’ goals.

The strategic priorities and goals are:

1. Achieving universal health coverage — 1 billion more people benefitting from universal health coverage
2. Addressing health emergencies — 1 billion more people better protected from health emergencies
3. Promoting healthier populations — 1 billion people enjoying better health and wellbeing.

These strategic priorities are interconnected and together provide a way to achieve the mission of the WHO. Their work in achieving these priorities reflect their six core functions.

FIGURE 11.79 The World Health Organization's strategic priorities and goals are interconnected.



Source: World Health Organization, *Draft Thirteenth General Programme of Work, 2019–2023: Report by the Director-General*, http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_4-en.pdf?ua=1

Achieving universal health coverage — 1 billion more people benefitting from universal health coverage

Universal health coverage refers to every country having a strong and resilient people-centred health system based on primary care, health promotion and disease prevention. There are many countries around the world that do not provide affordable health services, and people are either unable to access the healthcare they need or face poverty because they have to pay large amounts of money to receive medical assistance. In addition to economic barriers, achieving universal health coverage is also affected by geographical barriers where services are not available in areas where people live, and cultural barriers where the services provided do not have the cultural sensitivity for effective delivery or use.

FIGURE 11.80 It is important that people have access to health services and vaccines at an affordable cost.



Universal health coverage is therefore focused around providing access to essential healthcare services, including medicines and vaccines at a cost that is affordable for all.

Universal health coverage is important in reducing poverty, achieving equity in health and wellbeing outcomes and promoting a stable and secure society.

The WHO aims to progress this goal by addressing the following seven main areas (see **FIGURE 11.81**):

1. *Service access and quality* — work with countries to provide all people, regardless of where they live, with access to quality essential healthcare services that meet the main health and wellbeing needs of the community
2. *Health workforce* — ensure there are sufficient trained health workers available to provide healthcare services to everyone who needs them
3. *Access to medicines, vaccines and health products* — work with countries to provide safe and effective essential medicines and vaccines. Essential medicines are those that meet the main healthcare needs of a population and assist them to overcome disease and illness more quickly.
4. *Governance and finance* — the WHO will support countries to strengthen the capacity of governments to develop and implement health policy, organise and implement an effective health system, regulate services, provide the necessary funding, develop health budgets and track expenditure.
5. *Health information systems* — the WHO will work with countries to improve health information systems to enable the monitoring of health risks, track morbidity and mortality rates and their risk factors and assess health system performance
6. *Advocacy* — the WHO will provide leadership by increasing the global awareness and benefits of universal health coverage. They will advocate for investment in all aspects of the health system and actively promote the benefits of this investment.
7. *Country support* — the WHO will work in partnership with countries and support them at all levels to implement primary healthcare systems that meet their health priorities.

FIGURE 11.81 To achieve the strategic priority of universal health coverage the WHO will work with countries and provide support in seven main areas.



Addressing health emergencies — 1 billion more people better protected from health emergencies

This strategic priority is directly aligned to the SDG 3 implementation target of strengthening the capacity for early warning, risk reduction and management of health and wellbeing risks.

Early detection, risk assessment, information sharing and a quick response to emergencies are important to avoid illness, injury, death and economic loss on a large scale. Work that will achieve this goal means all countries will be better prepared for health emergencies such as COVID-19 by building resilient health systems. In many countries, health systems collapse during times of emergencies, conflict and crises, which limits the ability to both respond to and recover from such situations. This was seen during the COVID-19 pandemic in countries such as Mexico.

This priority includes two components (see **FIGURE 11.82**):

1. *Building and sustaining resilient national, regional and global capacities necessary to keep the world safe from epidemics and other health emergencies.*

All countries are at risk of disease outbreaks, many of which can spread quickly and become an epidemic. These diseases include influenza and cholera but, more recently, new diseases have emerged, such as COVID-19, Ebola and Zika virus, and present challenges for the global community. The WHO has developed the International Health Regulations (2005), which recommend actions for countries to implement to reduce the spread of diseases that are capable of crossing borders and threatening people worldwide. These measures include airport control, quarantine and ensuring resources are readily available to treat disease outbreaks. The WHO will work with countries to ensure the International Health Regulations are implemented and identify and coordinate the research, development and innovation needed to better detect, prevent and respond to new and emerging diseases and other sources of risk.

2. *Ensuring all people affected by health emergencies have quick access to essential life-saving health services including health promotion and disease prevention.*

The WHO will work with countries to ensure that essential life-saving health services reach the most vulnerable people, particularly those living in fragile and conflict-affected countries. Health services include:

- health promotion and disease prevention
- mental health and psychosocial support
- nutrition services, including support for exclusive breastfeeding.

The WHO will also work to ensure national health emergency programmes in all countries are supported by a well-resourced and efficient WHO Health Emergencies Programme.

FIGURE 11.82 The WHO strategic priority Addressing health emergencies consists of two elements and is aligned with the implementation targets in SDG 3.

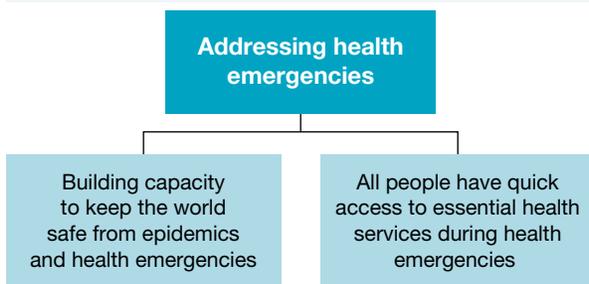


FIGURE 11.83 Implementing the International Health Regulations will help countries combat diseases such as the COVID-19 virus.



Promoting healthier populations — 1 billion more people enjoying better health and wellbeing

This strategic priority focuses on the achievement of the health and wellbeing targets in SDG 3. It aims to decrease maternal, child and newborn mortality rates, reduce diseases such as HIV, tuberculosis, malaria and neglected tropical diseases, and promote health and wellbeing across all lifespan stages. Targeted areas include family planning, early childhood and youth health and wellbeing.

It interrelates with the other two priorities to focus work in five platforms (see **FIGURE 11.85**).

1. *Improving human capital across the lifespan*

The WHO aims to improve human capital through interventions that focus on early childhood, child and adolescent health and development and on family planning, pregnancy and childbirth as these are critical stages where long-term improvements in health and wellbeing can be achieved. Investment in these areas has the potential to reduce the incidence of mental health disorders and non-communicable diseases later in life. It is directly aligned to the SDG 3 implementation target of access to sexual and reproductive healthcare services and the SDG 5 target on universal access to sexual and reproductive health and reproductive rights.

2. *Accelerating action on preventing non-communicable diseases and promoting mental health*

Much of the morbidity and premature mortality caused by noncommunicable diseases, could be prevented through interventions to reduce four main risk factors: tobacco use, harmful use of alcohol, unhealthy diets and physical inactivity. Prevention efforts also need to be combined with equitable access to effective treatment for cardiovascular diseases, cancer, diabetes, chronic respiratory diseases and mental health conditions. Mental health disorders are a major cause of the global burden of disease; however, the majority of people concerned have no access to treatment and care. Increased efforts are also needed to tackle road traffic injuries and violence. The WHO will work with countries and support them to implement preventive strategies to address non-communicable diseases.

FIGURE 11.84 Addressing the risk factors for non-communicable diseases, such as healthy food intake, will contribute to promoting healthier populations.



3. *Accelerating elimination and eradication of high impact communicable diseases*

Achieving the 2030 target of ending the epidemic of AIDS, TB, malaria and neglected tropical diseases, and combatting hepatitis, water-borne diseases and other communicable diseases such as COVID-19 cannot be achieved without significantly accelerating prevention, control and elimination efforts by introducing cost-effective and high-impact interventions. These diseases continue to be major public health challenges in many countries and the WHO will increase their efforts to support the implementation of actions designed to eliminate these diseases.

4. *Tackling antimicrobial resistance*

Antimicrobial resistance occurs when microorganisms such as bacteria, fungi, viruses, and parasites change when they are exposed to drugs such as antibiotics that are designed to prevent or treat diseases. Microorganisms that develop antimicrobial resistance are sometimes referred to as ‘superbugs’. Medicines that have been used previously to treat diseases become ineffective and infections persist in the body, increasing the risk of spread to others. Antimicrobial resistance occurs naturally over time, usually through genetic changes. However, the misuse and overuse of medication is increasing this process. Antibiotics are often being overused and misused. An example of misuse is when they are taken by people with viral infections like colds and flu. Antimicrobial resistance threatens the effective prevention and treatment of a wide range of infections. Without effective antibiotics, the success of major surgery and cancer chemotherapy would be compromised. New resistant microorganisms are emerging and spreading globally, threatening our ability to treat common infectious diseases, resulting in prolonged illness, disability, and death. The WHO will work with countries to increase awareness and understanding of the correct use of antimicrobial medicines and promote research and development into ways of addressing antimicrobial resistance.

5. *Addressing health effects of climate change in small island developing States and other vulnerable States*

These nations are vulnerable and they face increasing climate and pollution-related risks, with women, children and those who are the poorest being particularly at risk. Air pollution is a major risk factor for non-communicable diseases and greater resilience is needed to prevent the spread of vector-borne, water-borne, food-borne and work-related diseases. The WHO will work to prevent pollution-related disease and support small island developing states to build health systems that are resilient to extreme weather and climate-sensitive diseases.

FIGURE 11.85 The WHO will contribute to people enjoying better health and wellbeing through five platforms.



EXAM TIP

When a question asks you to apply your knowledge about the work of the WHO, it is important to explain how their work will help achieve improvements in health and wellbeing.

CASE STUDY

Antibiotic resistance still poses substantial risk despite fall in antibiotic use, report finds

By health reporter Olivia Willis

Campaigns pushing for Australians to stop taking antibiotics unnecessarily are beginning to cut through, as new data reveals the nation's antibiotic use has fallen for the first time in two decades.

Key points:

- New report reveals antibiotics are still being overprescribed, despite drop in use
- Common pathogens are growing increasingly resistant to common antibiotics
- Experts say inappropriate prescribing needs to be reined in

Those declining rates, however, mask a growing problem.

The same research found antibiotics are still being overprescribed and misused, causing several dangerous bacteria to grow increasingly resistant to common medicines.

The third annual surveillance report from the Australian Commission on Safety and Quality in Healthcare, published on Thursday, warned that antibiotic resistance showed little sign of diminishing — and posed an ongoing and 'substantial' risk to patient safety.

Common pathogens like *E. coli*, *Salmonella* and the bacteria that cause gonorrhoea were found to be among a group of organisms growing progressively resistant to major drug classes and — in some cases — to last-resort treatments.

More work is needed to reduce the inappropriate use of antibiotics, particularly in aged care homes and hospitals, according to John Turnidge, senior medical advisor at AURA, the Commission's antimicrobial surveillance system.

'Australians are still very high users of antibiotics ... and we've got a long way to go to catch up to countries like the Netherlands, which we consider the benchmark,' he said. In 2017, more than 10 million Australians had at least one antibiotic dispensed, and more than 26 million prescriptions for antimicrobials were issued. The report found a significant number of patients were prescribed antibiotics for conditions for which there is no evidence of benefit, including the flu.

'We've got to continue to get out there and educate the public and prescribers about inappropriate use,' Professor Turnidge said.

Resistance rises in community

Of particular concern, Professor Turnidge said, is drug-resistant *Staphylococcus aureus* — better known as golden staph. The common bacterium, which lives on people's skin and is mostly harmless, can cause a range of mild to severe infections, including meningitis and pneumonia. 'Everybody thinks of drug-resistant golden staph as a hospital problem. But now it's flipped on its head — it's actually a community problem,' Professor Turnidge said. The report found that although drug-resistant strains of golden staph had dropped in hospitals, they had increased elsewhere, particularly in aged care homes and remote regions. 'We've still got a number of antibiotics that we can use ... But we know from experience that through the passage of time, resistant bugs pick up even more resistance,' he said.

Professor Turnidge added that *E. coli*, the most common cause of urinary tract infections (UTIs), was also becoming "slowly resistant" to antibiotics, including to some reserve drugs. 'We don't want to end up in the situation where somebody with a common infection has to go to hospital to get intravenous antibiotics because there's nothing available in the community,' he said. But Trent Yarwood, an infectious diseases physician and director of the Queensland Antimicrobial Stewardship Program, said that was already happening. 'Everybody who works in infection has seen patients who have needed to be admitted to hospital or put on an intravenous antibiotic because there were no tablets available to treat those UTIs,' Dr Yarwood said. 'It used to be that if you picked up one of those germs, it was likely from hospital. But we're seeing a lot more of these come in from the community now.'

According to the report, multi-drug-resistant organisms were found in high numbers in aged care homes, where more than half of prescriptions were issued to residents with no signs or symptoms of infection.

Professor Turnidge said if the rise in antibiotic resistance continued to increase in the community, hospitals would come under further pressure to take care of people when pharmacy medications failed.

'It's not people dropping dead that's the big problem ... it's people not being able to be treated in the community anymore.'

Containing resistance is crucial

In addition to ensuring antibiotics are only given to people who absolutely need them, Professor Turnidge said good hygiene practices would continue to go a long way in containing the spread of antibiotic resistance. 'Hand washing is still very important to reduce risk of transmission of bugs, and therefore superbugs, from one person to another,' he said.

According to the OECD, an average of 290 people die in Australia each year as a result of infections from eight drug-resistant bacteria.

Dr Yarwood stressed that efforts to contain the spread of antibiotic resistance were critical to modern medical care. 'People don't realise just how much of hospital care really revolves around antibiotics,' he said. 'There's this perception that we can just use a new antibiotic or a different antibiotic — that the drug companies will just sort it out.'

But Dr Yarwood said there wasn't as much antibiotic development happening as people thought, despite global need for new drugs.

'We don't have a lot of extra options up our sleeve, which is why it's really important that we preserve the antibiotics that we do have, and make sure they're effective as long as possible.'

Source: Olivia Willis, *ABC News*, 'Antibiotic resistance still poses substantial risk despite fall in antibiotic use, report finds', 9 May 2019

CASE STUDY REVIEW

1. Why is it important for antibiotics not to be overprescribed?
2. Which common pathogens have shown to have developed resistance to antibiotics?
3. Which pathogen is of particular concern in relation to resistance to antibiotics and why?
4. Where are antibiotics most likely to be overprescribed?
5. How many Australians had at least one course of antibiotics prescribed in 2017 and how many people die each year as a result of infections from drug-resistant bacteria?
6. How will an increase in drug-resistance pathogens impact on individuals and the community?

11.13 Activities

1. Access the **Universal health coverage** weblinks and worksheets in the Resources tab and then complete the worksheets.
2. Select one of the following examples of the work that has been undertaken by the WHO:
 - Framework Convention for Tobacco Control
 - Global Strategy on Diet, Physical Activity and Health
 - Recommendations on the intake of free sugars to reduce the risk of non-communicable diseases in adults and children.

Research the example selected then answer the following questions:

- a. Briefly outline your chosen example.
- b. Identify the WHO strategic priority evident in the example.
- c. Identify two components of the WHO's work evident in the example.
- d. How does your example promote health and wellbeing and human development?

on Resources

-  **Digital documents** Universal health coverage: Maya worksheet (doc-32229)
Universal health coverage: Right. Smart. Overdue. worksheet (doc-32230)
-  **Weblinks** Universal health coverage: Maya
Universal health coverage: Right. Smart. Overdue.

11.13 Exercises

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To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

11.13 Quick quiz 

11.13 Exercise

11.13 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8

Test your knowledge

1. When was the WHO established?
2. What is the WHO's mission?
3. What are the three principles that underpin the WHO's work?
4. Identify and explain three core functions of the WHO.

- Briefly outline the WHO's three strategic priorities.
- Copy the table below. Beside each of the examples given, list the name of the relevant WHO strategic priority.

Example	Relevant WHO strategic priority
Ensure people can access high-quality essential medicines when they need them at an affordable cost.	
Put in place recommended actions to reduce the spread of a new disease.	
Ensure all people have access to health services during a health emergency.	
When people are sick ensure they can access medical treatment at an affordable cost.	
Address risk factors such as tobacco and alcohol misuse.	
Work to eliminate diseases such as polio and tuberculosis.	
Investing in sexual and reproductive health services.	

Apply your knowledge

- Explain the purpose of the International Health Regulations (2005). Use a relevant example to illustrate your answer.
- Using the WHO strategic priorities as the basis for your response, explain how the WHO may work to reduce a disease such as tuberculosis.

11.13 Quick quiz

on

11.13 Exercise

11.13 Exam questions

Question 1 (5 marks)

Source: VCE 2019, Health and Human Development Exam, Q.7; © VCAA

World Antibiotic Awareness Week aims to increase awareness of global antibiotic resistance and to encourage best practices among the general public, health workers and policy makers to avoid the further emergence and spread of antibiotic resistance.

A global action plan to tackle the growing problem of resistance to antibiotics and other antimicrobial medicines was endorsed at the Sixty-eighth World Health Assembly in May 2015. One of the key objectives of the plan is to improve awareness and understanding of antimicrobial resistance through effective communication, education and training.



Source: World Health Organization, text from <www.who.int/campaigns/world-antibiotic-awareness-week>, infographic from <www.who.int/campaigns/world-antibiotic-awareness-week/world-antibiotic-awarenessweek-2018/advocacy-material>

- Identify and describe one World Health Organization (WHO) strategic priority reflected in the information above. **3 marks**
- Identify one example of the work of the WHO and outline how this example contributes to good health and wellbeing. **2 marks**

Question 2 (3 marks)

Source: VCE 2017, Health and Human Development Exam, Q.11.b.i; © VCAA

Universal health coverage is one of the priorities of the WHO. **Outline** what is meant by universal health coverage.

Question 3 (3 marks)

Source: VCE 2017, Health and Human Development Exam, Q.11.b.ii; © VCAA

Explain how achieving universal health coverage can promote global health.

Question 4 (3 marks)



Source: Adapted from: <http://www.who.int/media/homepage/uhc-infographic.jpg?ua=1>

Identify the priority of the WHO represented in the infographic above. Use information from the infographic to **justify** your choice.

Question 5 (4 marks)

Identify and **describe** two of the World Health Organization priorities.

More exam questions are available in your learnON title.

11.14 KEY SKILLS

11.14.1 Describe the objectives of the UN's Sustainable Development Goals and justify their importance

tivd-1928

KEY SKILL Describe the objectives of the UN's Sustainable Development Goals and justify their importance

Tell me

To address this skill, you need to understand why the United Nations developed the Sustainable Development Goals, what they are, when they were developed, the period they are relevant for and their objectives. This skill also requires you to be able to justify why they are important by explaining the reasons they were introduced.

Show me

An example of how you might address this skill is:

The Sustainable Development Goals (SDGs), also known as the global goals, were developed by the United Nations and commenced in 2016. They direct global action until 2030. They focus on five broad areas of importance, which are people, planet, prosperity, peace and partnership. They provide a set of goals and targets that are integrated and interdependent and are relevant for all countries, not just low- and middle-income countries. They promote partnerships and recognise that improvements cannot be achieved in isolation or by individual countries themselves.¹

The objectives of the SDGs are to end extreme poverty, fight inequality and injustice and address climate change. The SDGs are interconnected and their achievement requires collaboration across all sectors.²

They were introduced for three main reasons:

- There was a need for a new set of goals to guide global action when the Millennium Development Goals expired in 2015.
- Progress that had been made in a wide range of areas was not shared equally and many people were being left behind. These tended to be the poorest and those who are disadvantaged due to sex, age, disability, ethnicity and geographical location.
- New global challenges had emerged that needed to be addressed.³

1 Outlines who developed the SDGs, when they were introduced and the time period, what they are and why they were introduced.

2 The objectives are outlined clearly.

3 A justification is provided for why they were introduced.

Practise the key skill

Read the following information and then answer the questions.

'The 17 Sustainable Development Goals are our shared vision of humanity and a social contract between the world's leaders and the people', said UN Secretary-General Ban Ki-moon.

'They are a to-do list for people and planet, and a blueprint for success.' The SDGs, unanimously adopted by the UN's 193 Member States at an historic summit in September 2015, address the needs of people in both developed and developing countries, emphasising that no one should be left behind.

Source: Adapted from United Nations Sustainable Development Blog, <http://www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/>

1. What are the objectives of the Sustainable Development Goals?
2. Explain why they were introduced.
3. Provide two reasons to justify why they are important.

11.14.2 Describe key features of SDG 3 and analyse its relationships with other SDGs in collaborative approaches to improving health and wellbeing, and human development globally

tlvd-1929

KEY SKILL Describe key features of SDG 3 and analyse its relationships with other SDGs in collaborative approaches to improving health and wellbeing, and human development globally

Tell me

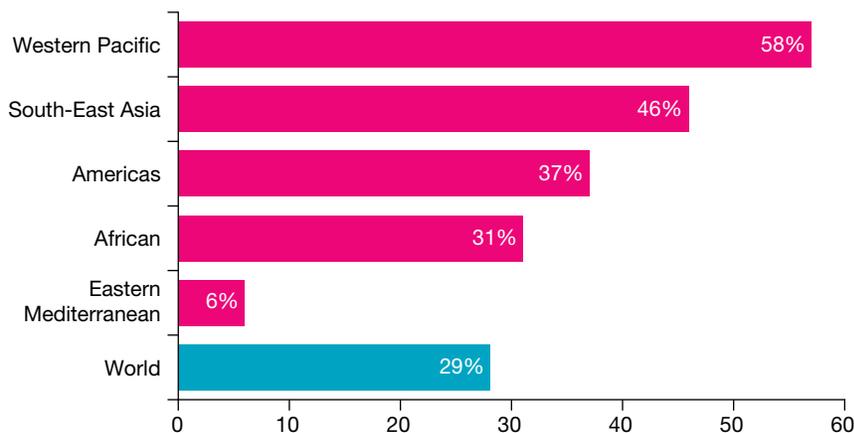
You must be able to accurately name each of the SDGs rather than just list them by number.

There are three components to this skill:

- You must know SDG 3 in detail and be able to describe each of its key features. It might be useful to develop a table that lists each of the features and includes a description of each.
- The second part of the skill requires you to be able to analyse the relationships between SDG 3 and the other selected SDGs in this topic. Different sectors work to achieve different SDGs. However, their work is related to and interconnects with SDG 3 because health and wellbeing and human development is an outcome of all SDGs. This is referred to as collaboration. You need to be able to analyse how the work being done to achieve other SDGs also helps to improve health and wellbeing and human development.

The following example can be used to illustrate this.

FIGURE 11.86 Reduction in malaria mortality rate, by WHO region, 2010–15



Source: World Health Organization, *World Malaria Report 2019*, p. 47.

The information in **FIGURE 11.86** shows the reductions in malaria mortality between 2010 and 2015. Reducing deaths from malaria is part of SDG 3.

- Describe the key features of SDG 3.
- Select one other SDG and explain how collaboration in the achievement of the SDG selected would help further reduce malaria mortality by 2030.
- Explain how reducing malaria will help improve health and wellbeing and human development.

Show me

The key features of **SDG 3: Good health and wellbeing**⁴ are to continue the work already done to reduce maternal and child deaths, and end the epidemics of diseases such as HIV, TB, malaria, neglected tropical diseases, and other communicable diseases such as hepatitis and water-borne diseases. Other new and emerging health

⁴ The names of the relevant SDGs are clearly stated.

and wellbeing issues are also included in this SDG, such as reducing the increasing mortality from non-communicable diseases such as cardiovascular disease, diabetes, cancer and chronic respiratory diseases, promoting mental health and wellbeing, and reducing deaths and injuries from road traffic accidents and from air, water and soil pollution. To achieve these targets, it will be necessary to achieve universal health coverage so all people have access to preventative and curative medical services at an affordable cost. This includes essential medicines and vaccines. Reducing the harmful use of tobacco, alcohol and other drugs is included in this goal, along with the need to provide funds for a well-trained health workforce. Also included is building the capacity of each country to minimise the risk of and manage any potential health risks that develop.⁵

Achieving the targets around reductions in malaria mortality by 2030 is dependent upon action being taken to address climate change.⁶ This is addressed in SDG 13: Climate action. The over-reliance on fossil fuels and the resulting greenhouse gases have contributed to global warming. If this is not addressed, the increase in temperatures will create conditions that are ideal for mosquitoes that carry the malaria virus to breed.⁷ Taking action to develop clean energy sources and reducing vehicle emissions is necessary to prevent these environmental conditions working against other potential gains being made within the health and wellbeing sector alone.⁶

This collaborative approach to reducing malaria mortality will improve health and wellbeing and human development. Malaria is a life-threatening disease and young children and pregnant women are at greater risk of contracting it. Malaria causes fever, headache, diarrhoea and vomiting and, if left untreated, can disrupt blood supply to internal organs causing death. It therefore has a significant impact on physical health and wellbeing. When affected by malaria, people are unable to work and children are unable to attend school. Repeated attacks of malaria means children's education is interrupted and they will not develop the knowledge and skills required to gain employment and earn an income. Parents who have children suffering from malaria are often unable to work as they need to care for their sick children. This impacts on human development as their standard of living and the capacity to take part in their communities is reduced, as well as their ability to have control over the decisions that affect their lives. This also affects mental health and wellbeing. It is therefore important to reduce the incidence of malaria if health and wellbeing and human development are to be promoted.⁸

5 A framework is used to provide detail about the key features of the SDG, including the diseases that are targeted and the interventions needed to bring about changes in their morbidity and mortality rates.

6 The link to another SDG is clearly made, along with the collaborative actions that are included in this SDG.

7 The relationship between the selected SDG and SDG 3 is clearly outlined.

8 The impact on health and wellbeing and human development is explained in terms of how it can be promoted.

Practise the key skill

Read the following information and then answer the questions.

Abida is training to be a nurse in Jalalabad, Afghanistan — a country which has one of the highest maternal and child mortality rates in the world. 'One of my neighbours gave birth,' Abida recalls. 'After delivery, she didn't stop bleeding. She died on the way to town'. UNDP is supporting Afghanistan to train a new generation of female healthcare workers, like Abida. Along with 200 classmates, she will graduate from nursing school to bring much needed health care to women in the country's most remote and disadvantaged areas.

Source: 'The 2013 Agenda in action', UNDP, <http://www.unwomen.org/en/digital-library/publications/2018/2/gender-equality-in-the-2030-agenda-for-sustainable-development-2018>

4. Identify the SDGs being addressed in this program.
5. Explain how this program would help achieve SDG 3.
6. Explain how this program would contribute to health and wellbeing and human development globally.

11.14.3 Explain the priorities and the work of the WHO and discuss how the WHO priorities are reflected in different scenarios



tlvd-1930

KEY SKILL Explain the priorities and the work of the WHO and discuss how the WHO priorities are reflected in different scenarios

Tell me

There are three components to this skill.

- a. The first is to be able to explain each of the three World Health Organization's (WHO) strategic priorities.
- b. The second is to be able to explain the work of the WHO.
- c. The third is to be able to apply the priorities in a range of different scenarios or situations. This could require you to recognise how they are reflected in an example provided or to apply the priorities to suggest actions that could be taken to address a health-related issue.

Use the following example of the work of the WHO to understand this skill. It is important to:

- read the information carefully
- look for examples that show evidence of the work of the WHO. This includes:
 - providing leadership and partnerships to promote health and wellbeing
 - conducting research and providing health and wellbeing information
 - setting norms and standards and providing expertise in all matters relating to health and wellbeing
 - developing policies to help countries act to address issues related to health and wellbeing
 - providing technical support
 - monitoring global health and wellbeing trends.
- list the three WHO strategic priorities and look for evidence in the example that demonstrates one or more of the priorities in action. The three strategic priorities are:
 - Achieving universal health coverage
 - Addressing health emergencies
 - Promoting healthier populations.

Show me

US\$12.9 billion for WHO Global Fund to fight AIDS, Tuberculosis and Malaria

More than US\$12.9 billion has been pledged for the next three years to support the Global Fund to Fight AIDS, Tuberculosis and Malaria. The Global Fund will increase its investments in building resilient and sustainable systems for health and wellbeing to ensure that it achieves maximum impact for disease-specific interventions.

This is important in the move towards universal health coverage.⁹

Epidemics of infectious diseases kill more than 4 million people every year. While significant gains were made during the Millennium Development Goals era, progress has been uneven. In many countries and regions, the epidemics are actually getting worse. In affected countries, the focus should now be on scaling up interventions, expanding multi-sectoral partnerships,¹⁰ addressing biological threats, such as drug resistance, and identifying increased resources to fund programs.

⁹ Achieving universal health coverage is one of the WHO's strategic priorities.

¹⁰ This represents the WHO's work in providing leadership and partnerships to promote health.

The US\$12.9 billion will prevent 300 million infections and save 8 million lives. However, to accelerate progress, much more is needed. There needs to be political and financial commitment, and increased regional and cross-border collaboration, and infectious disease programmes¹¹ should be increasingly integrated with efforts to strengthen health systems.

As countries reduce the burden of infectious diseases, their economies will be stronger, their workforce healthier, and they will be able to focus more resources on other challenges, such as preventing and managing health emergencies, addressing the growing burden of non-communicable diseases,¹² and overcoming the impact of climate change.¹³

The WHO is working very closely with the Global Fund and other partners to provide technical support, conduct research and monitor health and wellbeing trends¹⁴ to help countries accelerate progress, prevent new infections and save lives.

11 Cross-border collaboration represents the WHO's work in building partnerships.

12 Non-communicable diseases are part of the WHO's priority of promoting healthier populations.

13 Overcoming the impact of climate change is addressing the priority of promoting healthier populations.

14 Providing technical support, conducting research and monitoring health trends reflects the work of the WHO.

Practise the key skill

Read the following information about dengue and then answer the questions.

Dengue is a mosquito-borne disease that causes flu-like symptoms. Up to 20 per cent of those suffering from severe dengue can die as a result of the disease. It has continued to be a growing threat for decades.

A high number of cases occur in the rainy seasons of countries such as Bangladesh and India. Now, its season in these countries is lengthening significantly (in 2018, Bangladesh saw the highest number of deaths in almost two decades), and the disease is spreading to less tropical and more temperate countries such as Nepal, that have not traditionally seen the disease. An estimated 40 per cent of the world is at risk of dengue fever, and there are around 390 million infections a year. WHO's Dengue control strategy aims to reduce deaths by 50 per cent by 2020.

Source: Adapted from WHO, 'Ten threats to global health in 2019', <https://www.who.int/emergencies/ten-threats-to-global-health-in-2019>

7. Explain two ways that the WHO might work to assist countries to reduce deaths from dengue and prevent the spread of the disease.
 8. Use two of the WHO strategic priorities and discuss how they could be used to reduce the spread of dengue and reduce deaths by 50 per cent.
-

11.15 Review

11.15.1 Topic summary

11.2 Objectives and rationale for the Sustainable Development Goals and key features of SDG 3

- The Sustainable Development Goals (SDGs), sometimes referred to as the global goals, lead action from 2016–2030 in five broad areas of importance, which include people, planet, prosperity, peace and partnership.
- There were three main reasons (or rationale) for the introduction of the SDGs. There was a need for a new set of goals to guide global action when the Millennium Development Goals expired in 2015; there was uneven progress across regions and countries; and new global challenges had emerged that needed to be addressed.
- The objectives of the SDGs are to end extreme poverty, fight inequality and injustice and address climate change.
- The SDGs are interconnected and their achievement requires collaboration across all sectors.

11.3 Key features of Sustainable Development Goal 3: Good health and wellbeing

- SDG 3: Good health and wellbeing contributes to the achievement of many of the SDGs, which in turn help promote the achievement of good health and wellbeing.
- SDG 3 seeks to reduce maternal and child mortality rates; end epidemics of communicable diseases; reduce premature mortality from communicable diseases; reduce substance misuse, particularly from alcohol and tobacco smoking; reduce deaths from air, water and soil pollution; reduce traffic accidents; and promote mental health and wellbeing.
- SDG 3 includes providing universal health coverage and access to essential medicines.
- Universal health coverage has two main elements, which include expanding health services and reducing the costs of healthcare.

11.4 SDG 3 Key feature of maternal and child health and wellbeing

- Improvements in maternal mortality have been mainly due to better access to prenatal care to monitor the health and wellbeing of the mother and baby and the presence of skilled birth attendants during delivery.
- Access to reproductive health services helps families control the number of children they have and the timing and spacing of births.
- SDG 3 aims to prevent deaths in newborns and those under five. Half of all newborn deaths occur in the first 24 hours after being born and 75 per cent occur in the first week after birth.

11.5 SDG 3 Key feature of communicable diseases

- Communicable diseases such as COVID-19, HIV/AIDS, tuberculosis, malaria, hepatitis, water-borne diseases and other tropical diseases contribute significantly to the global burden of disease.
- AIDS damages and weakens the body's immune system, leaving it unable to fight infections.
- HIV/AIDS is much more common in low-income countries, and there is currently no cure and no vaccine. The use of antiretroviral medication (ART) is successful in delaying and, in some cases, preventing the HIV virus from progressing to AIDS.
- Ending the AIDS epidemic requires access to healthcare, education, the removal of discrimination and stigma, and the development of a vaccine.
- Malaria is a life-threatening disease transmitted through the bite of an infected mosquito and can be prevented by using insecticide-treated bed nets, spraying insecticides in homes and using antimalarial medicines.
- Tuberculosis is a disease affecting the lungs and can be spread through coughing and sneezing. It can be treated with medication and prevented through vaccination.
- Neglected tropical diseases include 18 different diseases that mainly occur in tropical environments and very poor countries where people lack access to safe water, sanitation and healthcare.

- Morbidity and mortality from neglected tropical diseases can be reduced by providing drugs that can prevent and treat the diseases, providing vector control, providing veterinary public health measures when the diseases are caused by animals, and improving water and sanitation.
- Hepatitis is caused by a viral infection that leads to inflammation of the liver. Hepatitis B and C are spread through contact with infected body fluids. Hepatitis A and E result from ingesting contaminated water and food.

11.6 SDG 3 Key feature of non-communicable diseases

- Non-communicable diseases, such as cardiovascular disease, cancer, diabetes and chronic respiratory disease, affect people in low, middle- and high-income countries.
- Risk factors for non-communicable diseases include tobacco use, insufficient physical activity, harmful consumption of alcohol and poor diet.
- Good mental health and wellbeing is important in enabling people to achieve their potential and contribute to the community.
- SDG 3 aims to reduce morbidity and mortality rates due to road traffic accidents, which requires a coordinated approach across many sectors, such as health and wellbeing, education, transport and police.
- Harmful consumption of drugs, particularly alcohol, is a health issue worldwide.
- Cannabis is the most common illicit drug used, followed by amphetamines, cocaine and opioids.
- Environmental hazards such as air, water and soil pollution is responsible for one in four deaths worldwide.
- Air pollution accounts for the greatest burden of disease from pollution and is caused using fuels such as wood, charcoal, coal and dung for indoor cooking.
- Outdoor air pollution is caused by vehicle emissions and greenhouse gases.

11.7 The relationships between SDG 3 and SDG 1

- SDG 1: No poverty. When people are poor, they are unable to afford food, clothing, shelter, safe water, healthcare and education, and lack opportunities to participate in decisions that affect their lives and their communities.
- When a country is poor there is not enough money to provide public health services such as safe water and sanitation, healthcare, education and social security benefits.
- Poverty contributes to low levels of childhood vaccination, low levels of literacy and high death rates from infectious diseases such as tuberculosis, measles, whooping cough, cholera, malaria and tetanus.
- Poverty can occur due to discrimination and social exclusion. People most at risk are women, youth, the elderly, migrants and those with a disability.
- Actions that need to be taken to end poverty and achieve SDG 1 are directly linked to the actions that are needed to achieve good health and wellbeing.

11.8 The relationships between SDG 3 and SDG 2

- SDG 2: Zero hunger. Hunger and malnutrition are the biggest contributors to child mortality, causing 45 per cent of preventable deaths in children under five.
- Deficiencies of micronutrients, especially iron, Vitamin A, zinc and iodine, are responsible for many deaths and disability, particularly in women and children.
- Actions that need to be taken to achieve SDG 2: Zero hunger are linked to the achievement of SDG 3.

11.9 The relationships between SDG 3 and SDG 4

- SDG 4: Quality education. This aims to ensure that females and males have equal access to quality pre-primary, primary, secondary and tertiary education and develop the vocational skills needed for employment.
- Factors affecting girls getting an education include drought, lack of access to safe water and sanitation, food shortages, conflict, poverty, child labour and HIV/AIDS.
- Actions taken to achieve quality education are linked to the achievement of SDG 3. An educated and skilled workforce means higher economic growth and more funding for the provision of universal health coverage. Child and maternal health and wellbeing will improve because educated girls have fewer children and are more likely to send their children to school.

11.10 The relationships between SDG 3 and SDG 5

- SDG 5: Gender equality is about ending discrimination and violence against women and girls by addressing the barriers that exist to gender equality.
- Gender equality is when women and men have the same level of power and control over all aspects of their lives. Many women face discrimination in all aspects of life.
- Women are underrepresented in political and economic decision-making processes and are often discriminated against by the laws that exist.
- Educating and empowering women increases their chances of getting a job, staying healthy and participating in society.
- Actions taken to achieve gender equality are linked to the achievement of SDG 3. When women are given the same opportunities as men, they are more empowered and can participate in decision-making, which promotes health and wellbeing.

11.11 The relationships between SDG 3 and SDG 6

- SDG 6: Clean water and sanitation. Water transmits disease when it is contaminated by bacteria, viruses, parasites or other micro-organisms, or through contamination from industrial and agricultural waste.
- Diarrhoea is the most widely known disease linked to contaminated water, but other diseases caused by contaminated water include parasitic worm infestations, cholera, dysentery, hepatitis A, typhoid and trachoma.
- More than 80 per cent of wastewater due to human activities is discharged into rivers or oceans.
- Ten per cent of the population is thought to consume food that is irrigated by wastewater, which puts their health and wellbeing at risk.
- Actions taken to achieve clean water and sanitation underpin the ability to achieve SDG 3. Without clean water and sanitation SDG 3 is difficult to achieve.

11.12 The relationships between SDG 3 and SDG 13

- SDG 13: Climate action. This addresses the impact of climate change and the need to take urgent action to reduce the impact.
- The over-reliance on fossil fuels and greenhouse gases has contributed to global warming and increasing sea levels.
- Climate change is expected to bring about an increase in infectious diseases, allergies and asthma, deaths from cardiovascular diseases and respiratory diseases, and hunger and malnutrition.
- The global community must work together to develop cleaner energy systems, promote energy-efficient public transport and reduce carbon emissions.
- SDG 13 and SDG 3 are closely connected. Achieving good health and wellbeing will not be possible unless action is taken to address climate change and its corresponding impacts on health and wellbeing.

11.13 The UN's Sustainable Development Goals and the World Health Organization

- The work of the WHO involves six components:
 - Provide leadership and create partnerships to promote health and wellbeing
 - Conduct research and provide health and wellbeing information
 - Set norms and standards and promote and monitor their implementation
 - Develop policies to assist countries to take action to promote health and wellbeing
 - Provide technical support and help build sustainable health systems
 - Monitor health and wellbeing and assess health and wellbeing trends.
- To provide direction and focus to their work, the WHO has developed three strategic priorities:
 - Achieving universal health coverage
 - Addressing health emergencies
 - Promoting healthier populations.

11.15.2 Key terms

Adolescent/ce a stage of the lifespan that commences at puberty and ends when a person turns 20 years of age. It is a biological marker that signals the transition to adulthood and is included as part of youth.

Antenatal care healthcare provided to women during pregnancy and just after birth

Birth asphyxia a condition in which a baby's brain and other organs do not get enough oxygen before, during or immediately after birth. It can cause temporary or permanent damage.

Caesarean section a surgical procedure in which a baby is born through a cut made in the mother's abdominal wall and the wall of the uterus rather than through the normal birthing process

Degradation the deterioration of the environment through the depletion of resources, such as clean air, water and soil, the destruction of ecosystems, and the extinction of wildlife

Ecosystem a community of living things and the non-living components of the environment in which they live. An ecosystem can include plants, animals, micro-organisms, water, air, soil and rocks.

Essential medicines a range of medicines that meet the priority healthcare needs of the population

Extreme poverty living on less than US\$1.90 per day

Extremism belief in and support for ideas that are very far from what most people consider correct or reasonable

First trimester the first three months of pregnancy

Food security 'the state in which all persons obtain nutritionally adequate, culturally appropriate, safe food regularly through local non-emergency sources' (VicHealth, 2008)

Hunger the continuing lack of food needed for an active and healthy life

Indivisible unable to be divided or separated

Interdependent mutually reliant on each other

Maternal mortality ratio the number of mothers who die as a result of pregnancy, childbirth or associated treatment per 100 000 women who give birth

Maternal mortality death of a mother during pregnancy, childbirth or within six weeks of delivery

Microfinance small, low-cost financial services for poor people that involve low-interest loans to develop small businesses

Millennium Development Goals a set of goals that were introduced in 2000 to guide global action until 2015

Modern contraceptive methods technological advances designed to overcome biology and enable couples to have sexual intercourse at any mutually-desired time

Neonatal period the first 28 days after birth

Open defecation using open spaces rather than a toilet to pass human waste

Poverty not having the resources to meet basic needs such as food, clothing and shelter

Schistosomiasis a worm infection that occurs when people swim, bathe or have contact with fresh water contaminated with human excreta

Social protection measures measures put in place to prevent individuals and families from suffering from poverty because of a crisis or another unexpected event. Measures include the provision of healthcare, and income security for children, those who become sick or disabled and the elderly.

Stakeholders people, groups and organisations who are involved in or affected by a course of action

Stillbirth the birth of an infant that has died in the womb

Sustainable agriculture the capacity of agricultural practices over time to provide sufficient food in ways that are economically efficient and profitable, socially responsible and environmentally sound

Sustainable development development that meets the needs of the present without compromising the ability of future generations to meet their own needs

Trachoma a bacterial infection of the eye that can cause complications including blindness

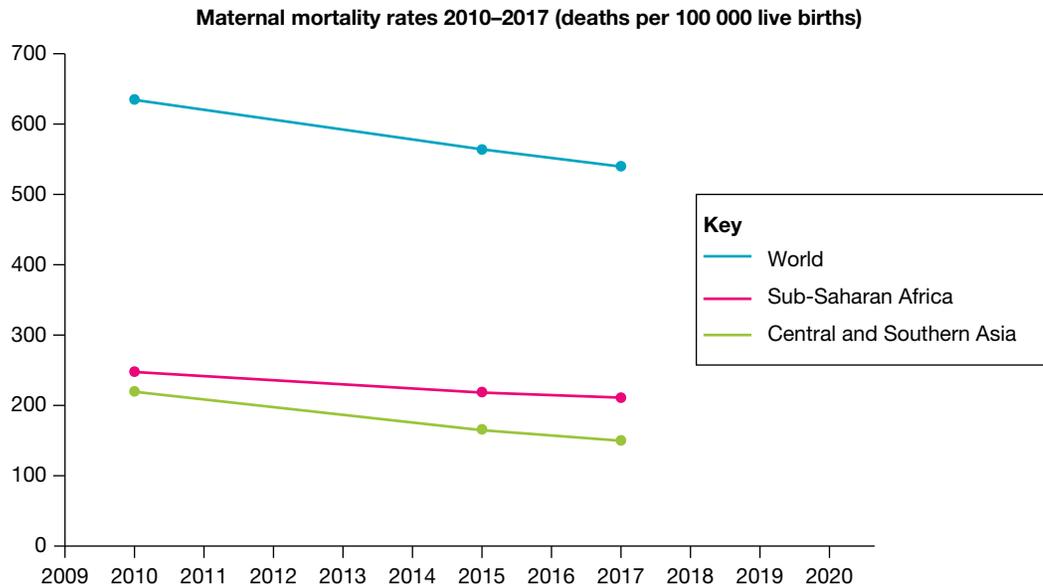
Tropical diseases a group of diseases that mainly occur in tropical and subtropical environments and are most common in countries where people lack access to safe water and sanitation

Vector control actions taken to control and eradicate the carriers of disease and infection

11.15.3 Extended response: build your exam skills

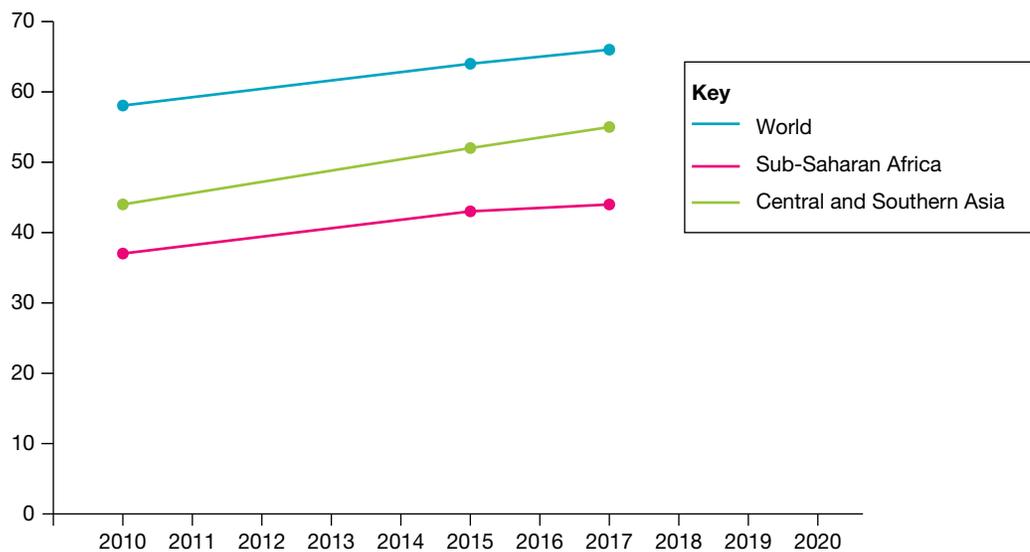
tlvd-2886

Source 1



Source: United Nations Economic and Social Council, *Progress towards the Sustainable Development Goals*, <https://unstats.un.org/sdgs/files/report/2020/secretary-general-sdg-report-2020-Statistical-Annex.pdf>, p 18

Universal Health Coverage: Coverage of essential health services 2010–2017 (percentage)



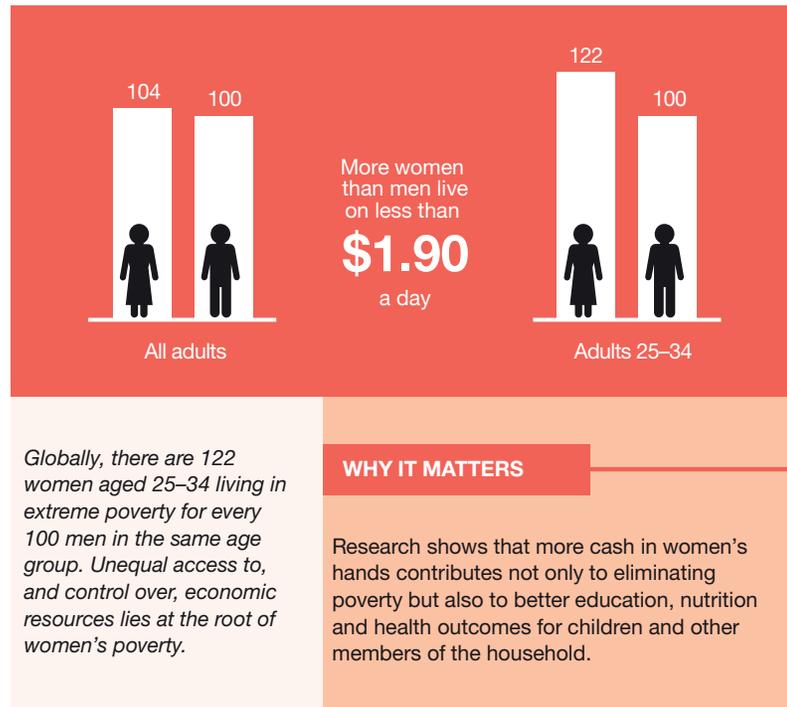
Source: United Nations Economic and Social Council, *Progress towards the Sustainable Development Goals*, <https://unstats.un.org/sdgs/files/report/2020/secretary-general-sdg-report-2020-Statistical-Annex.pdf>, p 33

Source 2

Marriage before the age of 18 is a human rights violation, mostly affecting girls, and can lead to a lifetime of disadvantage and deprivation. One in five women (20.2 per cent) between the ages of 20 and 24 was married before the age of 18 around 2019, compared with about one in four (23.8 per cent) 10 years earlier. Southern Asia has seen the greatest decline over this period. Today, the risk of child marriage is highest in sub-Saharan Africa, where more than one in three women (34.5 per cent) between the ages of 20 and 24 were married before the age of 18. School closures and widening poverty as a result of the pandemic could put more girls at risk.

Source: <https://unstats.un.org/sdgs/report/2020/goal-05/>

Source 3



Source: <https://www.unwomen.org/en/digital-library/multimedia/2018/7/infographic-why-gender-equality-matters-to-achieving-all-17-sdgs>

Use information from each of the sources provided and your own knowledge to discuss:

- the relationship between maternal mortality rates and universal health coverage (coverage of essential health services)
- why collaborative action across one other SDG will be necessary to achieve the 2030 target of reducing maternal mortality to less than 70 per 100 000 live births.

8 marks

TIP

When considering the relationship between maternal mortality rates and universal health coverage, read the graph axes carefully and use specific data in your response that demonstrates a very clear understanding of how they relate.

Your colour coding should be used to identify relevant points in each source according to the two key requirements of the question.

Achieving the 2030 target for reducing maternal mortality relies on action being taken across several other SDGs. You should select the one that is most relevant given the source material provided. You will then be able to discuss how action taken in the achievement of the selected SDG will help achieve a reduction in maternal mortality.

11.15 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

11.15 Exam questions

11.15 Exam questions

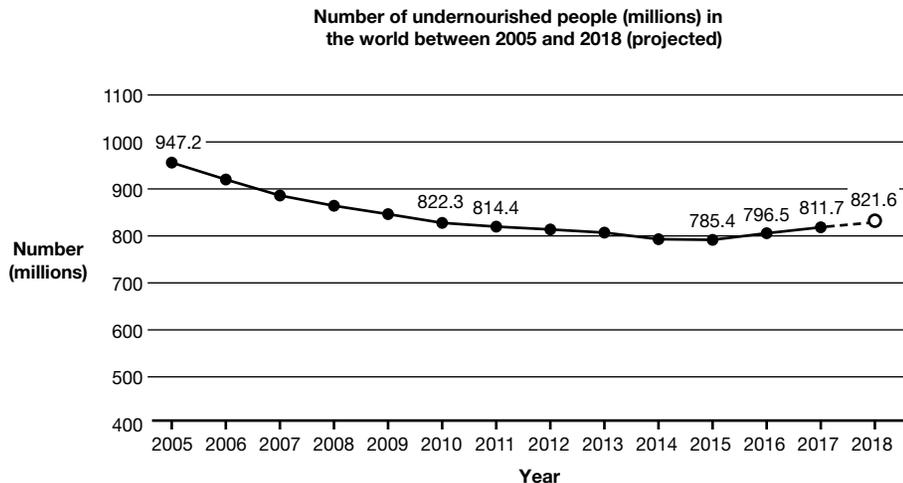
Question 1 (8 marks)

Source: VCE 2020, *Health and Human Development Exam*, Q.11 © VCAA

Consider the following three sources relating to global trends and other factors.

Source 1

Number of undernourished people (millions) in the world between 2005 and 2018 (projected)



Source: Adapted from FAO, IFAD, UNICEF, WFP and WHO, *The State of Food Security and Nutrition in the World 2019: Safeguarding against economic slowdowns and downturns*, Rome, FAO, 2019, P. 6; licence CC BY-NC-SA 3.0 IGO

Source 2

In Yemen, home to Moteab and his family, protracted conflict ... turned daily life into a 'living hell'. His father's job, transporting goods in a wheelbarrow, provided the family with the bare minimum of food — bread for breakfast, vegetables, usually potatoes, for lunch and anything left over for dinner.

By the time Moteab turned 2 years old, the combination of poverty and protracted conflict left him in a struggle for his life ... After [Moteab had suffered] seven months of repeated illnesses with vomiting, diarrhoea and weight loss, his mother was directed to a free health centre in Abs, where [Moteab] was diagnosed with SAM [severe acute malnutrition]. Moteab is just one of the 400 000 children in Yemen who suffered from SAM in 2018.

Source: UNICEF, *The State of the World's Children 2019: Children, food and nutrition: Growing well in a changing world*, UNICEF, New York, 2019, p. 116

Source 3

What do young people think about healthy eating?

'We lack money here to stay healthy ... Our family is unable to find good jobs.' *Girl, 16, India*

'Meat is not available. We have money to buy meat, but the place is too far away.' *Girl, 14, Ghana*

'Unhealthy food is easier to come by.' *Boy, 17, USA*

'If I work ... to have money, then I will buy food for my family.' *Boy, 13, the Sudan*

Source: UNICEF, *The State of the World's Children 2019: Children, food and nutrition: Growing well in a changing world*, UNICEF, New York, 2019, pp. 26 and 27

Use information from all three sources and your own knowledge to **discuss**:

- how global trends and other factors have an impact on achieving SDG 2 'Zero hunger'
- the relationship between SDG 2 and two features of SDG 3 'Ensure healthy lives and promote wellbeing for all at all ages'.

Question 2 (6 marks)

Source: VCE 2020, Health and Human Development Exam, Q.13 © VCAA

Worldwide more than 140 000 people died from measles in 2018, according to new estimates from the World Health Organization (WHO) and the United States Centers for Diseases Control and Prevention (CDC). These deaths occurred as measles cases surged globally, amidst devastating outbreaks in all regions.

Most deaths were among children under 5 years of age ...

...

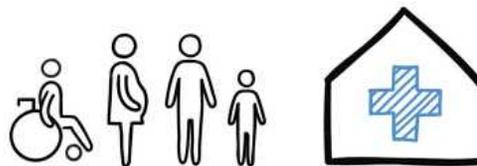
M&RI [Measles and Rubella Initiative] is a global partnership founded by the American Red Cross, the CDC, the United Nations Foundation, UNICEF and WHO, that is committed to achieving and maintaining a world without measles [and] rubella ... Founded in 2001, the Initiative has helped vaccinate over 2.9 billion children and save over 21 million lives by increasing vaccination coverage, improving disease response, monitoring and evaluation, and building public confidence and demand for immunisation.

Source: World Health Organization, 'More than 140 000 die from measles as cases surge worldwide', joint news release, 5 December 2019

- Identify** and **describe** one WHO strategic priority that is reflected in the information above. Use **one** example from the information above to support your response. **3 marks**
- Explain** how the Measles and Rubella Initiative could promote human development. **3 marks**

Question 3 (8 marks)

Investments in health systems
could prevent
**97 million premature
deaths by 2030**



SDG HEALTH PRICE TAG
www.who.int



Source: <https://www.who.int/sdg/infographics/en/>

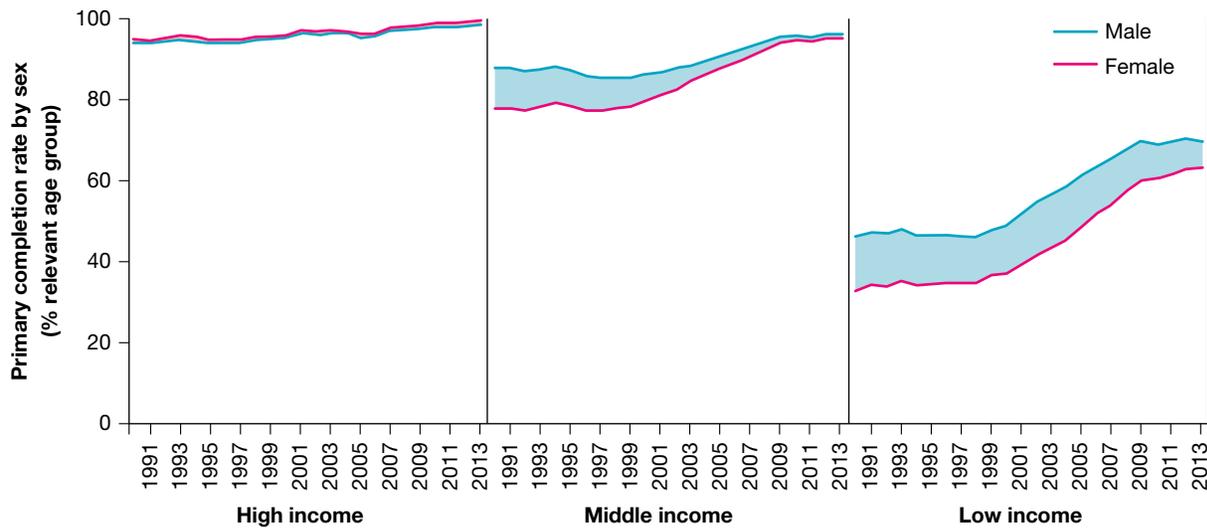
- Outline** the relevant WHO health priority represented in the image above. **2 marks**
- Select one example of a communicable disease and one example of a non-communicable disease and **explain** how investments in health care systems could help prevent premature deaths. **6 marks**

Question 4 (9 marks)

FIGURE 11.87 shows the gap in the completion of primary education between girls and boys for high-income, middle-income and low-income countries.

- Which type of country has the highest gender gap in primary school completion? **1 mark**
- Explain** two reasons for this. **2 marks**
- Name** one SDG that this information is related to. **1 mark**
- Explain** how reducing the gender gap in primary school completion could assist in achieving SDG 3. **3 marks**
- Explain** how reducing the gender gap in primary school completion could improve human development. **2 marks**

FIGURE 11.87 Primary completion rate by sex (percentage relevant age group)



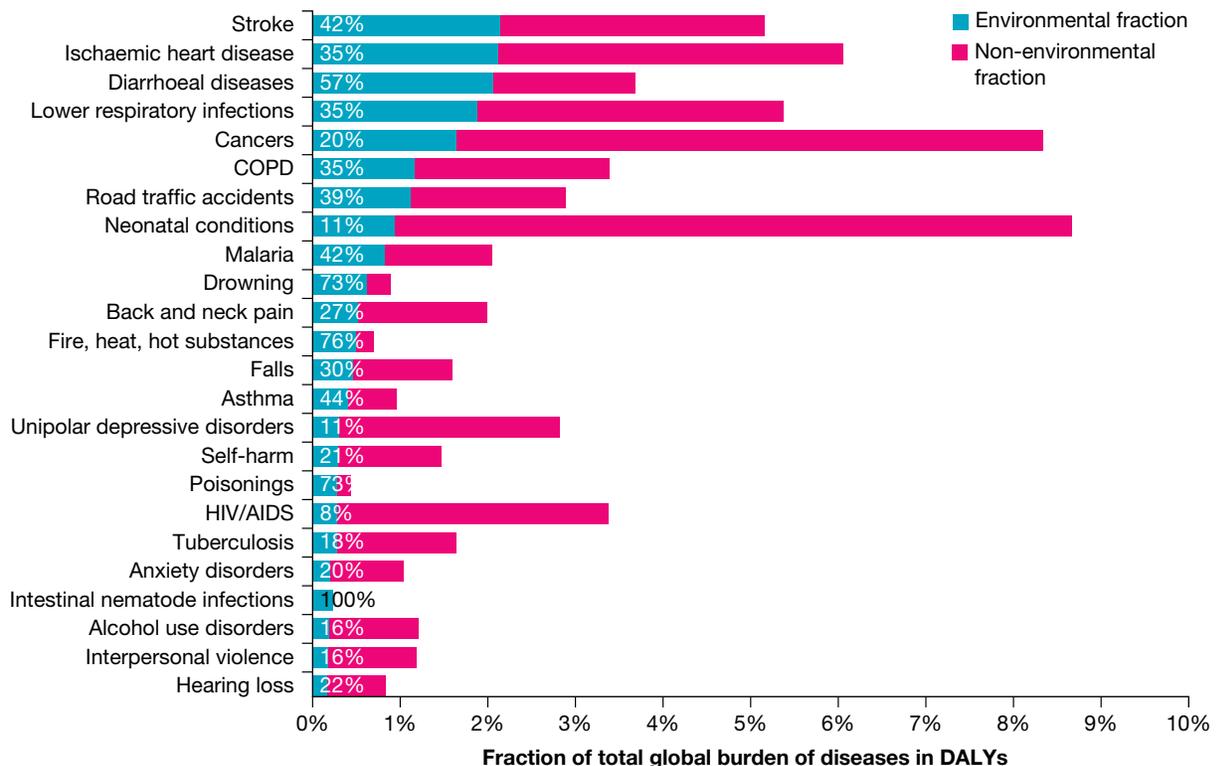
Source: World Bank, 2019

Question 5 (10 marks)

Use **FIGURE 11.88** to answer the following questions:

- a. Explain three key features that are part of SDG 3. 3 marks
- b. Select two examples of diseases from the figure that are a focus of the WHO strategic priorities. Outline actions the WHO might take to reduce the global burden of disease. 4 marks
- c. Select an example of a disease with a large environmental contribution and explain how action to address SDG 13 will help achieve improvements in health and wellbeing. 3 marks

FIGURE 11.88 Diseases with the largest environmental contribution



Source: World Health Organization, 2019



Resources



Digital document

Key terms glossary (doc-36133)



Exam question booklet

Topic 11 Exam question booklet (eqb-0065)



Interactivities

Crossword (int-6899)

Definitions (int-6900)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 11 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 11.1 Key terms glossary (doc-36133)
- 11.2 SDG worksheet (doc-32226)
- 11.7 Neglected tropical diseases worksheet (doc-32231)
- 11.8 Undernutrition worksheet (doc-32232)
- End malnutrition worksheet (doc-32227)
- 11.9 Quality education worksheet (doc-32233)
- 11.10 Gender equality worksheet (doc-32234)
- 11.11 Clean water and sanitation worksheet (doc-32235)
- 11.12 Climate change worksheet (doc-32238)
- 11.13 Universal health coverage:
Maya worksheet (doc-32229)
- Universal health coverage: Right. Smart. Overdue.
worksheet (doc-32230)
- 11.15 Summary (doc-36146)
- Key terms glossary (doc-36133)

Exam question booklets

- 11.1 Topic 11 Exam question booklet (eqb-0065)
- 11.15 Topic 11 Exam question booklet (eqb-0065)

Teacher-led videos

- 11.2 Features of each SDG (tlvd-0256)
- 11.7 Interrelationships between the Sustainable Development Goals (SDGs) (tlvd-0257)
- 11.13 WHO's new priorities (tlvd-0258)
- 11.14 Key skill: Describe the objectives of the UN's Sustainable Development Goals and justify their importance (tlvd-1928)
- Key skill: Describe key features of SDG 3 and analyse its relationships with other SDGs in collaborative approaches to improving health and wellbeing, and human development globally (tlvd-1929)
- Key skill: Explain the priorities and the work of the WHO and discuss how the WHO priorities are reflected in different scenarios (tlvd-1930)
- 11.15 Extended response: build your exam skills (tlvd-2886)

Weblinks

- 11.2 SDG
- 11.7 Neglected tropical diseases
- 11.8 Undernutrition
- Malnutrition
- 11.9 Quality education
- 11.10 Gender equality
- 11.11 Clean water and sanitation
- 11.12 Climate change 1
- Climate change 2
- 11.13 Universal health coverage: Maya
- Universal health coverage: Right. Smart. Overdue.

Interactivities

- 11.5 Global trends in estimated TB incidence and mortality rates, 2000–17 (int-8505)
- Global burden on NTDs (ranking based on the DALY in 2013, the latest data available.) (int-8506)
- 11.6 Adult obesity is rising globally (int-8507)
- Changes in childhood obesity rates, 2000–19 (int-8508)
- 11.10 The rates of child marriage have declined, particularly in southern Asia, however, 23.8 per cent girls and women today were married in childhood (int-8509)
- 11.15 Crossword (int-6899)
- Definitions (int-6900)

To access these online resources, log on to www.jacplus.com.au.

Australian aid and non-government organisations (NGOs)

12

LEARNING SEQUENCE

12.1 Overview.....	685
12.2 Types of aid	686
12.3 The features of Australia's aid program	694
12.4 The Australian government's aid priorities.....	700
12.5 World Vision and its role in promoting health and wellbeing and human development globally	712
12.6 Red Cross and its role in promoting health and wellbeing and human development globally	717
12.7 Oxfam and its role in promoting health and wellbeing and human development globally	722
12.8 KEY SKILLS.....	730
12.9 Review	735



12.1 Overview

Key knowledge	Key skills
The purpose and characteristics of different types of aid including emergency, bilateral and multilateral	Describe and justify different types of aid
Features of Australia's aid program including its priority areas and the types of partnerships involved	
The role of non-government organisations in promoting health and wellbeing, and human development	Explain and evaluate the role of non-government organisations in promoting health and wellbeing, and human development globally

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Aid	Non-government organisation (NGO)
Bilateral aid	Non-government organisation (NGO) aid
Emergency aid	Official Development Assistance (ODA)
Infrastructure	Private sector
Multilateral aid	Transnational

Exam terminology

Describe Provide a general description

Justify Give reasons and/or evidence to support a point of view

Explain Make plain, make clear (may require reasons)

Evaluate Make a judgement, weigh up the pros and cons)

Resources

-  **Digital document** Key terms glossary (doc-36134)
-  **Exam question booklet** Topic 12 Exam question booklet (eqb-0066)

12.2 Types of aid

KEY CONCEPT Different types of aid and how they promote health and wellbeing, and human development

Australia, like most other high-income countries, provides **aid** or **Official Development Assistance (ODA)** to low- and middle-income countries. Aid can be described as assistance given to countries or communities in the event of a crisis or for the development of long-term sustainable improvements.

Aid assistance given to countries or communities in the event of a crisis or for the development of long-term sustainable improvements

Official Development Assistance (ODA) financial assistance provided by donor government agencies to low- and middle-income countries or to multilateral aid agencies. Also known as aid.

12.2.1 Different types of aid

The main types of aid provided to low- and middle-income countries are emergency or humanitarian aid, bilateral aid and multilateral aid.

FIGURE 12.1 Summary of the main types of aid

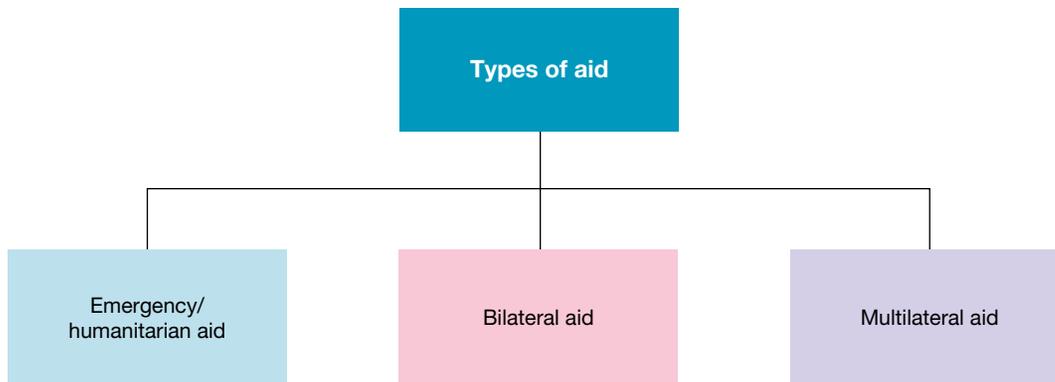


FIGURE 12.2 Australian aid, including blankets, tarpaulins, hygiene kits and water purification tablets, for delivery to Indonesia following an earthquake.



Emergency or humanitarian aid

Emergency aid or humanitarian aid is the rapid assistance given to people or countries in immediate distress to relieve suffering during and after emergencies such as conflict and natural disasters, such as floods, tsunamis or earthquakes. It is designed to be short-term and is usually needed to keep people alive. Emergency aid usually includes the provision of food, water, medicines and shelter, or it could involve personnel, such as health workers, doctors or emergency workers from other countries or aid organisations.

The purpose of this type of aid is to respond quickly and effectively to address the immediate needs of the affected communities and, in this way, helps improve short-term health and wellbeing. Emergency aid does not address the underlying causes of poverty. Emergency aid should cease once the emergency is over and people's lives are no longer in danger. Providing emergency aid beyond this could lead to countries becoming dependent upon handouts rather than support to rebuild their communities for longer term **sustainable development**. Australia provides aid to countries in times of natural disasters by providing food supplies, medical teams and equipment, transport, law and order personnel, and communication resources.

Emergency aid rapid assistance given to people or countries in immediate distress to relieve suffering during and after emergencies such as wars and natural disasters, for example floods, tsunamis or earthquakes. Emergency aid is also called 'humanitarian aid'.

Sustainable development development that meets the needs of the present without compromising the ability of future generations to meet their own needs

Bilateral aid the provision of aid from the government of one country to the government of another country

TABLE 12.1 Summary of emergency or humanitarian aid

Description	Purpose	Examples	Examples of how it promotes health and wellbeing	Examples of how it promotes human development
Immediate assistance given to people or countries in immediate distress to relieve suffering during and after emergencies such as conflict or natural disasters	Short-term assistance designed to address immediate needs and keeps people alive	<ul style="list-style-type: none"> • Providing food, clothing, healthcare and shelter following a natural disaster such as an earthquake • Providing health workers or emergency services workers to assist after a country has been affected by a cyclone • Assisting with law and order following conflict • Providing personal, protective equipment and medical supplies to help countries respond to COVID-19 	<ul style="list-style-type: none"> • Provides the necessary needs such as clean water, food, healthcare and shelter, which aims to protect people from communicable diseases and to keep people alive, which promotes physical health and wellbeing • This will also promote mental health and wellbeing as the supply of emergency needs can reduce stress and anxiety in the short term • Improves short-term health and wellbeing and is not designed to be long term 	<ul style="list-style-type: none"> • Keeps people alive to support further actions to promote longer-term human development • Helps preserve human rights as a condition for human development

Bilateral aid

Bilateral aid is aid one government provides to the government of another country. The purpose of bilateral aid is to help reduce poverty and bring about long-term sustainable development by helping governments of recipient countries strengthen their economic, political, health and education systems and eventually become self-sufficient.

Through consultation, the donor country works with the government of the country receiving the aid to ensure that the programs implemented meet the needs of the country and its people. This consultation process builds important relationships and helps ensure that the proposed programs meet the donor country's aid policies and its capacity to assist. The programs may range from small, community-based projects, such as immunisation programs, to large regional development schemes such as the provision of a water treatment plant and other **infrastructure** projects.

Bilateral aid is therefore designed to promote health and wellbeing, and create the conditions that underpin human development (see **TABLE 12.2**).

An example of bilateral aid is the Australian government providing funding for the government of Papua New Guinea to implement prevention, treatment, counselling and education programs in relation to HIV/AIDS; another is the Australian government providing funds and personnel to help build a bridge in Samoa.

FIGURE 12.3 In the Philippines, tents were supplied to give families a place to live when their homes were destroyed by typhoon Haiyan in 2013.



Infrastructure the physical and organisational structures, facilities and systems (e.g. buildings, roads, power supplies) needed for the operation of a society

TABLE 12.2 Summary of bilateral aid

Description	Purpose	Examples	Examples of how it promotes health and wellbeing	Examples of how it promotes human development
Aid provided by the government of one country to the government of another country	To help reduce poverty and bring about long-term sustainable development by helping governments of recipient countries to strengthen their economic, political, health and education systems and eventually become self-sufficient	<ul style="list-style-type: none"> • Support large infrastructure projects • Fund small community-based projects such as immunisation programs • Building schools and providing education programs 	<ul style="list-style-type: none"> • Seeks to reduce poverty, which means money is available to buy healthy food, clothing, shelter and healthcare, which protects people from communicable diseases and promotes physical health and wellbeing. With improved physical health people are happier, which improves emotional health and wellbeing. • Education programs promote social health and wellbeing as children and adults come together to learn. • Reducing poverty reduces stress, which improves mental health and wellbeing. 	<ul style="list-style-type: none"> • Reducing poverty and improving health and wellbeing supports people to live a long and healthy life by reducing ill health. • With reduced poverty people are more likely to have the resources to achieve a decent standard of living. • Providing schools and education helps children and adults develop knowledge. • Improved economic growth and stronger political systems are more likely to protect human rights and security and achieve gender equality. • Infrastructure projects such as the provision of safe water and sanitation helps manage waste and promotes environmental sustainability.

Bilateral aid sometimes attracts criticism, as the goods and services may be provided by companies from the donor country, thereby favouring its own economy and political interests. There can also be risks with providing bilateral aid if the government of the recipient country is corrupt and the funds are not spent on their intended purpose. Sometimes bilateral aid projects are focused on urban areas and neglect the poorest people, who are more likely to live in remote rural villages. To minimise the risks associated with bilateral aid it is important for donor countries to regularly evaluate the effectiveness of the aid provided in terms of health and wellbeing and development outcomes.

Multilateral aid

Multilateral aid is aid provided through an international organisation, such as the World Bank, United Nations (UN) or World Health Organization (WHO). Governments provide aid to multilateral organisations that are then able to combine donations from many countries and use these fund to support countries in need. This aid is often used to address global issues, which include emergency relief from events such as famine through programs such as the World Food Programme, and funding for **transnational** issues such as global warming, control of disease, such as COVID-19, and major infrastructure projects, such as the building of roads and sanitation systems. The purpose of multilateral aid is to contribute to the achievement of equity in health and wellbeing and to promote human development.

FIGURE 12.4 Trained health workers in the Philippines care for people in a medical clinic maintained with help from Australia.



Multilateral aid aid provided through an international organisation, such as the World Bank, United Nations or World Health Organization. Multilateral aid combines donations from several countries and then distributes them to the recipients. **Transnational** involving several nations

FIGURE 12.5 Bilateral aid in Vanuatu: an Australian aid project providing public health information about AIDS and STIs



Multilateral aid has the advantage of being less tied to the political interests of individual donor countries and allows for the efficient pooling of resources to address global issues that require a global approach. Multilateral aid contributes to the achievement of good health and wellbeing and works to improve the conditions needed for human development. Australia supports multilateral agencies engaged in poverty reduction and sustainable development to complement and reinforce its bilateral aid program.

TABLE 12.3 Summary of multilateral aid

Description	Purpose	Examples	Examples of how it promotes health and wellbeing	Examples of how it promotes human development
Aid provided through an international organisation such as the World Bank, UN or WHO. Organisations can combine donations from many countries and use the funds to support countries in need.	Contributes to the achievement of equity in health and wellbeing and promotes human development	<ul style="list-style-type: none"> Addressing global issues such as global warming, control of diseases such as COVID-19, and major infrastructure projects such as roads and sanitation systems Provides emergency relief through programs such as the World Food Programme 	<ul style="list-style-type: none"> Addressing global warming will contribute to improved physical health and wellbeing by reducing diseases such as asthma, stroke, cardiovascular diseases, malaria, malnutrition and diarrhoea. More secure agriculture and food supplies will reduce malnutrition and hunger, which will promote physical health and wellbeing. Addressing global warming will promote mental and emotional health and wellbeing as people will not be forced to relocate as a result of rising sea levels. This will improve social and spiritual health and wellbeing. Less transmission of diseases within and beyond countries will contribute to improved physical health and wellbeing. 	<ul style="list-style-type: none"> Reducing the transmission of diseases helps people live a long and healthy life. Food and agriculture means people will have food to eat, which means more energy to work to generate an income, which provides resources to enjoy a decent standard of living. When people are not forced to relocate, communities and villages are retained and people are more empowered to participate in community and political life. When children have improved health and wellbeing, they are able to attend school, which helps develop knowledge and skills. Infrastructure projects such as the provision of safe water and sanitation helps manage waste and promotes environmental sustainability

12.2.2 Aid provided by non-government organisations (NGOs)

Non-government organisations, also known as NGOs, are non-profit organisations that work to promote health and wellbeing and human development; they operate separately from governments. Although being an NGO suggests no government involvement, many of these agencies rely on funding from the Australian government, through its aid program, as well as through funds generated from public donations.

Non-government organisation (NGO) aid is an important part of the overall aid program and complements bilateral and multilateral aid. Aid provided by NGOs has many advantages. It tends to focus on smaller community-based projects that are targeted to meet basic health and wellbeing needs and promote community development and participation.

Non-government organisation (NGO) non-profit organisations work to promote health and wellbeing and human development and they operate separately from governments.

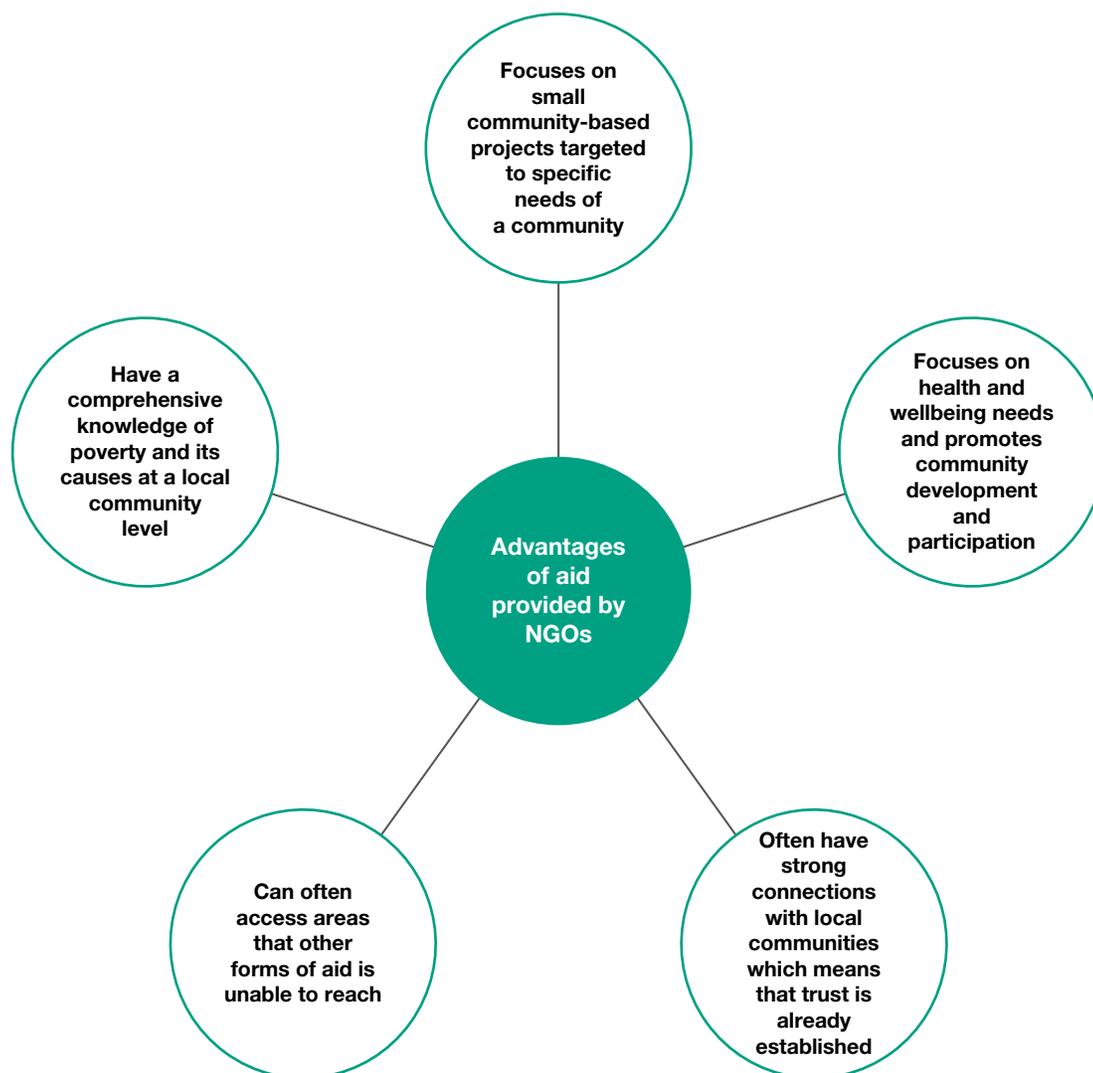
Non-government organisation (NGO) aid NGOs take different approaches to aid, which can include specific projects or programs, emergency aid, volunteering, education and development.

NGOs:

- bring strong connections to local communities, which means trust has often already been established
- can access areas that others don't or can't reach, such as remote, fragile and conflict-affected areas
- have comprehensive knowledge of poverty and its causes at a community level and bring expertise to the aid program (see **FIGURE 12.6**).

The role of NGOs in promoting health and wellbeing and human development will be discussed later in the topic.

FIGURE 12.6 Aid provided by non-Government organisations (NGOs) has many advantages and complements other types of aid provided.



The International Red Cross, which provides healthcare and disaster relief worldwide, is one of the world's largest humanitarian organisations. It is an NGO and usually provides aid directly to people running development projects. It also helps in areas where bilateral aid does not reach and aims to improve health and wellbeing for people in all countries. Globally, there are thousands of NGOs that are involved in providing aid. Some well-known NGOs include World Vision, CARE International, Caritas and Oxfam.

FIGURE 12.7 Non-government organisations such as Oxfam provide small development projects in villages where bilateral aid often doesn't reach.



12.2 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

12.2 Quick quiz

on

12.2 Exercise

12.2 Exam questions

Learning pathway

■ LEVEL 1

1, 2, 3

■ LEVEL 2

4, 5, 6, 8

■ LEVEL 3

7, 9, 10

Test your knowledge

1. What is meant by the term 'aid'?
2. List the three types of aid and give an example of each.
3. For each type of aid, describe its characteristics and purpose.
4. Why does bilateral aid sometimes attract criticism?
5. Why is it important to be able to pool resources to provide multilateral aid?
6. What is the focus of the aid provided by non-government organisations?

Apply your knowledge

7. Draw a table like the one below and briefly outline the benefits and limitations of each type of aid.

Type of aid	Advantages	Limitations

8. Emergency or humanitarian aid is short-term aid and should end once the emergency is over. Explain why.

9. Read the following information:

In July 2016, around 820 000 people were affected by floods in Bangladesh. Dangerously high river levels forced thousands of people from their homes and many families had to live out in the open. There were shortages of clean water, food, medicine and fuel. The flooding wiped out entire villages and crops, and plunged farmers deeper into debt.

Examine the three examples of aid below and answer the questions that follow.

- Local companies worked with the government of Bangladesh to build new schools or classrooms and repaired those that were damaged.
- Each household affected by flooding was provided with 40 packets of fortified biscuits to provide a source of food.
- Funds provided by the Australian government were used by the government of Bangladesh to fund the building and repair of roads washed away by the floods.
 - a. Identify two types of aid represented in the examples.
 - b. Select one example that represents the most appropriate response to the situation in Bangladesh above and justify your choice.

10. Explain why NGOs often work in collaboration with governments and local aid agencies.

12.2 Quick quiz



12.2 Exercise

12.2 Exam questions

Question 1 (2 marks)

Source: VCE 2019, Health and Human Development Exam, Q.13.a; © VCAA

Describe the difference between bilateral aid and aid provided by non-government organisations.

Question 2 (1 mark)

Source: VCE 2017, Health and Human Development Exam, Q.13.c; © VCAA

In addition to working with NGOs, Australia also provides bilateral aid. **Describe** bilateral aid.

Question 3 (2 marks)

Source: VCE 2017, Health and Human Development Exam, Q.14.b; © VCAA

How could providing humanitarian assistance promote human development?

Question 4 (2 marks)

Source: VCE 2017, Health and Human Development Exam, Q.13.b; © VCAA

Explain why Australia's aid program works with non-government organisations (NGOs) such as World Vision to provide aid to developing countries.

Question 5 (2 marks)

Source: VCE 2015, Health and Human Development Exam, Q.12.b; © VCAA

What are bilateral aid and multilateral aid?

More exam questions are available in your learnON title.

12.3 The features of Australia's aid program

KEY CONCEPT Understanding the features of Australia's aid program

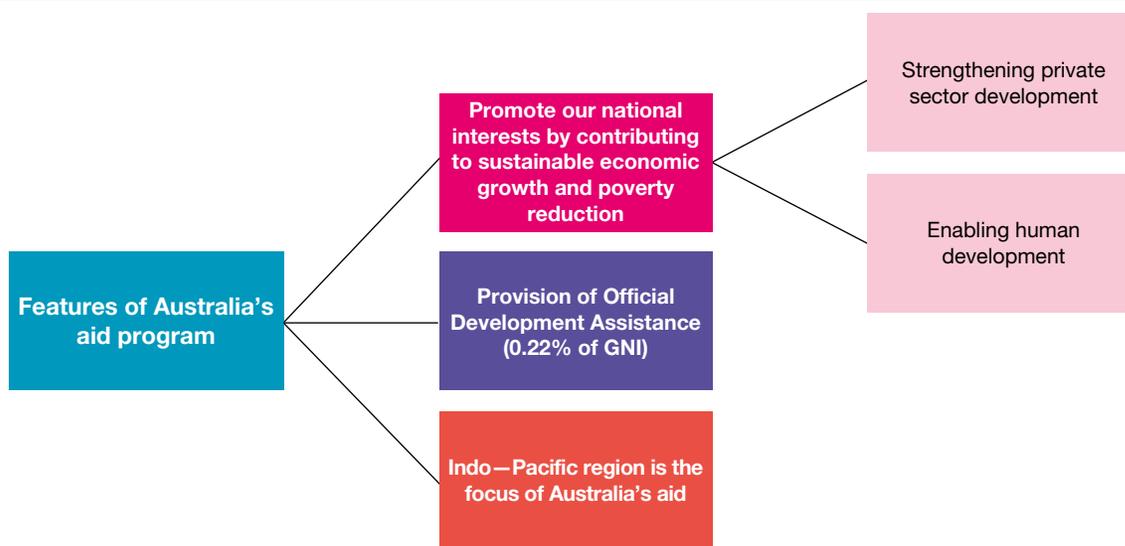
12.3.1 Features of the Australian government's aid program

Through the Department of Foreign Affairs and Trade (DFAT), the Australian government acts to promote human development by working to reduce poverty in low- and middle-income countries. The purpose of Australia's aid program is to promote our national interests by contributing to sustainable economic growth and poverty reduction. DFAT does this by focusing on achieving two development outcomes:

- strengthening **private sector** development
- enabling human development.

Private sector part of a country's economic system that is run by individuals and companies, rather than the government

FIGURE 12.8 The features of Australia's aid program are quite diverse.

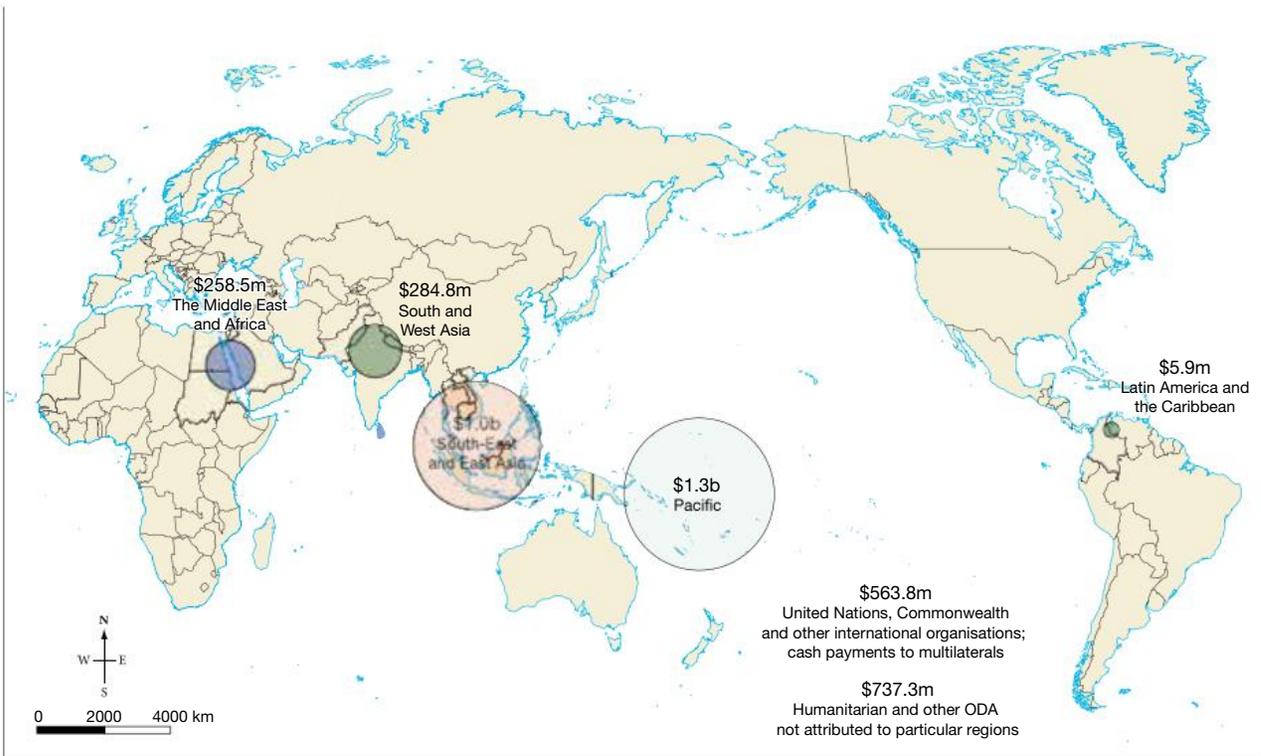


Strengthening the private sector is important because it recognises that for people to escape poverty they must be given the opportunity to develop and use their skills more productively through self-employment or by earning a wage. The private sector creates most jobs in a country (around 90 per cent of jobs are in the private sector) and therefore a thriving private sector means more jobs for the people. Promoting economic growth and poverty reduction is also dependent upon achieving human development. Improving education and health as well as achieving gender equality are necessary to enable the development of a skilled workforce and better living standards. Therefore, Australia's aid program directly assists in the achievement of the SDGs.

Through DFAT, the government provides Official Development Assistance (ODA) to several countries.

FIGURE 12.9 highlights the many areas in the world where DFAT is providing assistance. Given its proximity to Australia, the Indo-Pacific region is the focus of Australia's aid program. There are many people living in poverty in countries in this region, and many people are struggling to meet their basic needs. Many of these countries are also affected by conflict, and this has the potential to directly affect our national and security interests. These countries are our nearest neighbours. Stronger growth, prosperity and stability in our region will also benefit Australia. It is where Australia's aid can make the greatest difference.

FIGURE 12.9 The circles represent the countries and regions Australia provides foreign aid to and the size represents the proportion of spending.



Source: Data from © Commonwealth of Australia, DFAT, Australian Aid Budget Summary 2018–19. Map drawn by Spatial Vision.

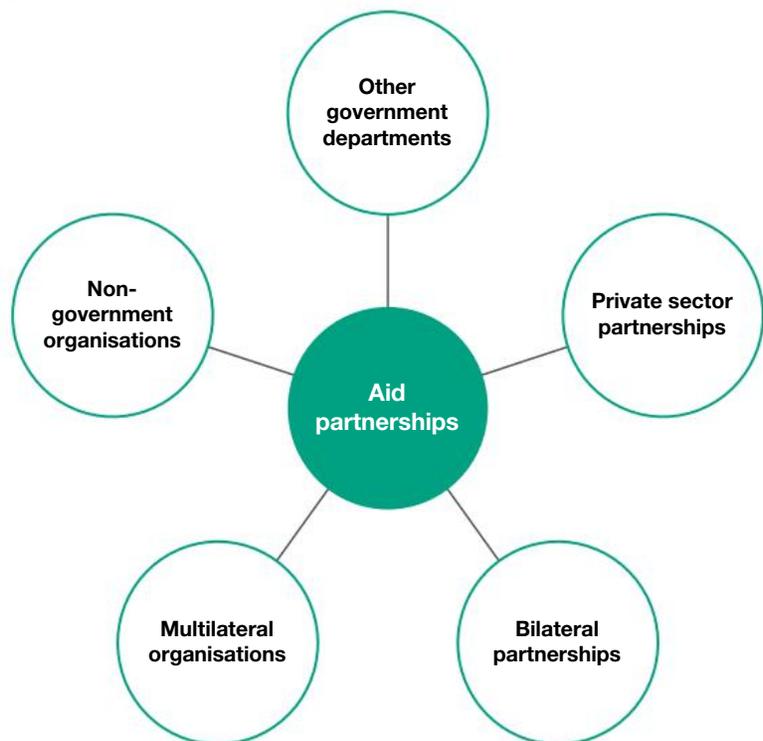
All Australians contribute to Australia’s aid program. In 2020–21, the government allocated \$4 billion, or 0.22 per cent, of our Gross National Income (GNI) for overseas aid. This means that taxpayers contributed approximately 22 cents for every \$100 they earned. This is a reduction in foreign aid investment from previous years. The United Nations recommends countries invest 0.7 per cent of their GNI.

Partnerships

The government works in partnership with other government departments and agencies, non-government organisations, businesses and community groups in Australia and overseas to deliver our aid program. Some of these partnerships are represented in **FIGURE 12.10**.

- *Other government departments:* While DFAT is responsible for administering our international aid program, it also works with many other government departments and

FIGURE 12.10 The Australian government works in partnership with a range of organisations and agencies to deliver aid.



agencies that are involved in providing assistance to other countries. These include the Australian Centre for International Agricultural Research, which works to improve the agricultural sector in countries in the Indo–Pacific region, and the Australian Federal Police, which works to develop and monitor peace, stability and security in a range of countries in the region.

- *Private sector partnerships*: DFAT partners with a range of companies within the private sector as a means of achieving its aid and development objectives. An example of this is the Westpac Corporate Partnership, which aims to increase economic activity by providing access to finance, particularly for women, through services such as mobile phones and improving access to loans for small and medium enterprises owned by women in low- and middle-income countries.
- *Bilateral partnerships*: The effectiveness of Australian aid is increased through bilateral partnerships with other countries where experience and resources can be combined.
- *Multilateral organisations*: Organisations including the World Bank and United Nations, and their many agencies such as the World Food Programme and the World Health Organization, extend the reach of Australia’s aid program. Their large size enables them to undertake projects on a scale that would not be possible for donors such as Australia.
- *Non-government organisations (NGOs)*: DFAT partners with many NGOs to complement its aid program.

Resources

 **Teacher-led video** Partnerships regarding Australian Aid (tlvd-0268)

12.3.2 Types of aid provided by the Australian government

Much of Australia’s aid is provided as bilateral aid, although Australia also provides funds to international organisations through multilateral aid, provides **humanitarian assistance** or emergency aid in times of crises and provides funds to support registered NGOs that work in many countries to deliver aid.

Bilateral aid

Through DFAT, the government provides bilateral aid directly to 75 countries, including our nearest neighbours: Indonesia, Papua New Guinea (PNG), East Timor and the nations of the South Pacific region. This aid comes in the form of funding, donations of material resources, training and advice. This assistance helps partner governments to strengthen their economic, political, health and education systems with the aim of eventually becoming self-sufficient and no longer needing Australia’s support. Examples of this include the programs being run in Papua New Guinea that are focused on improving the lives of women and girls across all areas of work through investments that:

- enhance women’s voice in decision-making, leadership and peace-building
- promote economic empowerment
- end violence against women and girls
- increase access to support services.

Australia also works in Papua New Guinea enhancing health by: targeting maternal and child health and communicable diseases, strengthening health security, and helping to build a more effective health system. Australia supported Pacific Island countries to more effectively detect and prevent the spread of COVID-19 by providing rapid diagnostic tests and working with local organisations to raise awareness of hygiene and prevention measures. Australia also seeks to partner with the private sector and collaborate to create opportunities to promote economic growth in the region, reduce poverty and return commercial profits.

Multilateral aid

Approximately one-third of Australia’s aid budget is dedicated to multilateral aid. The Australian government provides multilateral funds to international aid organisations such as the World Bank, Asian Development Bank, United Nations Development program,

Humanitarian assistance see
Emergency aid

UNICEF and the World Health Organization to run programs in low- and middle-income countries. Other multilateral organisations supported by Australia's aid program include:

- The Global Fund to Fight AIDS, Tuberculosis and Malaria
- Gavi, the Global Vaccine Alliance that helps reduce childhood deaths by ensuring low-income countries can access vaccines at an affordable cost and to assist in the development and distribution of the COVID-19 vaccine.
- The Global Partnership for Education, which supports children to achieve primary and lower secondary school education.
- The Green Climate Fund (GCF), which is a global platform to respond to climate change by investing in low-emission and climate-resilient development. GCF was established to limit or reduce greenhouse gas (GHG) emissions in low and middle-income countries, and to help vulnerable societies adapt to the unavoidable impacts of climate change.

Multilateral organisations extend the reach of Australia's aid program because their large size enables them to undertake projects on a scale that would not be possible for individual countries alone. Working with the United Nations and its humanitarian agencies, Australia ensures that carefully targeted programs are put in place to promote health and wellbeing and human development globally. By funding multilateral organisations, Australia hopes to accelerate achievement of the Sustainable Development Goals by improving access to health services — particularly maternal and child health and wellbeing, the prevention and treatment of COVID-19, HIV/AIDS treatment and prevention, gender equality, education, health, and the reduction of poverty, all of which helps to improve health and wellbeing and promote human development at a global level.

Humanitarian assistance or emergency aid

In times of crisis, such as natural disasters and conflict, populations often rely on an emergency supply of resources, such as food, water, shelter and healthcare, to survive. The Australian government responds quickly in these situations, and provides personnel and material resources to assist in saving lives.

Australia usually works with other multilateral and NGO partners to ensure emergency aid is provided to those who need it. An example of this is when the Department of Foreign Affairs and Trade provided ongoing humanitarian assistance through the World Health Organization, World Food Programme, United Nations Children's Fund, UN Women, and United Nations Population Fund, to save lives, address human suffering and protect the most vulnerable during the COVID-19 pandemic. They also provided \$350 000 in life-saving equipment, including emergency shelter and kitchen and hygiene kits, to assist more than 2000 people in need following cyclone Gita in Tonga in 2018. In addition, they released humanitarian supplies, including tarpaulins and water purification tablets, through the Tongan Red Cross and the Australian Defence Force assisted with debris removal, water, sanitation and distribution of emergency supplies on request from the Government of Tonga.

Australia has stockpiles of relief items in Australia and overseas. This includes essential life-saving items such as water purification tablets, shelter supplies, hygiene kits, mosquito nets and blankets. This means they have the capacity to provide supplies within 48 hours of a request for assistance by a partner government.

FIGURE 12.11 Australia's aid program through DFAT assists those living in low- and middle-income countries to have improved access to healthcare services, in particular maternal and child health services.



Aid provided to NGOs and volunteers

In 2020–21 around \$175.1 million of Australia’s aid funding went to NGOs to deliver aid programs directly to people in need as well as other volunteer programs, such as the Australian Volunteers for International Development program. This program supports skilled Australians to undertake volunteer work in low- and middle-income countries.

The Australian government funds Australian NGOs through the Australian NGO Cooperation Program to provide grants that support more than 57 Australian-registered NGOs that deliver over 450 projects in 57 countries. Under this program, DFAT has a partnership with ten of Australia’s largest NGOs (World Vision Australia, Oxfam Australia, Caritas Australia, PLAN International Australia, Child Fund Australia, CBM Australia, CARE Australia, TEAR Australia, The Fred Hollows Foundation and Save the Children Australia) with whom they work closely. Other NGOs that have been accredited by DFAT receive funds to assist them in carrying out their work.

As we saw previously, NGOs strengthen the aid program as they work in areas that are difficult to access, such as conflict-affected regions, and often focus their efforts on small, community-based development work. They also have expertise in working in emergency situations where fast and flexible responses are needed.

CASE STUDY

Tropical Cyclone Harold

In early April Tropical Cyclone Harold swept through Solomon Islands, Vanuatu, Fiji and Tonga, leaving a trail of destruction and claiming 31 lives.

Australia released humanitarian relief supplies that had been pre-positioned with local partners and assisted governments to conduct damage assessments. Following formal requests for assistance, eight Australian Defence Force flights to Fiji and Vanuatu delivered 224 tonnes of blankets, lanterns, shelters, hygiene kits and other essential items. Our funding (over \$17 million) enabled the Red Cross, NGOs and governments to provide immediate assistance to affected communities and to support early recovery activities, including restoring education and health services.

The risk of COVID-19 transmission complicated relief work. We developed strict protocols on handling, packing and storing relief supplies.

Australia is supporting repairs to schools and health facilities, and distributing, food crop seedlings and cuttings.

Source: DFAT, 2019–2020 Annual Report, <https://www.dfat.gov.au/sites/default/files/dfat-annual-report-2019-20.pdf>, p. 72

CASE STUDY REVIEW

1. List the types of aid represented in the case study.
2. What is the aim of providing the aid?
3. How will this program promote health and wellbeing and human development?
4. How does the aid example reflect the key features of Australia’s aid program?

12.3 Activity

Access the **Shared Value Partnerships in Sri Lanka** weblink and worksheet in the Resources tab and then complete the worksheet.

Resources

-  **Digital document** Shared Value Partnerships in Sri Lanka worksheet (doc-32236)
-  **Weblink** Shared Value Partnerships in Sri Lanka

12.3 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

12.3 Quick quiz



12.3 Exercise

12.3 Exam questions

Learning pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8

Test your knowledge

1. Name the government department responsible for managing Australia's aid program.
2. Outline three ways the Australian government provides aid.
3. What is the purpose of Australia's aid program?
4. What percentage of GNI did Australia allocate to overseas aid in 2020–21 and how does that compare with the amount recommended by the United Nations?
5. Why is it important for Australia to develop partnerships for the delivery of our aid program?
6. Why does Australia focus its aid program on the Indo–Pacific region?

Apply your knowledge

7. Provide one example of how the Australian government contributes to each type of aid: emergency, bilateral and multilateral.
8. 'Australia should allocate more funds to NGOs given the way they strengthen our aid program.' Discuss.

12.3 Quick quiz



12.3 Exercise

12.3 Exam questions

Question 1 (2 marks)

Source: VCE 2015, *Health and Human Development Exam*, Q.12.a (adapted); © VCAA

Give two reasons why Australia provides aid to low- and middle-income countries.

Question 2 (6 marks)

Source: VCE 2012, *Health and Human Development Exam*, Section B, Q.6.d (adapted); © VCAA

DFAT is responsible for managing the Australian Government's overseas aid program.

Identify two different types of aid (other than funding NGOs) that DFAT provides. **Describe** each type of aid and give one example that represents each type.

Question 3 (2 marks)

Source: VCE 2007, *Health and Human Development Exam*, Q.4.a (adapted); © VCAA

What is DFAT?

Question 4 (2 marks)

DFAT provides assistance to many countries worldwide.

Which region of the world receives the majority of DFAT funding? **Why?**

Question 5 (2 marks)

In 2017–18, the Australian government allocated 90.8 per cent of its aid budget to the Indo–Pacific region.

Outline two reasons why the Australian government provided 90.8% of its aid budget to the Indo–Pacific region of the world.

More exam questions are available in your learnON title.

12.4 The Australian government's aid priorities

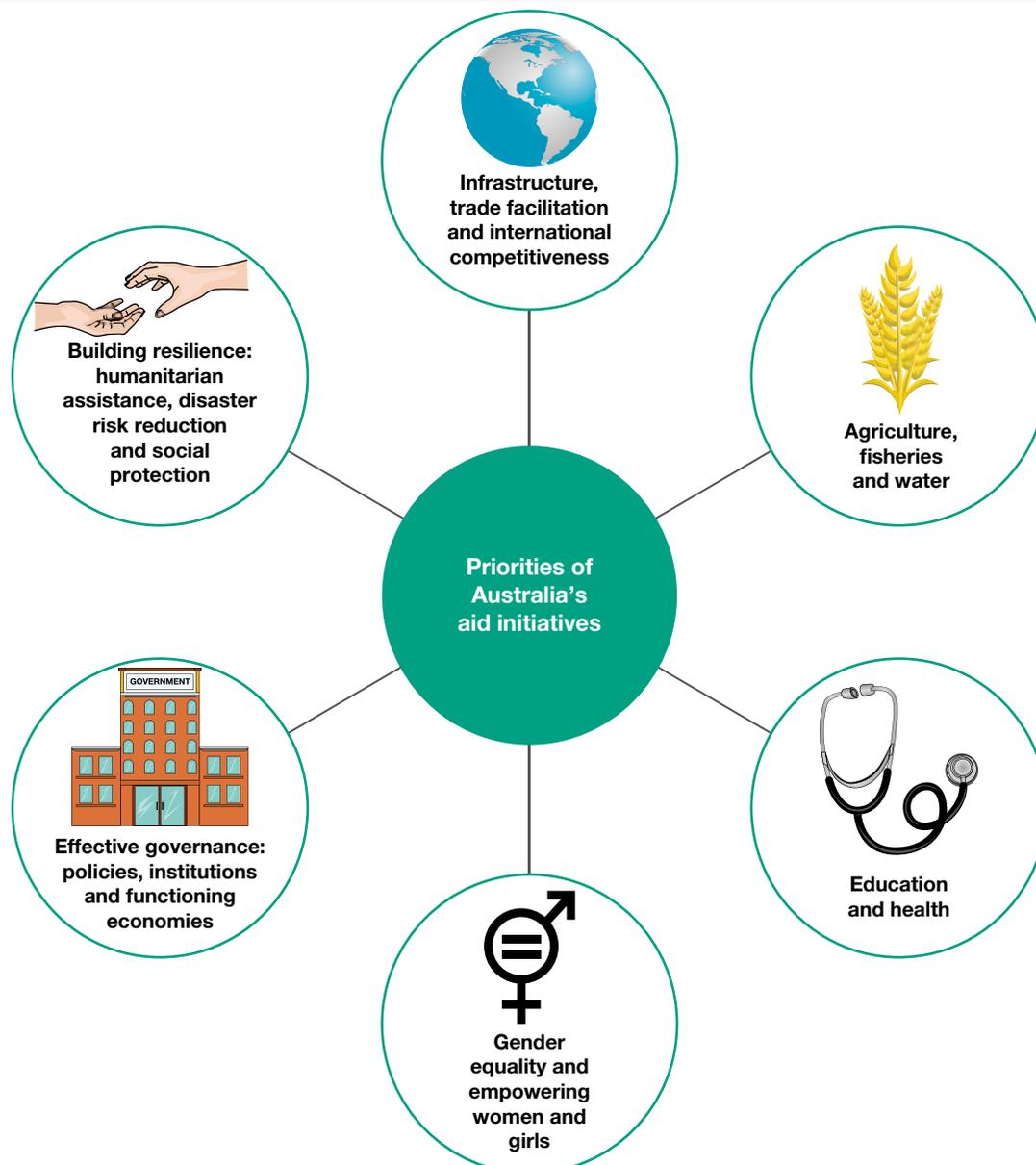
KEY CONCEPT Understanding the priorities of Australia's aid program

The Australian government's aid program is guided by the six priorities shown in **FIGURE 12.12**. These priorities all contribute to breaking the cycle of poverty in low- and middle-income countries, improving health and wellbeing and promoting human development.

EXAM TIP

It is important that you can name each of the priorities accurately as the meaning can be changed if components of the priorities are either left off or changed in wording.

FIGURE 12.12 Priorities of the Australian government's aid program



12.4.1 Infrastructure, trade facilitation and international competitiveness

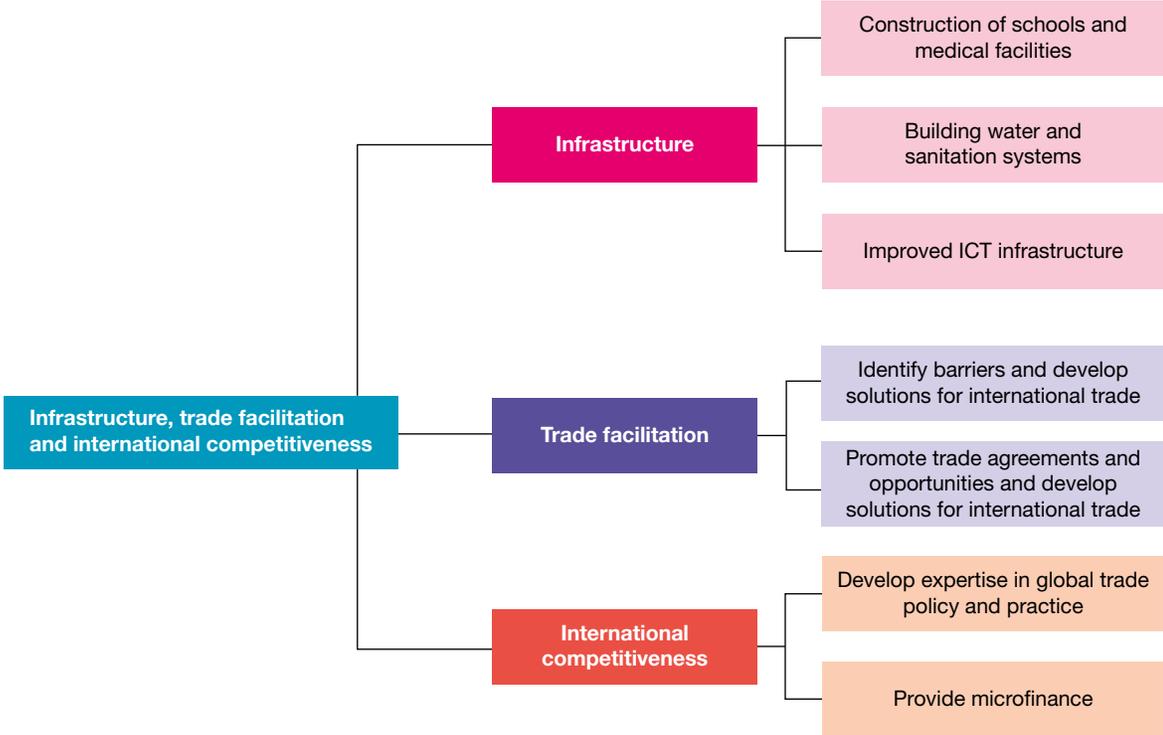
Infrastructure

Improving infrastructure in low- and middle-income countries promotes economic development, improves trade opportunities and reduces poverty. Infrastructure includes the provision of a reliable energy supply, better roads and transport systems including rail, ports and airports, clean water, accessible healthcare and telecommunications systems. Good infrastructure is important for people to gain access to markets to buy and sell goods. It facilitates trade because it enables people to transport their goods quickly and efficiently so they can be available for trading with other countries. Infrastructure also helps families to access healthcare when needed and helps children attend school, all of which improves health and wellbeing and promotes human development. Infrastructure helps people become engaged in the political, social and cultural activities in their communities.

In line with this priority Australia has:

- established the Australian Infrastructure Financing Facility for the Pacific (AIFFP) in July 2019, which assesses potential projects in sectors such as renewable energy, telecommunications, airports and transport, infrastructure and flood prevention.
- worked in partnership with Papua New Guinea to reconstruct bridges and roads destroyed by cyclones, promoting economic growth
- worked in partnership with the Philippines to build schools and health facilities
- provided a water and sanitation system in Indonesia, which resulted in more than 100000 water connections and 14000 sewerage connections to low-income households
- funded the development of an undersea telecommunication cable from Australia to Papua New Guinea to provide faster and more reliable internet connectivity to promote economic growth.

FIGURE 12.13 In line with its priority of supporting infrastructure, trade facilitation and international competitiveness, Australia invests in a range of projects designed to reduce the level of poverty and achieve sustainable development.



Trade facilitation and international competitiveness

Economic development is important in bringing about opportunities for decent work and a regular income, which helps families escape from poverty and builds a strong economy. Being able to participate in global trade markets increases economic growth and reduces poverty by creating opportunities to buy and sell products and resources, which generates money for families, communities and governments. This money can be used by families to achieve a decent standard of living and by governments to invest further in providing infrastructure and health and welfare systems for the population.

Through Australia's aid for trade program it is working to build the capacity of low- and middle-income countries to participate in the global trading system by supporting regulatory changes and building workforce skills.

In line with this priority Australia has:

- funded economists and other experts to work with governments and the private sector in middle- and low-income countries to identify barriers and develop solutions for international trade
- helped promote trade agreements and increase trading opportunities between high-income and middle- and low-income countries
- trained local people to develop expertise in global trade policy and practice.

Economies grow when businesses start or expand in response to new opportunities. The private sector is responsible for many of the new businesses created in low- and middle-income countries. In recognition, Australia provides a significant proportion of the aid budget to promote the growth of the private sector. This includes:

- providing **microfinance** loans so individuals, particularly women, can start their own business. This involves lending small amounts of money at low interest rates so people can purchase the resources required to start their business (such as a cow or sewing machine). This is effective in helping families escape from poverty.
- providing funding and education to assist people in middle- and low-income countries to improve their skills
- helping to create environments in which businesses can compete internationally, such as providing advice on business registration processes, implementing contract laws, establishing institutions to give support and provide businesses with access to finance
- helping partner countries respond to the economic impact of COVID-19. For example in Fiji, Australia is working with businesses to produce hand sanitiser and face masks and helping arrange food delivery and logistics for agricultural producers to maintain production and trade.

FIGURE 12.14 To facilitate trade and international competitiveness it is essential to provide aid to the private sector. The private sector includes self-employed people — from farmers, street vendors and small- and medium-sized businesses through to large, locally owned firms. It is essential in developing the economy because about 90 per cent of jobs in low- and middle-income countries are created in the private sector.



12.4.2 Education and health

Education and health are critical to improving the lives of all people, especially the poor, and for providing opportunities for people to participate in the economy to improve living standards.

Microfinance small, low-cost financial services for poor people that involve low-interest loans to develop small businesses

Education

Education is one of the best investments that can be made to reduce poverty, improve health and wellbeing and promote human development. By being educated, people can gain the skills to enable them to contribute to the country's economy. When girls are educated, they are likely to marry later in life and have fewer children. This contributes to better maternal health and wellbeing, improved child health and wellbeing and increased economic opportunities. Educated women are more likely to send their own children to school, which leads to improved economic growth. Education for those with a disability is also important to reduce the level of disadvantage experienced by this group.

FIGURE 12.15 Providing educational opportunities for children, especially girls, in a range of low- and middle-income countries helps reduce poverty and improves human development.



The Australian government has focused on providing education opportunities by:

- increasing opportunities for girls to learn
- supporting teacher training and the development of high-quality curriculum and learning programs in countries such as Indonesia, Laos, Timor-Leste, the Philippines, Papua New Guinea and Pacific Islands countries
- funding initiatives to assist children, including from ethnic minority groups in Laos, Myanmar and the Philippines, to access education and training
- investing in early childhood care and focusing on gender and disability inclusiveness
- investing in high quality secondary and technical education, skills development and training to meet the needs of the job market and improvements in productivity
- enabling girls living in poverty and children with a disability to attend school, including in Indonesia, Bangladesh, Laos, Pakistan, the Philippines and across the Pacific
- strengthening the management and accountability of education policies and systems
- contributing to the Global Partnership for Education to improve access to education worldwide, including for children in conflict-affected countries.
- providing scholarships to support young people from low- and middle-income countries to study in Australia and then return home to contribute to economic and social development.

Health

Improving health and wellbeing is the foundation for reducing global poverty. Healthier adults are more able to work and children free of disease are better able to learn at school and gain the skills needed to break out of poverty. DFAT focuses their work on improving health and wellbeing through five key areas:

1. strengthening public health systems for better service delivery and a better trained health workforce
2. addressing health and wellbeing threats that cross national borders, such as preventable infectious diseases and drug-resistant strains of malaria and tuberculosis
3. establishing more effective global health responses by contributing to and influencing the work of global health initiatives and organisations
4. improving nutrition and access to clean water, sanitation and hygiene
5. fostering innovations in health and wellbeing that respond to the complex health challenges in our region.

To address these priorities, the Australian government is working to promote health and wellbeing by:

- strengthening health systems in countries such as Papua New Guinea, Solomon Islands, Cambodia and Timor-Leste to deal with the threat of COVID-19
- assisting countries within our region to prepare for and build their capacity to respond to emerging health threats and emergencies, such as COVID-19 and the Zika virus
- providing funds to the Global Health Fund to Fight AIDS, Tuberculosis and Malaria, the World Health Organization and Gavi the Vaccine Alliance. Australia's partnership with Gavi is essential to the COVID-19 response. Gavi is responsible for COVAX, which ensures low income countries do not miss out on a safe and effective COVID-19 vaccine.
- funding programs that increase water and sanitation coverage in the Indo-Pacific region. One example of this is the Australian Civil Society WASH (Water, Sanitation and Hygiene) Fund. It supported 13 civil society organisations to deliver WASH programs in the Pacific, Asia and Africa. In the future the objective of the WASH Fund is to improve sustainable access to safe water, sanitation and hygiene.

12.4.3 Gender equality and empowering women and girls

Women and girls in low- and middle-income countries often lack the same opportunities available to men and boys in terms of education, employment and making decisions that affect their lives. By empowering women and girls, benefits are felt throughout the community, with higher average incomes, greater levels of education and healthier families. Without gender equality, countries are less likely to prosper. Better educated women have fewer and healthier children and are more likely to send their children to school, leading to a more educated community. Providing female farmers with equal access to resources could reduce hunger for an extra 150 million people.

FIGURE 12.16 Empowering women and girls benefits the community and leads to healthier, more educated families and improved economic growth.



This priority has a focus on three main areas:

1. enhancing women's voice in decision-making, leadership and peace-building
2. promoting women's economic empowerment
3. ending violence against women and girls.

Australia is working collaboratively to eliminate gender inequality and empower women and girls by providing support to:

- the establishment of the Gender Equality Fund to strengthen work on gender equality and women's empowerment
- a campaign empowering Indonesian women to combat corruption and address gender equality and climate change in the Pacific
- the improvement of pregnancy and birth outcomes in Timor-Leste
- the Pacific Women Shaping Pacific Development, a program focused on enabling women and men across 14 Pacific nations to improve the political, social and economic opportunities for women
- the Investing in Women Initiative that supports partnerships with government and the private sector in South-East Asia to expand women's economic participation

- programs to eliminate violence against women in Afghanistan, Pakistan, Cambodia, Timor-Leste, Papua New Guinea and across the Pacific.
- an emergency relief and resilience fund through Investing in Women. This helped women’s small and medium enterprises in South-East Asia respond to the COVID-19 pandemic.

FIGURE 12.17 One of the priorities of Australia’s aid program is gender equality and empowering women and girls. In line with this priority, there is a focus on three main areas.



12.4.4 Building resilience: humanitarian assistance, disaster risk reduction and social protection

Disaster preparedness, risk reduction and social protection all help build the resilience of countries and communities to better withstand the impact of disasters. Humanitarian assistance is provided in crisis situations, such as natural disasters and conflict, where life is at immediate risk. Causes of these situations include earthquakes, bushfires, tsunamis, conflict and chemical spills. Humanitarian crises affect development gains, increase the level of poverty and often result in instability that can last for many years. Since 2005, more than 700 000 people have been killed in disasters, and the number of people in need of humanitarian assistance has doubled. In 2019, more than 79 million people were displaced by conflict persecution, violence and violations of human rights.

FIGURE 12.18 Australia works with governments of countries such as the Philippines and Indonesia to put in place disaster-planning and risk-management strategies to help them better prepare for the effects of natural disasters such as cyclones.



Humanitarian assistance

As discussed previously, Australia's goal for humanitarian assistance is to save lives, alleviate suffering and maintain human dignity during and following the humanitarian crises, particularly the protection of the most vulnerable, including women, children and people with a disability. It is difficult to predict most crises, and it is important for countries to develop resilience to disaster by putting in place effective planning and risk-management strategies. A system better able to cope with an emergency is a more resilient system and one that is more likely to encourage private-sector investment, which reduces the level of poverty.

To improve the way in which humanitarian assistance is provided, Australia has implemented 'The Australian Humanitarian Partnership (AHP)'. It is a five-year (2017–22) partnership between the Department of Foreign Affairs and Trade (DFAT) and Australian NGOs. The aim of this partnership is to deliver more effective, innovative and collaborative humanitarian assistance by allowing Australia to use the networks and access of Australian NGOs to respond to natural disasters and crises in our region and beyond.

Examples of how the Australian government provides humanitarian assistance include:

- working with partners to reorient activities to prepare for and respond to COVID-19, including provision of water and sanitation infrastructure, medicines, ventilators and personal protective equipment
- sending staff to affected areas to provide immediate support (emergency/humanitarian aid) and providing emergency supplies such as medical kits, blankets, temporary shelter, food ration packs and drinking water
- providing funds to NGOs such as the Red Cross, which provide assistance during times of crisis
- working in partnership with the UN World Food Programme to deliver food to help address food insecurity across places such as Africa
- providing food, shelter, water, sanitation and medical care in response to an ongoing humanitarian crisis where people are displaced by conflict.

Disaster risk reduction

The Australian government works to reduce the risks of disaster by working with the governments of Indonesia, Papua New Guinea and the Philippines to develop tools that model the impact of floods, earthquakes, volcanoes and tsunamis and to provide information for better risk-management structures.

Social protection

Social protection refers to programs that address risk, vulnerability, inequality and poverty through a system of transfers to people in cash or in kind. The transfers can take a variety of forms, such as financial grants, food transfers, cash-for-work and school-feeding. Social protection improves an individual's ability to cope and not resort to survival measures that can entrench poverty. Following a crisis, cash transfers, which are part of social protection programs, can provide resources to help people rebuild their life without being forced into poverty.

Examples include:

- providing assistance to countries to deliver social protection initiatives — extending economic lifelines to households, businesses and vulnerable groups directly affected by COVID-19, including in Timor-Leste, Fiji, Tonga, Vanuatu, Indonesia and the Philippines
- working in countries where social protection systems are still in their early stages, including Laos, Cambodia and Myanmar
- working closely with reformers in government to improve the efficiency and effectiveness of Indonesia's social protection system.

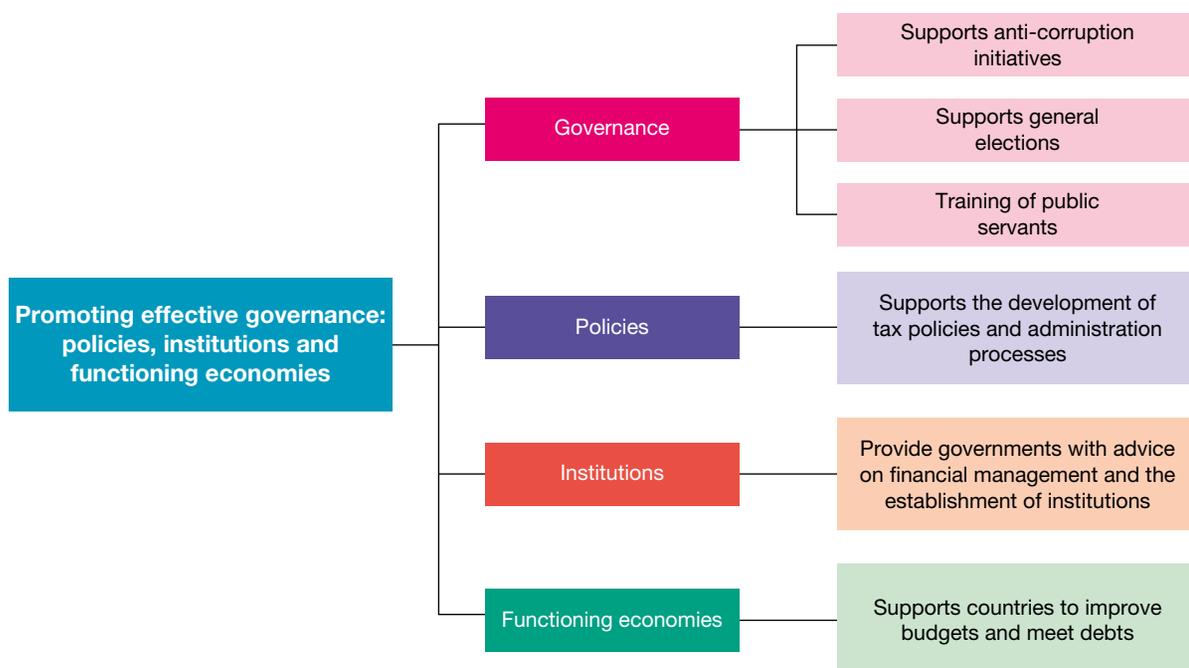
12.4.5 Effective governance: policies, institutions and functioning economies

Governance affects virtually all aspects of a country's society and economy. Stable, productive governments can work to promote the health and wellbeing and human development of the population. An effective government provides the foundations for

Governance the structures and processes that are designed to ensure accountability, transparency, rule of law, inclusiveness and broad-based participation in society

economic growth, private sector investment and trade. Well-functioning governments can work to provide stability and maintain law and order by ensuring disputes among citizens are settled peacefully and fairly. They can also deliver education and health services that build a skilled, productive and healthy workforce. Good governance, therefore, contributes to global efforts to achieve equality, create the conditions for improved human development and assists in reducing global health issues. When governance is poor, human development outcomes are also poor.

FIGURE 12.19 In line with the priority of effective governance, policies, institutions and functioning economies, DFAT supports a range of initiatives.



To promote effective governance, the Australian government:

- provides advice to governments of low- and middle-income countries on financial management and the establishment of institutions such as health systems, a police force and legal systems
- supports anti-corruption initiatives in the Indo-Pacific region
- works with countries in our region to develop administration processes and tax policies
- supports general elections in Papua New Guinea through training and security coordination
- helps countries such as the Solomon Islands to improve budget processes, enabling them to meet debt obligations and increase their income
- trains public servants in Papua New Guinea in public administration skills, such as record keeping, time management and staff supervision.

FIGURE 12.20 Good governance is crucial for strong human development. Australia provides support to countries such as Timor-Leste to carry out elections that are fair and free from corruption.



12.4.6 Agriculture, fisheries and water

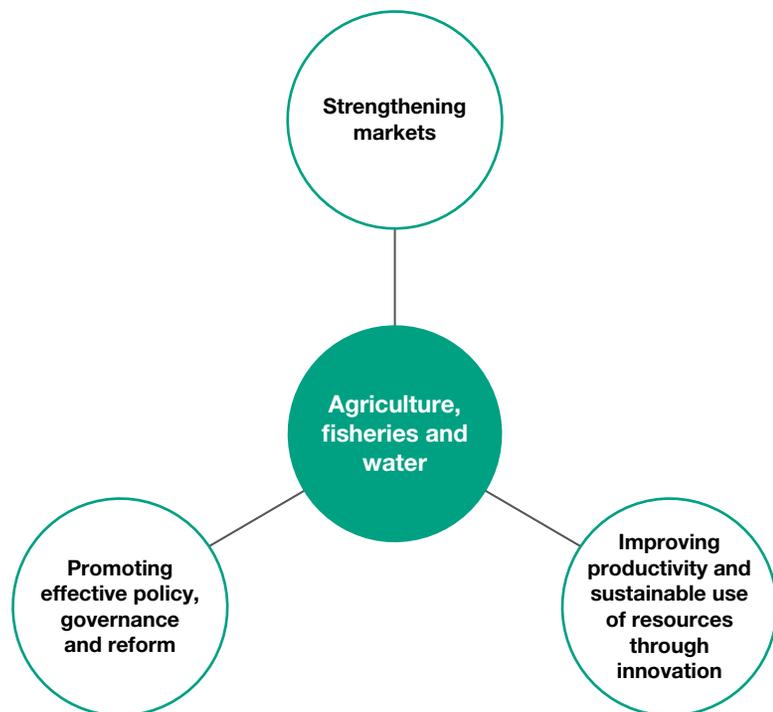
Agriculture and fishing provide employment and an income for millions of workers in middle- and low-income countries, particularly those living in rural areas. These industries also provide opportunities for improving economic development by exporting products to other countries. Women are often the farmers in low- and middle-income countries and are responsible for the collection of water. By improving agricultural and water management practices, gender equality is more likely to be achieved.

The global demand for food is expected to rise 60 per cent by 2050 due to increases in population and increasing wealth. This will put pressure on the current use of land, water, energy and fishery resources. Overfishing is already threatening the long-term sustainability of the fishery industry. The demand for water is expected to increase by 55 per cent by 2050, and 40 per cent of the world's population is predicted to be living in areas of severe water shortage by this time. Water scarcity has the potential to become a source of conflict among countries, which could threaten global peace and stability. Effective management of water supplies is therefore important.

This priority focuses on enhancing food, nutrition and water security and resilient agricultural practices by:

- strengthening markets — helping to increase small-scale farmers' and fishers' participation in global markets, encouraging investment by the private sector and developing more innovative practices
- innovating for productivity and sustainable resource use — improving productivity in all aspects of the food and agriculture process and promoting more efficient and sustainable use of natural resources, using international and Australian research and expertise
- promoting effective policy, governance and reform — assisting partner countries to achieve more effective policy settings to promote sustainable and inclusive growth and open trade, and creating the necessary environment for business, investment and innovation.

FIGURE 12.21 DFAT's priority of agriculture, fisheries and water has a focus on sustainability of the fishing industry and agricultural and water management practices through three main areas.



To develop agriculture, fisheries and water the Australian government:

- works with partner governments, international organisations and the private sector to support agricultural development in low-income countries, particularly in the Indo–Pacific region
- helps maintain the diversity of food crops through contributions to the Global Crop Diversity Trust
- invests in agricultural and fisheries research, particularly through the Australian Centre for International Agricultural Research, to increase productivity, reduce losses after harvesting and make supply chains more efficient
- supports small-scale farmers, fishers and entrepreneurs in countries such as Vietnam to meet their livelihood and food security needs
- assists partner countries to manage water resources better, particularly in Myanmar, India and the Mekong region.

FIGURE 12.22 DFAT is working with countries such as Vietnam, Laos and Cambodia to increase small-scale farmers' participation in global markets and create business investment and trade while ensuring women are actively involved in all aspects of the work.



12.4 Activities

1. Access the **Australian aid and Samoa: bridges** weblink and worksheet in the Resources tab and then complete the worksheet.
2. Access the **Australian aid and Samoa: voters with a disability** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital documents** Australian aid and Samoa: bridges worksheet (doc-32237)
Australian aid and Samoa: voters with a disability worksheet (doc-32238)
-  **Weblinks** Australian aid and Samoa: bridges
Australian aid and Samoa: voters with a disability

12.4 Exercises

learn**on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

12.4 Quick quiz

on

12.4 Exercise

12.4 Exam questions

Learning pathway

■ LEVEL 1

1, 3, 6, 7

■ LEVEL 2

2, 4, 5, 8, 9

■ LEVEL 3

10, 11, 12

Test your knowledge

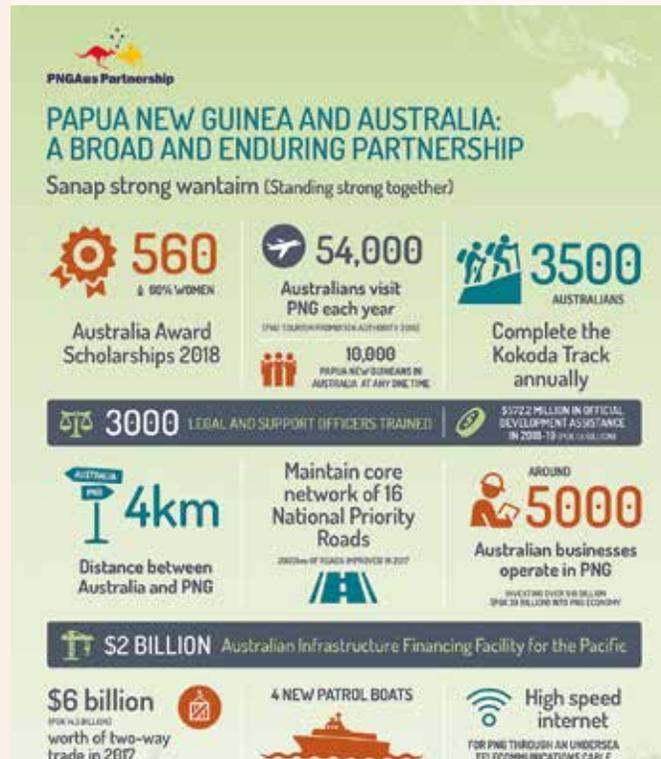
1. Using examples, explain what infrastructure means.
2. Why is good infrastructure important for reducing poverty?
3. What are the benefits of international trade?
4. How does a focus on infrastructure and trade facilitation promote gender equality?
5. Provide reasons why the private sector is essential for bringing about economic development.

6. What are the five key areas that DFAT focuses on to improve health and wellbeing outcomes?
7. What are the focus areas for achieving gender equality and empowering women and children?
8. Why is the effective management of water supplies important?

Apply your knowledge

9. Explain why DFAT would focus on providing social protection.
10. 'Without gender equality, countries are less likely to prosper.' Discuss why this is true.
11. Identify two Australian Government aid priority areas evident in **FIGURE 12.23** and justify your choice.

FIGURE 12.23 Papua New Guinea and Australia Partnership infographic



12. For each of the six DFAT aid priorities listed, complete the table to show how each of the priorities links to the achievement of SDG/s and the priorities of the WHO, which you studied in topic 11. The first example is completed for you.

DFAT Priority	Relevant SDG/s	Relevant WHO priority/s
Infrastructure, trade facilitation and international competitiveness	No poverty Good health and wellbeing Clean water and sanitation Quality education	Promoting healthier populations
Agriculture, fisheries and water		
Education and health		
Gender equality and empowering women and girls		
Effective governance: policies, institutions and functioning economies		
Building resilience, humanitarian assistance, disaster risk reduction and social protection		

Question 1 (1 mark)

Source: VCE 2017, *Health and Human Development Exam*, Q.13.a; © VCAA

Enhancing the abilities of young people in Afghanistan

Masoma, 17, has... hearing and speech problems. Because of her disability, she could not go to school and was instead responsible for caring for her sisters and brothers and helping her mother at home. In 2014–15, she participated in embroidery training through World Vision's Youth Economic Livelihoods and Literacy (YELL) Badghis project, in Afghanistan, supported by the Australian Government, through the Australian NGO Cooperation Program (ANCP). Masoma has now graduated and has many orders from her relatives and neighbours for embroidery...

Today, Masoma isn't only responsible for taking care of her sisters and brothers; she is also an independent young woman who can help support her family financially...

Thanks to the Australian Government, young people in Afghanistan's Badghis Province are gaining access to vocational training. The skills they are gaining make them more resilient to the impacts of poverty, and help them cope with increasing financial hardship by reducing their dependence on agriculture as a sole source of income.

In Afghanistan, World Vision is working with provincial authorities, training centres and local leaders and businesses to provide literacy and vocational training to young people. The project is also supporting women to become literacy teachers.

Source: Department of Foreign Affairs and Trade website, 'Enhancing the abilities of young people in Afghanistan' 14 January 2016, <www.dfat.gov.au>

Identify one of Australia's aid priorities shown in the program described above.

Question 2 (1 mark)

Source: VCE 2016, *Health and Human Development Exam*, Q.11.a (adapted); © VCAA

Education and health form one priority of Australia's aid program. **Identify** another priority of Australia's aid program.

Question 3 (1 mark)

Source: VCE 2015, *Health and Human Development Exam*, Q.13.b; © VCAA

The Department of Foreign Affairs and Trade (DFAT) requires that 80 per cent of Australia's development aid has a direct impact on women and girls.

State the priority of the Australian Government's aid program that is reflected in this statement.

Question 4 (4 marks)

Identify two priorities of Australia's aid program and briefly describe an example of Australia's work in achieving these priorities.

Question 5 (3 marks)

Below are a range of examples that represent the priorities of Australia's aid program.

Provide the name of the relevant priority that corresponds to the example.

- In 2017–18, the Australian government's aid program focus will be to support the Solomon Islands Government delivery of quality primary health care and basic education across the country, and to improve systems for skills training. **1 mark**
- In 2017–18, the Australian government's aid program focus will be to improve community safety and resilience through support for women's political leadership, particularly to increase women's representation and capacity at the provincial government level, and to increase women's political participation in Vanuatu. **1 mark**
- In 2017–18, the Australian government's aid program will provide skilled personnel to fill key management roles in the Nauru public service. **1 mark**

Source: <https://www.dfat.gov.au/geo/papua-new-guinea/development-assistance/papua-new-guinea>

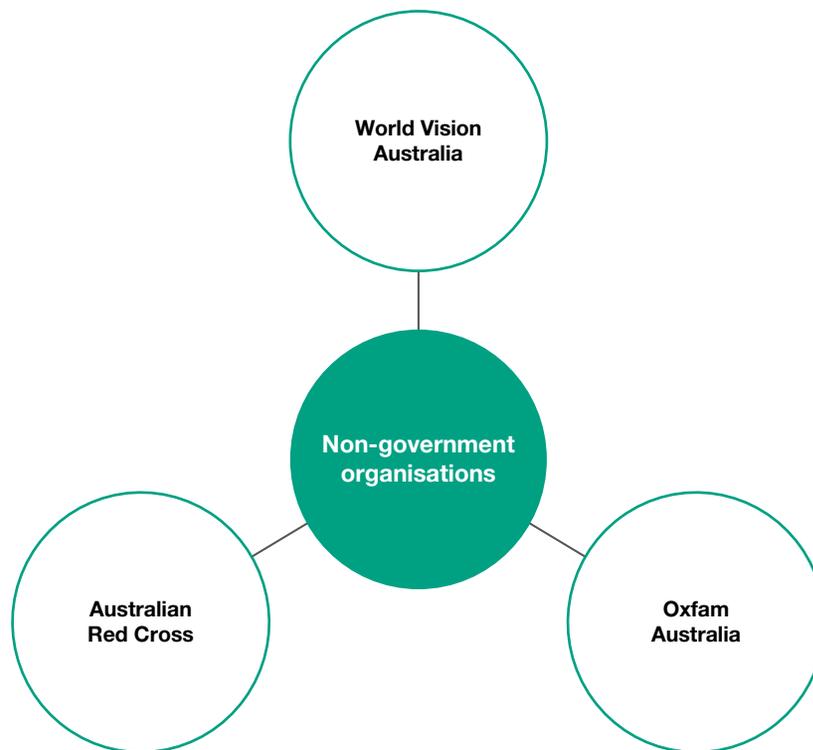
More exam questions are available in your learnON title.

12.5 World Vision and its role in promoting health and wellbeing and human development globally

KEY CONCEPT The role of World Vision in promoting health and wellbeing, and human development globally

Globally, there are thousands of NGOs involved in providing aid. Three examples are shown in **FIGURE 12.24**. Within Australia, there are NGOs that focus on assisting people within this country and others that provide aid to overseas countries. Some NGOs work both inside and outside Australia. Although being an NGO implies no government involvement, many of the agencies rely on funding from the Australian government through its aid program, as well as funds generated from public donations. Generally, the aid provided by NGOs focuses on smaller projects that are often more targeted and involve the community. They often work in collaboration with governments or other aid agencies.

FIGURE 12.24 Three of the many NGOs that provide aid



Examples of the type of aid NGOs provide are:

- funding for programs such as mobile health clinics and immunisation
- trained personnel (including volunteers and paid staff) to coordinate, implement and deliver programs
- education and training
- resources such as building materials and information technology hardware.

The next three subtopics will focus on three NGOs:

- World Vision
- the Australian Red Cross (Australian Red Cross is registered with DFAT as a non-government organisation providing aid to developing countries. However, it has a different relationship and status from other organisations: it has a specific requirement to support the public authorities in their humanitarian work.)
- Oxfam.

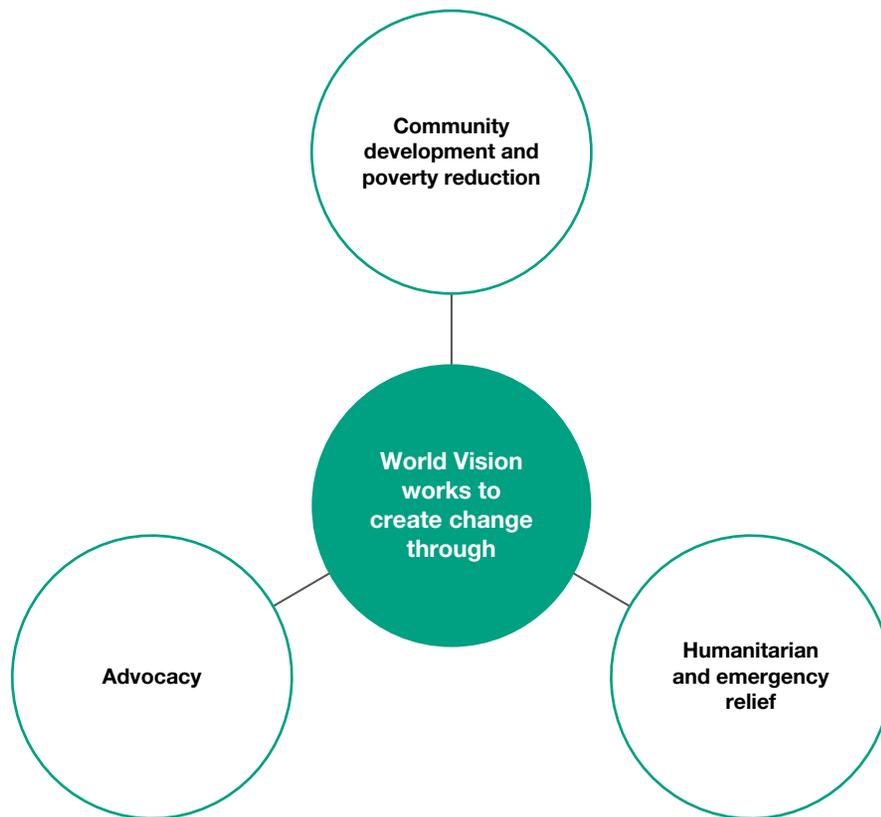
12.5.1 World Vision

World Vision is an NGO that works with children, families and communities around the world to overcome poverty and injustice. It works in more than 90 countries, with local staff who understand and appreciate the needs of the culture. World Vision's work is funded through a variety of activities, such as child sponsorship, the 40 Hour Famine, general donations, emergency relief appeals and corporate support of projects through cash donations or the provision of materials. World Vision also receives money from the Australian government's aid program that is allocated towards community development programs and emergency relief.

World Vision is a Christian development organisation that works with all people to create change regardless of their religion, ethnicity or gender through three approaches that underpin their work (see **FIGURE 12.25**):

- *community development and poverty reduction.* World Vision works alongside poor communities to find solutions to problems such as malnutrition, lack of safe drinking water, disease, illiteracy and unemployment or low incomes. These include maternal, newborn and child health and nutrition programs, agriculture cooperatives, water and sanitation projects, and income-generating projects. World Vision typically uses an integrated approach to poverty reduction and community-based development called an Area Development Program or ADP. ADPs operate in geographical areas that are large enough to have some regional impact, but small enough to make a major impact on the individuals and communities in the area. Typically, ADPs cover areas with a population of 20 000 to 40 000 people. ADPs can include rural and/or urban environments. The projects that take place in ADPs vary according to the context and the expressed needs of the community. ADPs usually operate for 15 years and are designed to address the long-term, interconnected causes and impacts of poverty in a way that is sustainable and that empowers the community members.
- *humanitarian and emergency relief.* World Vision provides rapid emergency relief to people affected by conflict, flood, drought, earthquake, famine and other natural disasters. Workers in the field provide food, shelter, medicine and other immediate needs. Other activities include the provision of child-friendly spaces where children can learn and play, and helping people access services such as healthcare, providing shelter materials to displaced families, restoring livelihoods and essential services, and equipping communities to respond to emergencies. This is followed by rebuilding programs and disaster preparedness projects to enable people to protect themselves better from future disasters.
- *advocacy.* World Vision engages governments, institutions, donors, communities and the public to address the underlying causes of poverty, and supports training and projects that empower communities to speak up for their rights and influence change. They campaign for greater investment in Australian aid, ending violence against children, working with governments to create systemic change, upholding the rights of refugees, and meeting the United Nations Sustainable Development Goals.

FIGURE 12.25 World Vision is an NGO that works with children, families and communities around the world to overcome poverty and injustice. They achieve this by using three approaches that underpin their work.



12.5.2 How World Vision promotes health and wellbeing and human development globally

World Vision works with communities to deliver a range of projects that directly and indirectly improve the health and wellbeing and human development of community members, in particular pregnant women, mothers and children. Children are particularly vulnerable to causes of ill health, such as malnutrition and disease, and the impact of these can affect children for their whole lives. Malnutrition in the first 1000 days of a child's life, for example, can affect the development of the brain, making it difficult to learn, can cause stunted growth, and can increase the risk of disease. When malnourished children become adults, they can have ongoing health and wellbeing problems and find it difficult to work and to earn a higher income, which impacts human development. Ill health can be both a cause and a consequence of poverty. Many of the health and wellbeing issues faced by mothers and children living in poor communities are preventable. World Vision seeks to address these issues and to promote health and wellbeing and human development by working at the household, community and national levels.

World Vision's 7–11 Health Strategy provides the framework through which World Vision addresses the health and wellbeing and nutrition of women and children. The goal is to reduce under-five and maternal mortality through seven core interventions for mothers, and 11 core interventions for children. These are:

FIGURE 12.26 Children have a chance to enjoy a healthy, nutritious meal after their mothers learn new cooking methods in a PD Health training session in Uganda.



The 7 Core Interventions for the Mother	The 11 Core Interventions for the Child
<ol style="list-style-type: none"> 1. Adequate diet 2. Iron/folate supplements and deworming 3. Infectious disease prevention 4. Malaria prevention, treatment access and preventative treatment 5. Healthy timing and spacing of pregnancy 6. Birth preparedness 7. Facilitating access to quality maternal health services, including antenatal and postnatal care, and a skilled attendant at birth 	<ol style="list-style-type: none"> 1. Appropriate breastfeeding 2. Essential newborn care 3. Adequate diet, including appropriate complementary feeding and Vitamin A supplementation 4. Adequate iron 5. Full immunisation for age 6. Hand washing with soap 7. Oral Rehydration Therapy and zinc 8. Prevention and care-seeking for malaria, and prevention and care-seeking for acute respiratory infection 9. Prevention and care-seeking for acute malnutrition 10. Prevention and care-seeking for paediatric HIV 11. Deworming

This strategy is delivered through a range of projects including:

- training and supporting community health workers, who provide education and support in the community about good nutrition, healthy behaviours and preventative healthcare measures
- training and equipping health staff, including midwives
- intensive feeding programs for malnourished children
- agricultural training on growing new and more diverse ranges of crops, and rearing livestock to improve food security and access to a wider range of nutrients.

12.5 Activity

Access the **World Vision water for everyone** weblink and worksheet in the Resources tab and then complete the worksheet.

on Resources

-  **Digital document** World Vision water for everyone worksheet (doc-32239)
-  **Weblink** World Vision water for everyone

12.5 Exercises

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To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

12.5 Quick quiz

on

12.5 Exercise

12.5 Exam questions

Learning pathway

■ LEVEL 1

1, 2

■ LEVEL 2

3, 4, 5

■ LEVEL 3

6, 7

Test your knowledge

1. What does World Vision seek to achieve?
2. World Vision is a Christian organisation that aims to eliminate poverty and its causes. It works with all people to create change, regardless of their religion, ethnicity or gender. Outline the three ways World Vision attempts to achieve its aims.

3. How does the work of World Vision promote health and wellbeing?
4. How does the work of World Vision promote human development?
5. Provide three reasons why World Vision's work particularly targets pregnant women, mothers and children.

Apply your knowledge

6. Select two of the core interventions for the mother and two core interventions for the child and discuss how they would promote health and wellbeing and human development.
7. Discuss how the following World Vision example would help overcome poverty and injustice.

World Vision works with communities by providing small loans to create and expand businesses, and help improve access to local and international markets. We also establish community savings groups and provide education and training to foster entrepreneurship.

Source: World Vision Australia, <https://www.worldvision.com.au/global-issues/work-we-do/poverty>

12.5 Quick quiz



12.5 Exercise

12.5 Exam questions

Question 1 (2 marks)

Source: VCE 2016, *Health and Human Development Exam*, Q.10.c (adapted); © VCAA

The following information relates to an HIV/AIDS prevention and control program delivered by World Vision in Tashkent, Uzbekistan. The program was aimed at reducing the HIV infection rate.

The program aimed to promote behavioural change among youth and most at risk populations (MARPs). MARPs include injecting drug users, sex workers and men who have sex with men.

The program covered a wide range of activities including: needle exchange, condom distribution, health education, counselling, HIV/STI health referrals, outreach work, staff training, and the establishment of an information website. There were also advocacy initiatives focused around World Aids Day (2004).

Over 24 months a total of 24 000 visitors used the facility: 32% for the needle exchange program, 26% for counselling activities, 21% for HIV and/or STI tests, 21% for other services.

Source: World Vision Australia, *Basic Health and HIV*, policy brief, November 2007, p. 3; © World Vision Australia 2007; all rights reserved; used by permission; www.worldvision.com.au

Explain how the HIV/AIDS prevention and control program could bring about improvements in health and wellbeing.

Question 2 (2 marks)

World Vision is a non-government organisation that works with people around the world to eliminate poverty and its causes.

Identify two focus areas of World Vision.

Question 3 (2 marks)

World Vision is involved in many programs aimed at improving health and wellbeing. One program is encouraging women in Tanzania to use clean fuel options such as solar cookers or energy-saving cooking stoves.

Outline how the use of clean fuels will improve the health and wellbeing of people, especially children, in Tanzania.

Question 4 (2 marks)

Read the following text.

Buka Island, Bougainville: safe water project

Early in 2005, around 80 per cent of the population of Bougainville did not have access to safe water and there was little understanding of how hygiene, water contamination and disease were related. Women had to walk six kilometers to get their daily water supply.

Staff from World Vision met with local communities to discuss how they could work together to improve their health and access to safe drinking water. It was agreed that the communities would provide the labour and some materials and World Vision would provide the funding and technical training to build wells and pit toilets.

Later in 2005, local water and sanitation committees involving both men and women were formed and they received training in how to manage the project. They would be responsible for training other members of the community and making sure the community built and maintained the wells and toilets. Using drama

activities, members of the local community learned the importance of hygiene and how clean, safe water would improve health and living conditions. This was important in helping the community see the need for the project and be committed to building and ongoing maintenance work.

Next, in 2006, water supply sites were chosen and six boreholes were drilled. Community members were trained in how to build and maintain the wells and eventually 15 shallow wells were built and fitted with hand pumps. Thirty pit latrines were also built.

Source: *Get Connected*, Issue 1 – Water, March 2007, pp. 22–3

Describe two ways the health and wellbeing of people living in this community will improve after the implementation of this project.

Question 5 (2 marks)

Using the source in question 4, **describe** how the implementation of this program will improve human development of the people of Bougainville.

More exam questions are available in your learnON title.

12.6 Red Cross and its role in promoting health and wellbeing and human development globally

KEY CONCEPT The role of the Red Cross in promoting health and wellbeing, and human development globally

12.6.1 The Red Cross

The Red Cross was established at the start of World War I. The main task undertaken by Red Cross volunteers was to put together parcels of soap, toiletries, games and food to be given to sick and wounded soldiers. Many volunteers also worked in hospitals across Australia during the war. The Australian Red Cross is part of the international Red Cross and Red Crescent Movement, which operates in 189 countries.

The Australian Red Cross aims to ‘improve the lives of vulnerable people in Australia and internationally by mobilising the power of humanity’. They operate under a set of principles that are outlined in **TABLE 12.4**.

TABLE 12.4 The operating principles of the Australian Red Cross

Principle	Explanation
Humanity	<ul style="list-style-type: none"> • Provide assistance without discrimination to the wounded on the battlefield • Prevent and alleviate human suffering wherever it may be found • Protect life and health and wellbeing and ensure respect for people • Promote mutual understanding, friendship, cooperation and lasting peace among all people
Impartiality	<ul style="list-style-type: none"> • Make no discrimination as to nationality, race, religious beliefs, class or political opinions • Endeavour to relieve the suffering of individuals, being guided solely by their needs, and to give priority to the most urgent cases of distress
Neutrality	<ul style="list-style-type: none"> • To continue to enjoy the confidence of all, the movement may not take sides in hostilities or engage at any time in controversies of a political, racial, religious or ideological nature
Independence	<ul style="list-style-type: none"> • Always maintain autonomy so they can act in accordance with the principles of the movement
Voluntary service	<ul style="list-style-type: none"> • It is a voluntary relief movement not prompted in any manner by desire for gain.
Unity	<ul style="list-style-type: none"> • There can be only one Red Cross or Red Crescent Society in any one country. • It must be open to all. • It must carry on its humanitarian work throughout its territory.
Universality	<ul style="list-style-type: none"> • The International Red Cross and Red Crescent movement, in which all societies have equal status and share equal responsibilities and duties in helping each other, is worldwide.

12.6.2 How the Red Cross promotes health and wellbeing and human development globally

The Australian Red Cross works to save lives, alleviate human suffering and protect dignity, especially in times of disasters, armed conflicts and other humanitarian crises. In this way, it is helping promote health and wellbeing and human development. Through its international aid program, their work focuses largely on the Asia–Pacific region, which is home to two-thirds of the world’s population and includes some of the most disaster-prone countries on earth. Australian Red Cross works in several areas in humanitarian and development programming, always through its partner National Red Cross and Red Crescent Societies. Examples of their work are shown in **FIGURE 12.28**.

FIGURE 12.27 The Red Cross is installing safe drinking water and sanitation facilities in villages in Myanmar’s dry zone. This greatly reduces the time women have to spend collecting water, increases their safety and enables them to pursue education and business opportunities.



Source: Red Cross, 2016

FIGURE 12.28 The Red Cross works in three main areas to promote health and wellbeing and human development.



Reducing the impact of disasters

Red Cross helps communities identify disaster risks and take practical steps to reduce them (for example, clearing a dam or building a floodwall). It supports local humanitarian organisations to be first responders in their own communities, with trained volunteers and emergency response plans. This could mean distributing relief supplies, organising emergency shelter, providing health care and first aid. Finally, it works towards longer-term recovery and resilience. Before cyclone Yasi hit Fiji in 2020, the Red Cross helped people in coastal areas to evacuate, as well as reinforcing homes against the winds and rain, and ensuring relief supplies were stocked and ready for rapid distribution. As soon as the storm passed, Red Cross volunteers headed to each affected community and distributed relief supplies, which included tarpaulins and tools to create temporary shelters; kitchen sets, solar lights and blankets

to help get daily routines back on track; and hygiene items to protect health and dignity. Reducing the impact of disasters promotes health and wellbeing. Preventing or reducing the impact of a disaster can save many lives and reduces the human suffering that can result, increasing health and wellbeing. The damage to towns and villages is reduced, which protects families' livelihood and reduces the risk of poverty. People are more empowered, which promotes human development. Schools and infrastructure suffer less damage, which means children can continue to attend school. Restoring safe water prevents illness and promotes physical health and wellbeing. Providing tools to people to help them rebuild their homes promotes human development, as it empowers people and provides them with the knowledge and skills to be independent.

Meeting humanitarian needs in crises

Where needed, Australian Red Cross contributes to emergency relief operations for major disasters and armed conflicts around the world. In South Sudan, Australian nurses worked in mobile surgical teams to treat people injured in armed conflict. Meanwhile in Syria, Red Cross provided hygiene kits and other emergency relief supplies to families fleeing the ongoing violence.

Meeting these humanitarian needs helps promote health and wellbeing by keeping people alive and treating people to return to good physical health and wellbeing. When people's physical health and wellbeing is improved, so too is their social, emotional and mental health and wellbeing. Being cared for and looked after when sick and injured can also contribute to spiritual health and wellbeing by developing a sense of belonging and connection. Providing hygiene kits and emergency relief supplies can keep people alive and helps promote their physical and emotional health and wellbeing.

FIGURE 12.29 In the Philippines, the Red Cross helped people whose homes were damaged by Typhoon Haiyan to access corrugated iron roofing sheets and cash grants to rebuild. Training in wind-resistant building practices was also provided.



FIGURE 12.30 Where needed, Australian Red Cross sends specialist aid workers to respond to major disasters or armed conflicts. This includes nurses to support emergency surgical teams in South Sudan.



Health and wellbeing (water, sanitation and hygiene)

The Red Cross supports communities to identify practical solutions to common but devastating illnesses and injuries. This may range from:

- providing first aid training in Myanmar to prevent fatalities from snakebites
- preventing the spread of Ebola in West Africa
- providing safe drinking water, sanitation facilities and hygiene training in remote Timorese villages to reduce child mortality from diarrhoea.

In all programs, Australian Red Cross seeks to work with the most vulnerable — often women, children and people with a disability — using its skills, knowledge and talents to help them achieve safe and dignified lives. It also acts as a broker of knowledge and resources for its humanitarian partners around the world.

This promotes physical health and wellbeing by reducing illness and injuries and prolongs life. Safe drinking water and sanitation reduces the risks of water-borne diseases and illness, which also promotes physical health and wellbeing.

Human development is promoted because the Red Cross works with communities and builds their knowledge and skills to empower them to become independent. This provides the conditions necessary for human development by enabling people to have control over the decisions that have an impact on their lives.

Working with the most vulnerable people promotes health and wellbeing because these people are often neglected, and are less likely to have the necessities for good health and wellbeing. Ensuring those who are the most vulnerable are supported to develop their skills and to live with dignity creates the conditions needed to promote human development.

CASE STUDY

Everybody knows someone affected

When a deadly measles outbreak hit Samoa, Red Cross volunteers were on the frontline supporting the community and helping stop the disease from spreading further.

‘Everybody knew somebody who had been impacted. But even more than that it was their country this was happening to, their people,’ says Ellie van Baaren of the International Federation of Red Cross and Red Crescent Societies. ‘It’s such a small country it affected everybody.’

The outbreak infected more than 5700 people and killed 83, most of them children under five.

Samoa Red Cross was part of a coordinated response effort involving government agencies, the World Health Organisation, international medical teams and others. We at Australian Red Cross, along with New Zealand Red Cross, also sent aid workers to help.

With a state of emergency declared, Samoa Red Cross teams helped raise community awareness about the disease and encouraged people to get vaccinated. They also provided practical and emotional support, distributed hygiene kits and provided hygiene education – important to reduce the spread.

Source: <https://www.redcross.org.au/news-and-media/news/everybody-knows-someone-affected>

CASE STUDY REVIEW

1. Which area/s of the work of the Red Cross are reflected in the case study?
2. Which organisations worked in partnership with the Samoan Red Cross and what would be the advantages of working together?
3. Explain how the work of the Red Cross helped address the measles outbreak.
4. Explain how the work of the Red Cross would help promote health and wellbeing and human development in Samoa.

12.6 Activity

Access the **Australian Red Cross** weblinks and worksheets in the Resources tab and then complete the worksheets.

Resources

-  **Digital documents** Australian Red Cross worksheet (doc-32240)
Australian Red Cross water project in Myanmar worksheet (doc-32241)
-  **Weblinks** Australian Red Cross
Australian Red Cross water project in Myanmar

12.6 Exercises

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12.6 Quick quiz



12.6 Exercise

12.6 Exam questions

Learning pathway

■ LEVEL 1

1, 2, 3

■ LEVEL 2

4, 5

■ LEVEL 3

6

Test your knowledge

1. What is the aim of the Red Cross?
2. Why does the Australian Red Cross focus its work on the Asia–Pacific region?
3. By what other names is the Red Cross known in other countries?
4. Discuss why the principle of neutrality is important to enable the Red Cross to do its work.

Apply your knowledge

5. The Red Cross works in three main areas. Outline each of these areas and discuss how they promote health and wellbeing and human development.
6. Explain how the work of the Red Cross compliments aid provided through Australia's aid program.

12.6 Quick quiz



12.6 Exercise

12.6 Exam questions

Question 1 (2 marks)

How was the Red Cross formed?

Question 2 (1 mark)

Identify three focus areas of the Red Cross.

Question 3 (4 marks)

'Fiji Red Cross, in conjunction with the Australian Red Cross, provided support to communities even before the category-five cyclone struck island communities across the country, helping them evacuate safely to survive the powerful storm. As soon as it was safe, Red Cross volunteers went to the worst-hit areas across the country. Our aid workers and local volunteers are helping families with technical information on how to rebuild homes that are safer and more storm-proof. Families in eight of the worst affected villages are being provided with access to improved clean water supplies and sanitation facilities to prevent disease and ill health in the months ahead. Over 50 000 people are being helped as they recover from this devastating cyclone in the months ahead.'

Source: <http://www.redcross.org.au/cyclonewinstonappeal.aspx>

Using examples from the extract, **discuss** how the Red Cross has promoted the health and wellbeing of people in Fiji.

Question 4 (3 marks)

The Australian Red Cross has implemented the ‘Healthy water for healthy lives’ project in the Cao Bang province of Vietnam.

Phuong, 36 years old from Cao Bang province, says, ‘Red Cross gave me a bio-sand filter. I now pour the water into this bio-sand filter and I have clean water. Before we had the bio-sand filter, when the children were small, they had some diseases and stomach problems, now there are no more big problems.’

Source: <http://www.redcross.org.au/support-vietnam.aspx>

Describe how the Australian Red Cross ‘Healthy water for healthy lives’ project has improved the health and wellbeing of people in the Cao Bang province of Vietnam.

Question 5 (3 marks)

Using the source text in question 4, **describe** how the Australian Red Cross ‘Healthy water for healthy lives’ project has improved the human development of people in the Cao Bang province of Vietnam.

More exam questions are available in your learnON title.

12.7 Oxfam and its role in promoting health and wellbeing and human development globally

KEY CONCEPT The role of Oxfam in promoting health and wellbeing, and human development globally

12.7.1 Oxfam

Oxfam Australia was formed from the merger of two leading Australian international development organisations: Community Aid Abroad, founded in 1953, and the Australian Freedom from Hunger campaign, founded in 1960. It is now one of Australia’s largest international development organisations, operating as a **secular**, not-for-profit, non-government organisation, with programs in more than 30 countries.

Oxfam’s vision is a just world without poverty, where people can influence decisions that affect their lives, enjoy their rights and assume their responsibilities — a world in which everyone is valued and treated equally. The purpose of Oxfam is to help create lasting solutions to the injustice of poverty. It is part of a global movement for change, one that empowers people to create a future that is secure, just and free from poverty.

Oxfam Australia believes that a just world is one in which people can exercise their basic rights, which include:

- the right to life and security
- the right to a sustainable livelihood
- the right to be heard
- the right to have an identity
- the right to have access to essential services.

FIGURE 12.31 Oxfam Australia logo



Secular not concerned with religion or religious matters

Oxfam Australia is involved in several activities (see **FIGURE 12.32**), including:

- *long-term development projects*. Oxfam Australia works with partner organisations and communities to provide sustainable self-help development projects in 30 countries around the world. Oxfam also works within Australia, particularly to improve conditions for Aboriginal and Torres Strait Islander peoples.
- *responding to emergencies*. Working closely with other Oxfam organisations, Oxfam Australia responds to emergency situations around the world with humanitarian assistance, such as water and sanitation.
- *campaigning for a more just world*. Oxfam Australia campaigns seek to address the underlying causes of poverty and injustice.
- *involving the Australian community*. Through events, fundraising activities and public campaigns, Oxfam Australia encourages Australians to be involved in the fight against poverty and injustice.
- *Oxfam Australia shops*. Sales of unique handicrafts from Swaziland, Peru, India and other countries support people who live with poverty and injustice.
- *ethical investment, banking and travel*. Oxfam Australia promotes economic and social justice by selling fair trade goods through its shops and supporting ethical banking and responsible travel.

FIGURE 12.32 Oxfam is involved in a range of activities designed to meet their purpose of helping to create lasting solutions to the injustice of poverty.



FIGURE 12.33 Nhongue village, Mozambique: Anita Omar tends to her garden and shows off the vegetables she has grown after Oxfam Australia and local partner Malhalhe installed wells in her community.



12.7.2 How Oxfam promotes health and wellbeing and human development globally

Oxfam Australia is committed to creating change in 30 countries across South and East Asia, Southern Africa and the Pacific Region.

- During emergency situations, Oxfam Australia provides life-saving assistance to people in need. Its work includes the provision of clean water, sanitation facilities, food and health services, and nutrition advice either directly or through other national or international organisations.
- Following natural disasters or conflicts, Oxfam Australia works with people and communities to develop long-term projects to rebuild lives and reduce the risk of future disasters or conflict. For example, in Mozambique, Oxfam Australia has worked with local partner organisations to establish irrigation systems that increase the potential for the growth of crops in farming communities.
- Oxfam seeks to influence governments, institutions and businesses to develop and implement laws, policies and practices that help people rise out of poverty.

Oxfam's work is aimed at one overall outcome: to bring about positive change in the lives of people living in poverty. The organisation focuses its work on six goals, which are shown in **FIGURE 12.35** and described in **TABLE 12.5**.

FIGURE 12.34 Port Vila, Vanuatu: Five-year-old John gives the thumbs up as he and his parents collect a hygiene kit from Oxfam after Cyclone Pam destroyed their home in March 2015.



FIGURE 12.35 Oxfam Australia has set out six goals that provide the focus for how their work will change the world.

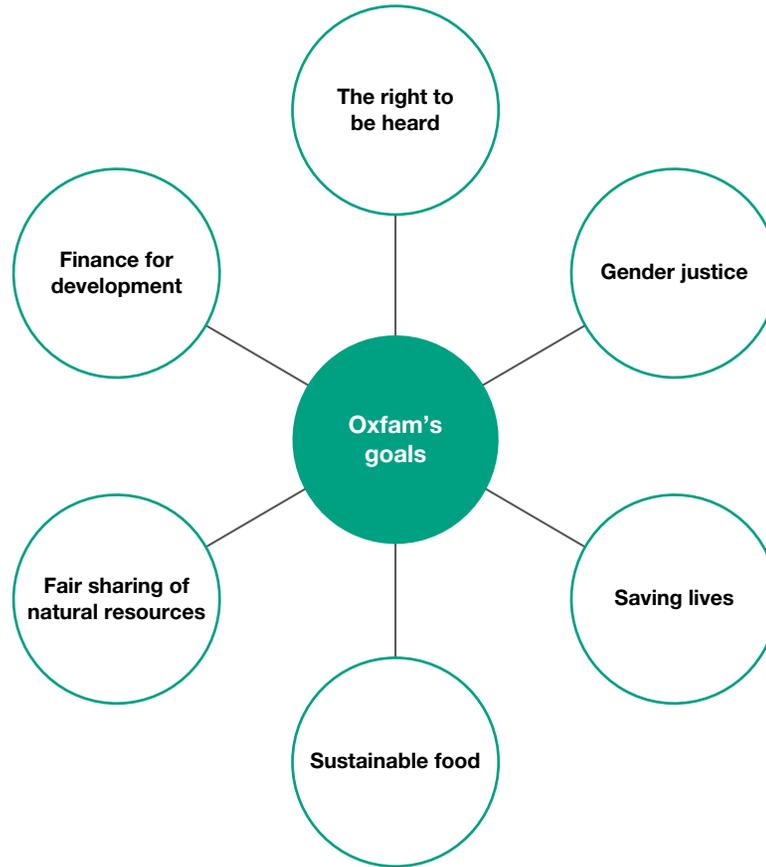


TABLE 12.5 The importance of Oxfam Australia's goals and their affect on human development and health and wellbeing

Goal	Why is this important? What does Oxfam do?	How it affects human development and/or health and wellbeing
Goal 1: Right to be heard: people claiming their right to a better life	<ul style="list-style-type: none"> When people have the power to claim their basic economic rights, they can escape poverty permanently. This core belief underpins Oxfam's development programs. With their partners and local communities, Oxfam helps people claim rights for themselves. 	<ul style="list-style-type: none"> This contributes to improved human development as people are provided with the skills, knowledge and opportunity to participate in decisions that affect the life of their community. This also promotes spiritual health and wellbeing as people feel a part of and connected to their community. It promotes health and wellbeing by removing poverty. People will have money to pay for food, water, clothing, shelter and healthcare, which will promote physical health and wellbeing. Escaping poverty will also improve emotional and mental health and wellbeing by removing the stress that is associated with not being able to access necessary resources due to poverty.

(Continued)

TABLE 12.5 The importance of Oxfam Australia’s goals and their affect on human development and health and wellbeing (Continued)

Goal	Why is this important? What does Oxfam do?	How it affects human development and/or health and wellbeing
Goal 2: Advancing gender justice	<ul style="list-style-type: none"> Human development is driven by empowered women. However, women and girls are still massively under-represented and often oppressed. Oxfam works to assist women and girls to speak out and demand justice and to assert their leadership. The right to gender justice underpins all of Oxfam’s work. 	<ul style="list-style-type: none"> This promotes health and wellbeing as women are often the victims of violence and often have limited resources so are more likely to miss out on food as they will feed family members before themselves. Gender equality leads to improved social mental and emotional health and wellbeing as women and girls have an opportunity to be happy and enjoy life. Human development is promoted as women can enjoy a decent standard of living and can participate in the lives of their community.
Goal 3: Saving lives now and in the future	<ul style="list-style-type: none"> Oxfam assists people caught up in natural disasters and conflict. Oxfam typically provides clean water, food and sanitation in disaster zones. Oxfam strives to ensure that civilians are protected as well. They also seek to reduce the risk to poor people of future disasters by continuing to work with them long after the immediate crisis is over to develop long-term solutions and poverty reduction. 	<ul style="list-style-type: none"> This promotes health and wellbeing by making sure people have the necessary basics to survive in times of crisis. Working to reduce the risks associated with future disasters helps promote human development by helping people achieve a decent standard of living and live a long and healthy life.
Goal 4: Sustainable food	<ul style="list-style-type: none"> To stop people going hungry, Oxfam works to secure food supplies so that people always have enough to eat. Almost one billion people go to bed hungry every night – not because there isn’t enough but because of the deep injustice in the way the food system works. 	<ul style="list-style-type: none"> Food is essential for good health and wellbeing. By ensuring people have enough to eat, malnutrition is reduced, which promotes physical health and wellbeing. When people are physically healthy their emotional and social health and wellbeing are improved. Human development is also promoted when people are healthy as they can go to work and children can attend school. This improves knowledge and helps create opportunities for people to participate in the life of their community and be empowered to have control over the decisions that affect their lives.
Goal 5: Fair sharing of natural resources	<ul style="list-style-type: none"> Natural resources are vital for prosperity and poor people are often not getting their fair share. This situation is worsened by the impacts of climate change. Oxfam lobbies governments, international organisations and corporations for fairer land policies and action on climate change 	<ul style="list-style-type: none"> Climate change has the capacity to reduce health and wellbeing and therefore human development. Access to food can be affected by changes in climate. Global warming and rising sea levels can result in people having to relocate as their homes and farms become flooded. Rates of infectious diseases can also increase. When people are ill they are unable to work and attend school. Therefore, lobbying for action on climate change has the potential to promote health and wellbeing and human development globally.

Goal	Why is this important? What does Oxfam do?	How it affects human development and/or health and wellbeing
Goal 6: Financing for development and universal essential services	<ul style="list-style-type: none"> Being able to access basic services such as health and education is essential to people's health and wellbeing and to human development. Oxfam works to ensure that governments provide finances necessary to sustain basic services for poor people. 	<ul style="list-style-type: none"> Access to healthcare is essential for promoting health and wellbeing. Women and children's health and wellbeing is dependent upon health checks being undertaken before, during and after birth. Access to basic medicines ensures people can recover quickly from ill health. Access to vaccinations promotes health and wellbeing and ensures that children are healthy enough to attend school enabling women to work and earn an income to escape from poverty. Human development is promoted as increased education and knowledge contributes to greater empowerment and the ability to contribute to social and political life within the community and people can enjoy a decent standard of living

12.7 Activity

Access the **Oxfam** weblinks and worksheets in the Resources tab and then complete the worksheets.

Resources

-  **Digital documents** The work of Oxfam worksheet (doc-32244)
 TREE/Oxfam partnership for WASH worksheet (doc-32242)
 Oxfam supporting women's economic development in Vietnam worksheet (doc-32243)
-  **Weblinks** The work of Oxfam
 TREE/Oxfam partnership for WASH
 Oxfam supporting women's economic development in Vietnam

12.7 Exercises

learn

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

12.7 Quick quiz



12.7 Exercise

12.7 Exam questions

Learning pathway

 **LEVEL 1**

1, 2

 **LEVEL 2**

3

 **LEVEL 3**

4, 5

Test your knowledge

- What is the purpose of Oxfam Australia?
- What does Oxfam describe as a just world?
- Outline four examples of the types of activities in which Oxfam Australia is involved.



Apply your knowledge

4. Draw a table like the one below to include:
- the name of each of the six goals of Oxfam
 - the meaning of each one
 - how each one promotes health and wellbeing
 - how each one promotes human development.

Name of Oxfam goal	Meaning	How it promotes health and wellbeing	How it promotes human development

5. Read the following example of the work of Oxfam.

Protecting Women and Girls' Sexual and Reproductive Health Rights

Oxfam Australia is working with communities in Zimbabwe through awareness raising, attitude and behaviour change to protect and promote women and girls' sexual and reproductive health rights. The project also works with women to establish and maintain small businesses which help increase their incomes and contribute to more sustainable livelihoods.

Source: <https://www.oxfam.org.au/country/zimbabwe/>

- Identify the Oxfam goal/s reflected in this example.
- Explain how this program promotes health and wellbeing and human development.

12.7 Quick quiz



12.7 Exercise

12.7 Exam questions

Question 1 (1 mark)

How was Oxfam formed?

Question 2 (1 mark)

What is the primary focus of Oxfam's work?

Question 3 (2 marks)

Irene is one of 20 women farmers from Zambia who have invested their skills, time and energy in one high-value banana crop — and are achieving extraordinary results. 'We decided to start a banana farm. We knew we could harvest them year-round and they have a high market value. I thought, if we put our efforts together, this project would work,' said Irene. Thanks to Oxfam supporters, the group received essential training and tools: an irrigation pump, business training, and a solar-powered electric fence to protect their crop. Since joining the project six years ago, Irene's life and the lives of her fellow farmers have changed for the better. 'Now, I get the benefits from the work I put in. I can send my children to school and food is not an issue. Our challenge is to invest in our children. For women, this project can bring about change. We can invest in our children's education. My children are like me; they are joyful like me,' said Irene.

Source: Adapted from: <https://www.oxfam.org.au/2016/02/these-women-are-fighting-against-extreme-poverty-with-bananas/>

Using an example from the extract above, **explain** how the Oxfam-funded project promotes the human development of Irene and her family.

Question 4 (4 marks)

Using examples from the extract in question 3, **explain** how the Oxfam-funded project promotes the health and wellbeing of Irene and her family.

Question 5 (3 marks)

In Nhongue village in Mozambique, hunger is real threat. 'Sometimes there are serious problems with food shortages, sometimes there's no rain and the farms don't produce much,' said mum of five, Recelia. 'That's why Malhalhe (an Oxfam partner) decided to give us goats to help us.' In Recelia's village, goats are distributed in phases. A family in need is identified and given two goats to care for and breed. Once they have produced their first kids, the family pass the original goats on to another family in need. 'Once they reproduce, I can sell them to buy food for my children.' Her new source of income is used for food such as maize, oil and vegetables; but it also means more money for medicine and school fees.

Source: <https://www.oxfam.org.au/2015/10/the-goats-that-gave-hope/>

Explain how the above Oxfam program promotes health and wellbeing and human development.

More exam questions are available in your learnON title.

12.8 KEY SKILLS

12.8.1 Describe and justify different types of aid

tivd-1863

KEY SKILL Describe and justify different types of aid

Tell me

To be able to apply this skill, you will need to be able to describe the three types of aid, which include emergency or humanitarian aid, bilateral aid and multilateral aid. Different aid is required depending upon the nature of the circumstances occurring in different countries. It is important to recognise the right type of aid that will bring about improvements in health and wellbeing and human development. To do this you will need to understand the purpose of each type of aid and then explain why the type of aid is the most appropriate given the information you have available.

This can be shown in the following information which outlines Australia's response to the hurricane that affected Haiti in 2016.

HUMANITARIAN ASSISTANCE TO HAITI

Following the devastating impact of Hurricane Matthew, Australia will provide urgent humanitarian assistance to Haiti. The Department of Foreign Affairs and Trade (Department of Foreign Affairs and Trade (DFAT) will contribute \$2.5 million to the international effort to assist Haitians in the aftermath of Hurricane Matthew when at least 546 Haitians were killed, thousands of homes destroyed and there was a surge in cholera cases, leaving more than 1.4 million Haitians in need of humanitarian assistance.

The Australian government will provide \$1.5 million to UNICEF to improve access to clean water and sanitation to help combat the cholera epidemic and threat of other water-borne diseases. This follows an international appeal by the United Nations to intensify efforts to reduce the transmission of cholera and provide support to Haitians most affected by the disease. We will also contribute \$1 million to the International Organization for Migration to provide shelter to people whose homes have been damaged or destroyed.

In addition to this support, Australia's High Commission in Port of Spain is distributing hygiene kits and clean water to 800 affected families through the local arm of Plan International. We are also working with RedR Australia to provide additional Australian humanitarian experts on the ground in Haiti to support the international effort.

Australia's assistance will support the international response to Haiti, led by the UN and leading regional donors, to address the most urgent needs of affected Haitians.

Source: Minister for Foreign Affairs, Hon. Julie Bishop MP, press release 19 October, 2016.

Show me

Using the information above, describe and justify the types of aid being provided by the Australian government.

The response from DFAT is an example of humanitarian or emergency aid.¹ This type of response is in line with the DFAT priority 'Building resilience: humanitarian assistance, disaster risk reduction and social protection.'² This type of aid is provided in times of emergencies when it is important to provide the basic needs to keep people alive.³

As a result of the hurricane in Haiti, people do not have access to clean water or sanitation, which has caused a cholera epidemic. Many

1 The type of aid represented is clearly stated.

2 This identifies that this type of aid meets the aims of the government's aid budget.

3 This describes humanitarian or emergency aid.

people have had their homes destroyed and have no shelter. These situations are putting people's health and wellbeing and life at risk and need to be addressed immediately and therefore humanitarian assistance is the type of aid that is most appropriate.⁴

To improve the effectiveness of the aid provided by the Australian government, DFAT has also partnered with⁵ and provided funds to multilateral organisations including UNICEF as part of the United Nations and the International Organization for Migration. The United Nations is coordinating the international effort. Providing funds to UNICEF means resources can be pooled, which will extend the ability of the Australian government to adequately address the issue and avoid wasting valuable resources. Providing funds to the International Organization for Migration enables DFAT to use the expertise of this organisation to more adequately address the need for shelter.⁶

Partnerships have also been established with a local arm of the NGO Plan International to distribute hygiene kits and clean water. NGOs complement the aid program and have expertise in working in emergency situations where fast and flexible responses are needed. They have local knowledge of the area and the people, which can be used to reach as many people as possible and provide emergency aid.⁷

4 The use of humanitarian aid in this situation is justified as being appropriate with reasons given.

5 The decision to partner with other agencies is recognised and justified as contributing to the effectiveness of Australia's response.

6 Funds being provided to multilateral agencies are identified and the reasons for doing so are justified.

7 Partnerships with an NGO are identified and the benefits of doing so are clearly outlined.

Practise the key skill

1. Describe the three types of aid.
2. Read the case study below and answer the following questions:
 - a. Identify the type of aid evident in the case study.
 - b. Name the Australian Government's aid priority represented in the case study.
 - c. Justify the aid provided in the case study by considering how it promotes health and wellbeing and human development.

UNDERSEA TELECOMMUNICATIONS CABLE PROJECT

Australia is committed to supporting PNG and Solomon Islands to build their economies through sustainable development and resilient technologies, enabling e-commerce and the digital delivery of services. In an ambitious joint project, planning is underway to build high-speed telecommunications cables from Australia to PNG and to, and within, Solomon Islands, allowing faster and more reliable Internet connections in both countries.

PNG's existing undersea telecommunications cable to Sydney is nearing the end of its useful life. Solomon Islands has no undersea telecommunications cable link, leaving it dependent on expensive and unreliable satellite communications. The Undersea Telecommunications Cables Project is one element of Australia's International Cyber Engagement Strategy that sets out Australia's approach to help bridge digital divides across the Indo-Pacific. The project will support the development of entrepreneurship, digital skills and the further integration of these Pacific countries into the global marketplace.

Source: Department of Foreign Affairs and Trade. Australian Aid Budget Summary 2018–19, p. 17.

12.8.2 Explain and evaluate the role of NGOs in promoting health and wellbeing, and human development globally

KEY SKILL Explain and evaluate the role of NGOs in promoting health and wellbeing, and human development globally

Tell me

To address this skill, you will need to be able to identify the range of non-government organisations (NGOs) that provide aid, explain what they do and how well they do in relation to promoting health and wellbeing and human development globally.

There are many NGOs, such as World Vision, the Red Cross and Oxfam, that work in a range of countries to promote health and wellbeing and human development. These NGOs tend to focus on smaller community-based projects, and often work in collaboration with governments and other aid agencies.

The following are the types of questions you should consider when explaining the role these NGOs play in promoting health and wellbeing and human development:

- Does the organisation have focus areas or priorities?
- How does it provide support for individuals and communities, and how does this work help promote health and wellbeing?
- What is meant by human development and how is this promoted through the work they do?

This skill is often tested by way of a case study. You could use the following steps to help you explain and evaluate the role of an NGO.

Consider:

- What is the role of the NGO in the case study provided?
- What is the aim of the program?
- How is the program delivered?
- How effective is the program? What works/doesn't work?
- How will the program promote health and wellbeing?
- How will the program promote human development?

Show me

The following case study is an example of an aid program implemented by World Vision. This example is used to explain and evaluate the role of this NGO in promoting health and wellbeing and human development.

CHILDREN TRAIN THE COMMUNITY TO WASH ITS HANDS OF DISEASE

In countries such as Senegal, Tippy Taps initiative Senegal in Africa, World Vision supported the introduction of a peer education program to help reduce diseases such as diarrhoea and dysentery.

Mbadakhone is situated in the department of Mbirkelane in Senegal, where agriculture is the community's main source of income. Small business thrives in the area and there is a market every two weeks. This environment creates a free-for-all for disease, as people come from all over in order to buy and sell goods — frequently meeting and greeting each other with unwashed hands.

The program involved children and young people signing up for a peer education program designed to build their knowledge of the importance of hygiene and hand washing, how to teach other community members and how to install Tippy Taps. A Tippy Tap is a foot-operated facility for washing hands consisting of an empty 5-litre container, three stakes and a cord.

The peer educators set the Tippy Taps up at key points around the village with the easy-to-follow instructions that they learned in their training. Working with the coordinator of the local committee for child protection (LCCP) in Mbadakhoune, the peer educators spent their summer holidays getting the message out to local villages. The program made such an impression that villagers were immediately asking for hand-washing facilities to be set up in homes and outside mosques.

According to Ousman, a community elder who has a Tippy Tap set-up in his home, 'In the past we used to leave the toilets without washing our hands, but since the LCPC coordinator and children have passed through the village to tell us about bodily hygiene and to set up some Tippy Taps, we have started to adopt better handwashing habits.'

Source: World Vision website, 13 December 2016.

FIGURE 12.36 To make a Tippy Tap, you need an empty 5-litre plastic container, a metre of cord, a dozen small bars of soap or a large bar that you can divide up, some 5-litre containers, wire, stakes (two forked, one straight) and a 1-metre stick.



World Vision works with children, families and communities around the world to overcome poverty and injustice. They work to deliver a range of projects that aim to improve the health and wellbeing of community members, in particular, the health and wellbeing of pregnant women, mothers and children. Their goal is to reduce under-five and maternal mortality through seven core interventions for mothers and 11 core interventions for children.⁸

This project introduced in Senegal aims to reduce diseases such as diarrhoea and dysentery that are caused when people come together at the local market and meet and greet each other with unwashed hands.⁹

World Vision funded and supported the development of a peer education project where children and young people signed up to build their knowledge of the importance of hygiene and hand washing and how to teach other community members. They also installed Tippy Taps at various locations in the village with easy-to-follow instructions on how to use them. This project is a small, regional based project for which non-government organisations have particular expertise. They usually focus on small projects that are quite targeted and involve the community. Non-government organisations are also able to work in rural areas where other aid generally does not reach.¹⁰

The project was effective in changing behaviour as villagers were immediately asking for hand-washing facilities to be set up in homes and outside mosques. The community elder indicated that people had started to adopt better hand washing habits as a result of the project.¹¹

With improved hygiene the health and wellbeing of the community will be promoted. Less disease will be spread among the villagers so their physical health and wellbeing will be improved. With improved physical health and wellbeing, emotional health and wellbeing will be improved and people will feel happier. Fewer people would contract diarrhoea and dysentery, which would reduce under-five and maternal mortality.¹²

8 The role of World Vision is clearly stated including the focus of their work and the strategies they use.

9 The aim of the project is outlined along with the nature of the problem.

10 The project supported by World Vision is outlined and is evaluated in terms of the importance of aid provided by non-government organisations.

11 The project is evaluated in terms of its success in bringing about behaviour change.

12 The corresponding impact that this behaviour change could have in relation to promoting health and wellbeing is clearly outlined.

With better health and wellbeing, the conditions that promote human development are more likely to be achieved. When children are healthy, they are better able to develop their knowledge and skills by attending school. This will build their capacity to earn an income and gain employment, which provides the resources to achieve a decent standard of living, such as food, clothing, shelter and medical care. This will help people lead a longer, healthier and happier life. When people are healthy, educated and have a decent standard of living, they are more empowered to participate in the decision-making processes of their community.¹³ In this way, health and wellbeing and human development are promoted through this World Vision project.

¹³ The ability of the project to promote human development is outlined clearly.

Practise the key skill

REDUCING THE THREAT OF DRUG RESISTANT TUBERCULOSIS ON AUSTRALIA'S BORDER

The Department of Foreign Affairs and Trade recognises the importance of preventing and responding to the introduction and spread of infectious diseases. Health crises threaten economic and human development. International travel, urbanisation and weak health systems in some countries contribute to the rapid spread of pathogens around the globe. Antimicrobial resistance is a major global health threat. If not tackled decisively, it could cause an additional 10 million deaths a year by 2050. The Australian Government is working with Australian NGOs in PNG to help reduce the global threat caused by drug-resistant TB. With funding from the ANCP, the Burnet Institute is helping to tackle drug-resistant TB on Daru Island in PNG.

Recognising the link between unfinished TB treatment and the development of drug-resistant strains of TB, a team of five peer counsellors, called TB-PALS (people affected by, living with, or having survived TB) are supporting TB patients to complete their treatment. TB-PALS provides education and counselling to support patients and their families through their lengthy treatment. This patient-oriented approach, funded by the Australian Government, is keeping patients in care and enabling a cure from TB.

Source: Department of Foreign Affairs and Trade. Australian Aid Budget Summary 2018–19, p. 111.

Read the information above and answer the following questions

3. The government provides grants to more than 57 registered non-government organisations (NGOs) in Australia. What are NGOs? Give an example of two NGOs.
4. DFAT partnered with NGOs to address drug-resistant TB. Explain how aid provided by NGOs is effective in complementing Australia's aid program.
5. Discuss how the example in the information provided promotes health and wellbeing and human development.

12.9 Review

12.9.1 Topic summary

12.2 Types of aid

- Australia, like most other high-income countries, provides aid or assistance to low- and middle-income countries in the event of a crisis or for the development of long-term sustainable improvements.
- There are three types of aid: emergency or humanitarian aid, bilateral aid and multilateral aid.
- Emergency aid is provided to people in immediate distress to relieve suffering during and after emergencies, such as conflict and natural disasters, and includes food, water, medicines and shelter.
- Bilateral aid is provided by the government of one country to the government of another. Its purpose is to help reduce poverty and bring about long-term sustainable development. Bilateral programs can range from small, community-based programs to large infrastructure projects.
- Bilateral aid sometimes attracts criticism as the goods and services may be provided by companies from the donor country and could favour the economic and political needs of the donor country rather than the needs of the recipient country.
- Multilateral aid is aid that is provided through an international organisation such as the World Bank, United Nations or World Health Organization. This aid is often used to address global issues that require a global response.
- Non-government organisations (NGOs) are non-profit organisations that work to promote health and wellbeing and human development while operating separately from the government.
- Aid provided by NGOs is usually focused on smaller projects that are more targeted and often work in collaboration with government and local aid agencies to improve health and wellbeing and human development.

12.3 The features of Australia's aid program

- The Australian government's aid program is administered by the Department of Foreign Affairs and Trade (DFAT).
- The purpose of our aid program is to promote Australia's national interests by contributing to sustainable economic growth and poverty reduction. This is done by focusing on private sector development and enabling human development.
- The government works in partnership with other government departments and agencies, NGOs, businesses and community groups in Australia and overseas to deliver our aid program.
- Most of Australia's aid is provided as bilateral aid, although we also provide funds to international organisations through multilateral aid, provide humanitarian assistance and provide funds to support the work of registered NGOs.
- Approximately one-third of the aid budget is allocated to multilateral aid, which helps extend the reach of our aid program as their large size enables them to undertake projects on a scale that would not be possible by Australia alone.

12.4 The Australian government's aid priorities

- Australia's aid program is guided by six priority areas that contribute to breaking the cycle of poverty and improving health and wellbeing and human development. The six priority areas are:
 - education and health
 - infrastructure, trade and international competitiveness
 - agriculture, fisheries and water
 - building resilience: humanitarian assistance, disaster risk reduction and social protection
 - effective governance: policies, institutions and functioning economies
 - gender equality and empowering women and girls.
- NGOs also provide aid and play an important role in promoting the health and wellbeing and human development of people in middle- and low-income countries.
- Many NGOs rely on funding from the Australian government through its aid program as well as funds generated from public donations.

12.5 World Vision and its role in promoting health and wellbeing and human development globally

- Three examples of NGOs are World Vision, the Red Cross and Oxfam.
- World Vision engages governments, institutions, donors, communities and the public to address the underlying causes of poverty, and supports training and projects that empower communities to speak up for their rights and influence change.

12.6 Red Cross and its role in promoting health and wellbeing and human development globally

- Australian Red Cross is present in many countries across the world, with the main focus being the Asia-Pacific region.
- Australian Red Cross overseas aid projects include disaster management, water and sanitation provision, and basic health initiatives.

12.7 Oxfam and its role in promoting health and wellbeing and human development globally

- Oxfam focuses its work around six key goals that help promote health and wellbeing and human development.

Resources

 **Digital document** Summary (doc-36147)

12.9.2 Key terms

Aid assistance given to countries or communities in the event of a crisis or for the development of long-term sustainable improvements

Bilateral aid the provision of aid from the government of one country to the government of another country

Emergency aid rapid assistance given to people or countries in immediate distress to relieve suffering during and after emergencies such as wars and natural disasters, for example floods, tsunamis or earthquakes. Emergency aid is also called 'humanitarian aid'.

Governance the structures and processes that are designed to ensure accountability, transparency, rule of law, inclusiveness and broad-based participation in society

Humanitarian assistance see Emergency aid

Infrastructure the physical and organisational structures, facilities and systems (e.g. buildings, roads, power supplies) needed for the operation of a society

Microfinance small, low-cost financial services for poor people that involve low-interest loans to develop small businesses

Multilateral aid aid provided through an international organisation, such as the World Bank, United Nations or World Health Organization. Multilateral aid combines donations from several countries and then distributes them to the recipients.

Non-government organisation (NGO) non-profit organisations work to promote health and wellbeing and human development and they operate separately from governments

Non-government organisation (NGO) aid NGOs take different approaches to aid, which can include specific projects or programs, emergency aid, volunteering, education and development. The aid provided by NGOs often focuses on communities.

Official Development Assistance (ODA) financial assistance provided by donor government agencies to low- and middle-income countries or to multilateral aid agencies. Also known as aid.

Private sector part of a country's economic system that is run by individuals and companies, rather than the government

Secular not concerned with religion or religious matters

Sustainable development development that meets the needs of the present without compromising the ability of future generations to meet their own needs

Transnational involving several nations

12.9.3 Extended response: build your exam skills

tlvd-
2887

Source 1

Gender equality

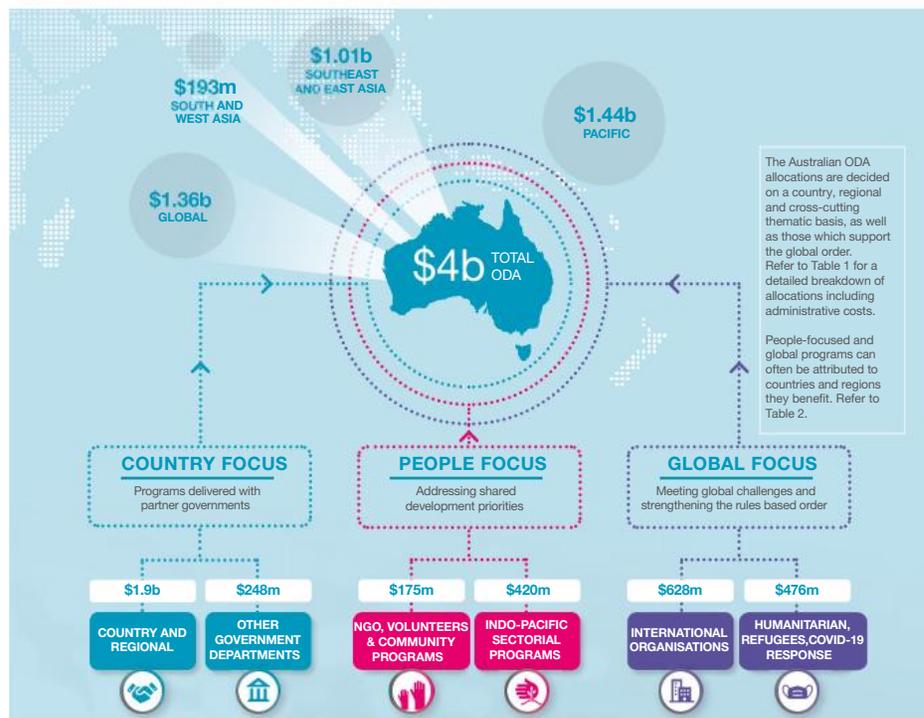
This year the department has spent approximately \$1.3 billion on investments that contribute towards gender equality and women's empowerment. This remains a high priority for Australia. High-level engagement and advocacy led by the Foreign Minister has raised the profile of gender equality as an important feature in the response to COVID-19. We supported this by providing assistance that targets immediate and long-term needs, including support for:

- women and girls affected by violence. \$10 million has been granted for UN Women to deliver essential services and targeted support across the Indo-Pacific over three years (2020 -2022). In addition, through our Nabilan program, we worked with the Government of Timor-Leste to help prevent the spread of COVID-19 in women's shelters

- the Water for Women program (2017 -2022), to enable an additional four million people to access safe and affordable water and sanitation facilities, and improve hygiene practices
- an emergency relief and resilience fund through Investing in Women. This helped women's small and medium enterprises in Southeast Asia respond to the pandemic.

In November an independent evaluation of Australia's efforts in ending violence against women and girls in the Indo-Pacific found we had provided strong and sustained regional leadership which helped to build partner government commitment and capacity to address this major problem.

Source 2



Source: <https://www.dfat.gov.au/sites/default/files/pbs-2020-21-dfat-aid-budget-summary.pdf>, pg. 2

Source 3

Australia's development assistance is focused on the Indo-Pacific and promotes the national interest by contributing to sustainable economic growth and poverty reduction. We work with partners to achieve the SDGs by helping to strengthen the private sector and supporting human development..... Our assistance helps partner countries improve governance, education and health and enhance productivity in agriculture, fisheries and water. We help build the infrastructure and capacity that developing countries need to benefit from trade. We promote gender equality because eliminating gender disparities in the region would significantly boost per capita incomes.

Source: <https://www.dfat.gov.au/publications/minisite/2017-foreign-policy-white-paper/fpwhitepaper/pdf/2017-foreign-policy-white-paper.pdf>

Explain how Australia's aid program supports the achievement of two SDGs using the stimulus material and your knowledge of:

- the SDGs
- different types of aid
- key features of Australia's aid program.

8 marks

TIPS

- Before you start writing your response, plan how you will approach this question and the order in which you will cover each of the required elements. You must use information in the stimulus material and your own knowledge.
- Before writing, read the information in each source and use different coloured highlighters to identify relevant examples that connect Australia's aid program to the achievement of any of the SDGs. Select two SDGs that are well represented in the stimulus material as this will provide you with a range of examples to include in your response. Use your own knowledge of the features of Australia's aid program to either extend your explanation or to fill in any gaps that might be covered in the stimulus material.
- Ensure you use the correct terminology when referring to the different types of aid provided by Australia's aid program and use examples from the stimulus material to show how the different types of aid helps countries achieve the two SDGs.

12.9 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

12.9 Exam questions

12.9 Exam questions

Question 1 (1 mark)

Source: *VCE 2014, Health and Human Development Exam, Q.11.a*; © VCAA

South Sudan, a country in Africa, is increasingly reliant on emergency aid, with the number of people in need of food aid increasing significantly. It is a country in conflict and needs urgent support to be able to provide enough food, water and essential services to its people.

Oxfam is a non-government organisation working in South Sudan to provide people with safe drinking water and toilets/latrines. It runs hygiene promotion activities to prevent the outbreak of disease and to educate people about safe hygiene practices. It also works with the World Food Programme to help distribute food supplies.

Source: Adapted from: www.oxfam.org.au

What is emergency aid?

Question 2 (2 marks)

Source: VCE 2013, *Health and Human Development*, Section A, Q.11.a; © VCAA

In 2012, the then Australian Foreign Minister, Bob Carr, announced the introduction of a Comprehensive Aid Policy Framework to guide the Australian aid budget over the next four years.

Highlights of the Comprehensive Aid Policy Framework include the following.

- More than 30 per cent of the aid budget will be delivered through partnerships with multilateral organisations.
- At least 10 per cent of the aid budget will be delivered through partnerships with non-government organisations.

Source: Adapted from: <http://foreignminister.gov.au>

Identify one type of aid that is not mentioned in the highlights of the Comprehensive Aid Policy Framework above.

Question 3 (7 marks)

Read the following information, which outlines Australia's response to the earthquake and tsunami that affected Indonesia in 2018.

SULAWESI EARTHQUAKE AND TSUNAMI ASSISTANCE

Australia will provide an additional \$5 million package of humanitarian assistance to support the Government of Indonesia and humanitarian partners to respond to the devastating earthquake and tsunami in Central Sulawesi. This follows the Prime Minister's announcement of an initial \$500,000 to the Indonesian Red Cross for food and essential relief items such as blankets and tarpaulins.

The additional funding to the UN and local humanitarian partners will provide temporary shelter, access to safe drinking water and health care for injured and displaced people.

Australia is planning to deploy a medical team and is currently working with the Government of Indonesia to determine where this will be best deployed to support relief efforts. Australia is also in a position to provide humanitarian emergency relief supplies including shelter, water and hygiene kits. The remoteness of the area and loss of communications infrastructure continues to make it difficult for Indonesian authorities to assess the full scale of the disaster at this stage.

The Australian Government stands with the Indonesian Government in offering support to the people of Indonesia affected by this tragedy.

Source: edited extract from joint Media release: The Hon Scott Morrison MP, Prime Minister, Senator the Hon. Marise Payne, Minister for Foreign Affairs, The Hon Christopher Pyne MP, Minister for Defence. https://foreignminister.gov.au/releases/Pages/2018/mp_mr_181003.aspx?w=E6pq%2FUhzOs%2BE7V9FFY1xQ%3D%3D.

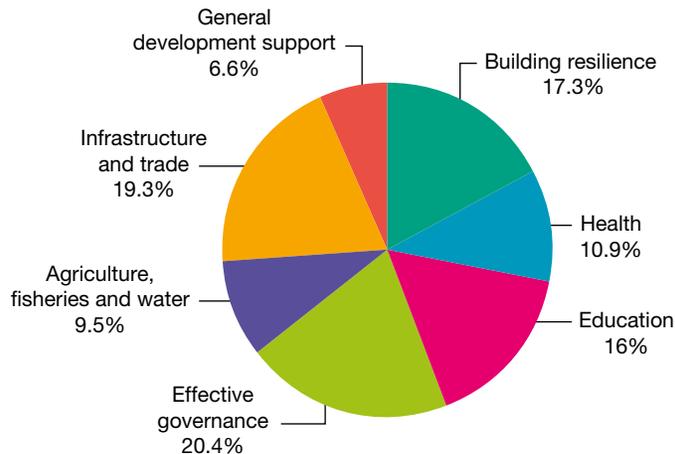
- Describe** the different types of aid provided by DFAT reflected in the press release. **4 marks**
- Use one of the types of aid selected in question (a) and **justify** why it would have been used. **2 marks**
- Identify** the Australian aid priority represented in the information. **1 mark**

Question 4 (8 marks)

The following graph shows the percentage of overseas development assistance (aid) provided by the Australian government to its aid priorities in 2018–19.

- Select one of the priorities represented in the graph. **Describe** the priority area chosen and give an example of the work DFAT has done towards achieving this priority. **3 marks**
- Identify** the Australian aid priority that is not reflected in the graph. Explain how this priority selected promotes health and wellbeing and human development. **5 marks**

FIGURE 12.37 Australian overseas development assistance by investment priority



Source: Commonwealth of Australia, DFAT, *Australian Aid Budget Summary 2018–19*, Canberra.

Question 5 (8 marks)

Read the following information about a project implemented by Oxfam to address gender equality in Ghana.

EMPOWERING WOMEN FARMERS TO END HUNGER AND POVERTY

Mary lives in Goziir, Northern Ghana with her husband and six family members. Mary has benefitted from Oxfam’s projects to help small-scale farmers increase their crop yields, build energy efficient stoves and have access to small loans.

Last year she doubled her maize harvest. Now she wants to share what she learnt at the farmer field school with other women in her community. They already pool their money in a savings group. By working together, they are fighting food shortages during the long hunger season in northern Ghana.

Source: Oxfam, ‘What we do,’ Oxfam website, accessed 10 March, 2019.

- a. Outline** two ways in which NGOs such as Oxfam carry out their work. **2 marks**
- b. Explain** the advantages of the aid provided by non-government organisations such as Oxfam. **2 marks**
- c. How** might the program being implemented in Northern Ghana promote health and wellbeing and human development? **4 marks**

on Resources

-  **Digital document** Key terms glossary (doc-36134)
-  **Exam question booklet** Topic 12 Exam question booklet (eqb-0066)
-  **Interactivities** Crossword (int-6901)
Definitions (int-6902)

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 12 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- 12.1** Key terms glossary (doc-36134)
- 12.3** Shared Value Partnerships in Sri Lanka worksheet (doc-32236)
- 12.4** Australian aid and Samoa: bridges worksheet (doc-32237)
Australian aid and Samoa: voters with a disability worksheet (doc-32238)
- 12.5** World Vision water for everyone worksheet (doc-32239)
- 12.6** Australian Red Cross worksheet (doc-32240)
Australian Red Cross water project in Myanmar worksheet (doc-32241)
- 12.7** The work of Oxfam worksheet (doc-32244)
TREE/Oxfam partnership for WASH worksheet (doc-32242)
Oxfam supporting women's economic development in Vietnam worksheet (doc-32243)
- 12.9** Summary (doc-36147)
Key terms glossary (doc-36134)

Exam question booklets

- 12.1** Topic 12 Exam question booklet (eqb-0066)
- 12.9** Topic 12 Exam question booklet (eqb-0066)

Teacher-led videos

- 12.3** Partnerships regarding Australian Aid (tlvd-0268)
- 12.8** Key skill: Describe and justify different types of aid (tlvd-1863)
Key skill: Explain and evaluate the role of NGOs in promoting health and wealth and human development globally (tlvd-1931)
- 12.9** Extended response: build your exam skills (tlvd-2887)

Weblinks

- 12.3** Shared Value Partnerships in Sri Lanka
- 12.4** Australian aid and Samoa: bridges
Australian aid and Samoa: voters with a disability
- 12.5** World Vision water for everyone
- 12.6** Australian Red Cross
Australian Red Cross water project in Myanmar
- 12.7** The work of Oxfam
TREE/Oxfam partnership for WASH
Oxfam supporting women's economic development in Vietnam

Interactivities

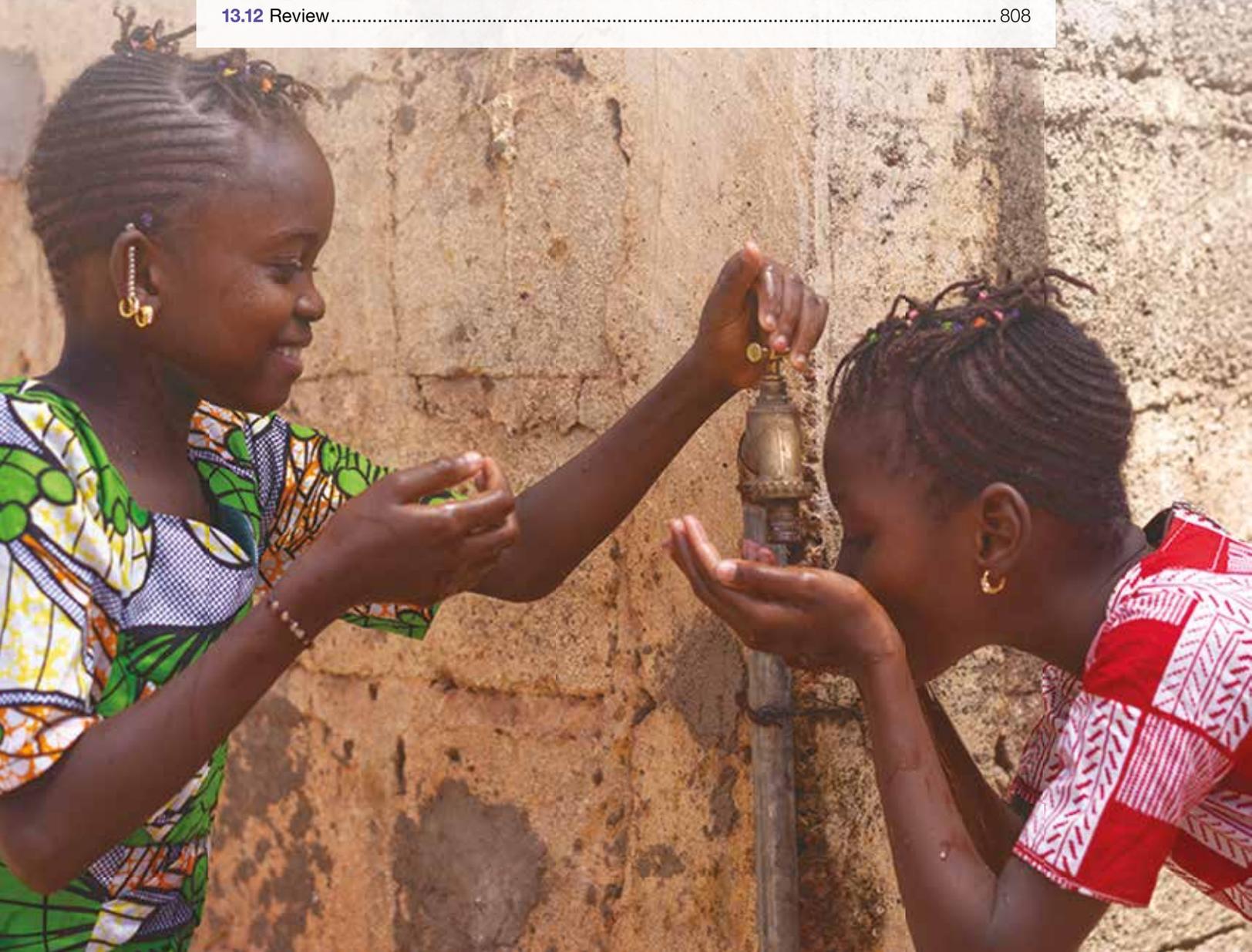
- 12.9** Crossword (int-6901)
Definitions (int-6902)

To access these online resources, log on to www.jacplus.com.au.

13 Programs addressing the Sustainable Development Goals

LEARNING SEQUENCE

13.1 Overview	743
13.2 Features of effective aid programs.....	744
13.3 Programs to address the SDGs including SDG 1 No poverty.....	751
13.4 Aid programs addressing SDG 2 Zero hunger	757
13.5 Aid programs addressing SDG 3 Good health and wellbeing.....	764
13.6 Aid programs addressing SDG 4 Quality education.....	772
13.7 Aid programs addressing SDG 5 Gender equality	777
13.8 Aid programs addressing SDG 6 Clean water and sanitation.....	783
13.9 Aid programs addressing SDG 13 Climate action.....	788
13.10 Taking social action	793
13.11 KEY SKILLS.....	802
13.12 Review.....	808



13.1 Overview

Key knowledge	Key skills
Features of effective aid programs that address the Sustainable Development Goals (SDGs), and examples of effective implementation, with details of one such program including: <ul style="list-style-type: none">• its purpose and the SDG/s addressed• details of implementation and the partnerships involved• contribution to promoting health and wellbeing, and human development.	Analyse and evaluate the effectiveness of aid programs in promoting health and wellbeing, and human development
Ways in which individuals can engage with communities and/or national and international organisations to take social action that promotes health and wellbeing	Describe and justify ways of taking social action to promote health and wellbeing

Source: VCE Health and Human Development Study Design © VCAA; reproduced by permission.

Key terms

Aid	Microfinance
Boycott	Stakeholders
Civil society	Subsistence

Exam terminology

Analyse Examine the components of; Look for links, patterns, relationships and anomalies

Evaluate Make a judgement, weigh up the pros and cons

Describe Provide a general description

Justify Give reasons and/or evidence to support a point of view

Resources

 **Digital document** Key terms glossary (doc-36135)

 **Exam question booklet** Topic 13 Exam question booklet (eqb-0067)

13.2 Features of effective aid programs

KEY CONCEPT Understanding the key features of effective aid programs

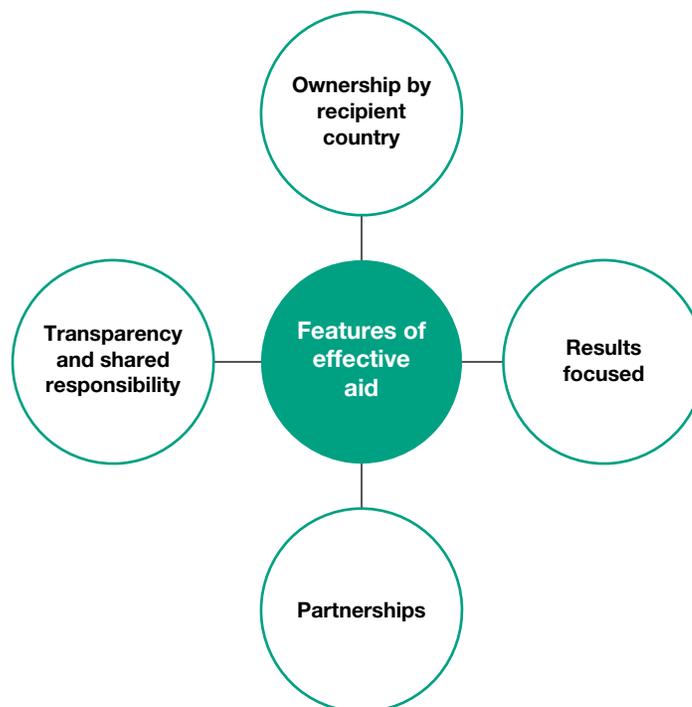
As you have seen in the previous topics, there are many similarities and differences in the health status of low-, middle- and high-income countries, but there is a need to improve health and wellbeing in *all* countries. The SDGs provide the framework for global action to address inequalities, reduce poverty and achieve sustainable development. Through aid or development assistance, a range of programs have been implemented, particularly in low- and middle-income countries. The provision of development assistance or international aid has now become quite complex and involves multilateral organisations, financial institutions, non-government organisations, the private sector and **civil society**. Without good coordination and partnerships in place, there is a risk that some countries may not receive any aid, others may receive aid that is not as effective as it could be or it duplicates programs that have already been implemented by other organisations.

In recognition of this, an international forum with representatives from 160 countries and 50 other organisations came together in 2011 and developed a set of shared, interconnected principles that are recognised as being the essential features of effective aid programs (see **FIGURE 13.1**). At this forum there was agreement to collaborate to ensure that effective aid programs were being implemented.

on Resources

Teacher-led video Features of effective aid (tlvd-0269)

FIGURE 13.1 Features of an effective aid program



Four key features were identified as being necessary for aid programs to be effective:

- ownership of the programs being implemented
- focused on results that address the underlying causes of poverty, inequality and improved health and wellbeing

Civil society individuals and organisations in a society that are independent of the government

- partnerships and collaboration for development
- transparency and accountability.

The effectiveness of aid is tied closely to why it is given and how it interacts with other policies, which may reduce or even reverse its positive impact. The outcomes of effective aid are to reduce poverty and inequality in low- and middle-income countries, to promote human rights, and to move towards a more equal and stable global system. How aid is delivered to low- and middle-income countries is just as important as why it is given.

13.2.1 Features of effective aid

Ownership

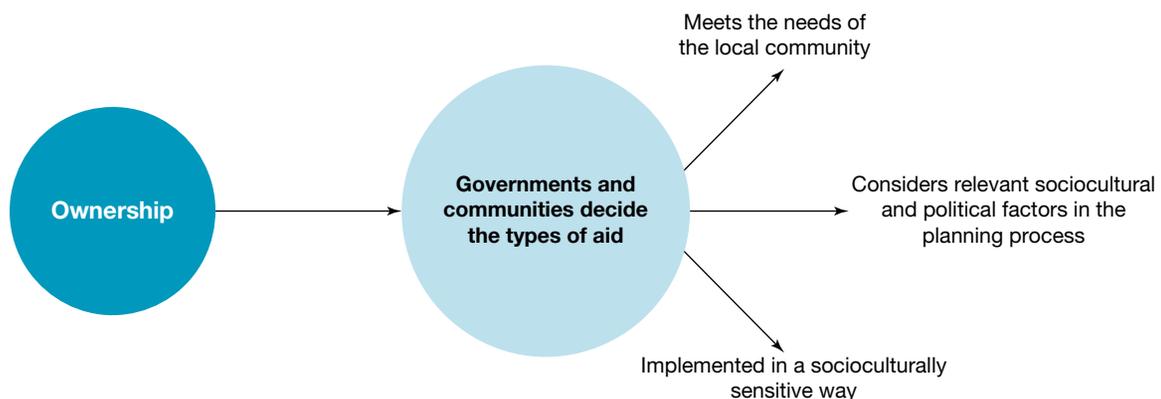
For aid to be effective and sustainable, countries receiving the aid (known as recipient countries) must have ownership of the program, which means they must be involved in deciding the type of aid that will best meet their needs. This ensures that the program fits with the longer-term needs and plans of the recipient country. It is not effective for aid organisations or governments of donor countries (those giving the aid) to come in and make decisions about what they think a country needs and how a program should be implemented. For instance, if a community has high child mortality rates from malaria, and wants to implement a program aimed at improving access to insecticide-treated bed nets and anti-malarial medication, this should be supported by the donor country and any other aid organisation already working in the country.

FIGURE 13.2 Delivering messages in local languages and using visual aids for those who are illiterate demonstrates an understanding of the community and promotes social sustainability.



Programs need to consider the sociocultural and political aspects of the community and be implemented in a socioculturally sensitive way. For example, before implementing an education program it might be important to consider that males are more likely to attend school than females. Therefore, any program would also need to focus on encouraging families to send their daughters to school. The provision of separate male and female classes and separate toilet facilities could be possible solutions. Delivering messages in local languages and using visual aids for those who are illiterate demonstrates an understanding of the community. It may also be appropriate to focus on developing the skills and knowledge of women, as they are responsible for the majority of domestic and agricultural work. This will ensure that the program is socially sustainable (see **FIGURE 13.3**).

FIGURE 13.3 Ownership is an important feature of effective aid programs as it ensures the recipient country has ownership of the program, meaning it is more likely to be socially and economically sustainable.



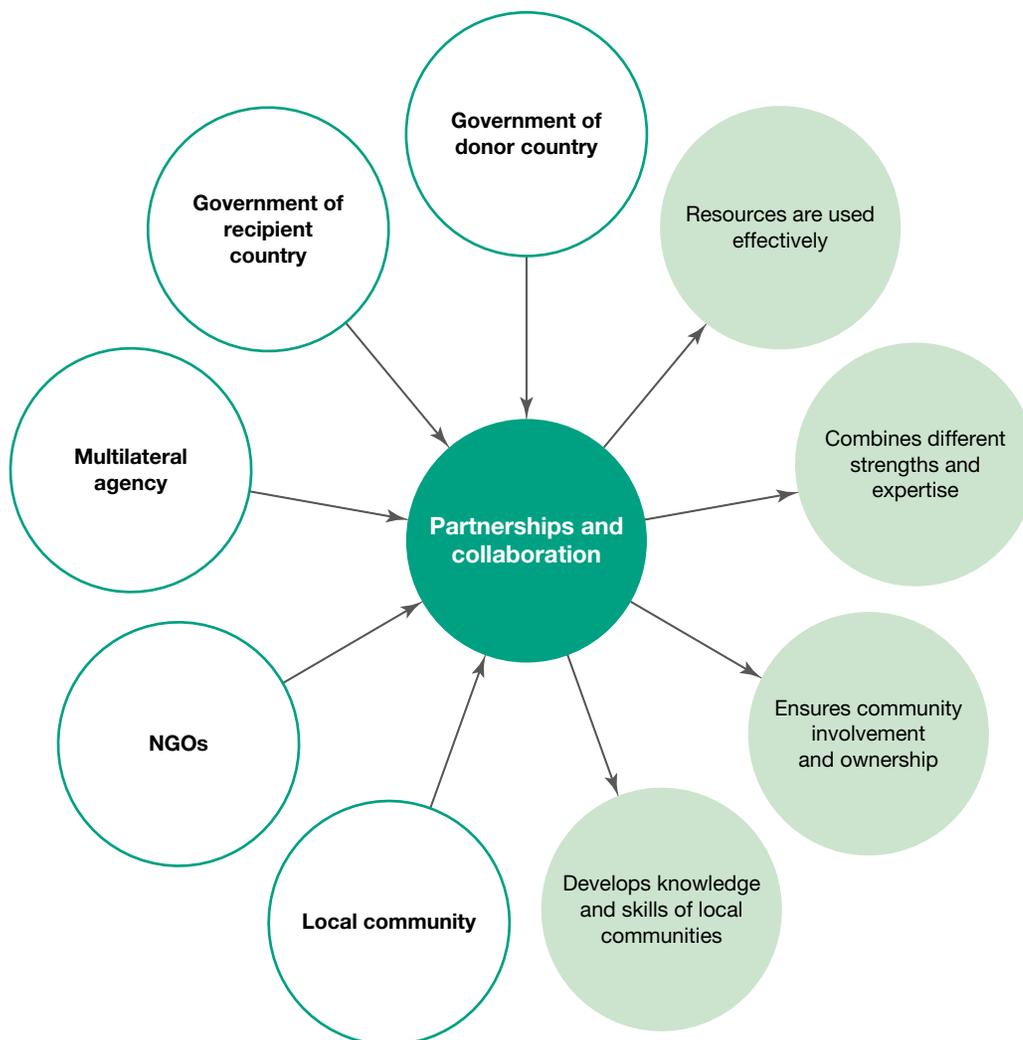
Partnerships and collaboration

An effective program relies upon the participation and collaboration of all **stakeholders**. By forming partnerships, the differing strengths of government, non-government organisations (NGOs) and local communities can be used to implement effective programs that make efficient use of the resources available and avoid duplicating other programs with the same objective. Partnerships could include the government of the recipient country, the government of the donor country, a multilateral aid agency such as the World Bank, an NGO and the leaders in the local community.

Local communities need to have input into the design and implementation of a program. Having people in the local community implement the program helps ensure it is socioculturally appropriate and builds the capacity of the community by training locals to develop the necessary knowledge and skills needed to ensure the program is socially and economically sustainable once outside assistance finishes. In this way, available resources are used efficiently (see **FIGURE 13.4**).

Stakeholders people, groups and organisations who are involved in, or affected by, a course of action

FIGURE 13.4 Partnerships and collaboration are important for the design and implementation of an effective program. It requires a range of stakeholders working together and combining their expertise to make efficient use of resources. This ensures economic and social sustainability.



Focused on results

Making a difference and having a lasting impact on reducing poverty and inequality and promoting health and wellbeing and human development should be the main purpose for implementing an aid program. A program should be focused on addressing patterns of disease and illness within a country or individual community. In the past, aid has been criticised as being ‘tied’ aid. This means that aid given must be spent on goods or services provided by the donor country. This reduces the effectiveness of aid and does not always meet the needs of the recipient country or reach those who most need it. It can also impact a country’s ability to become self-sufficient as its people are not building up their own resources.

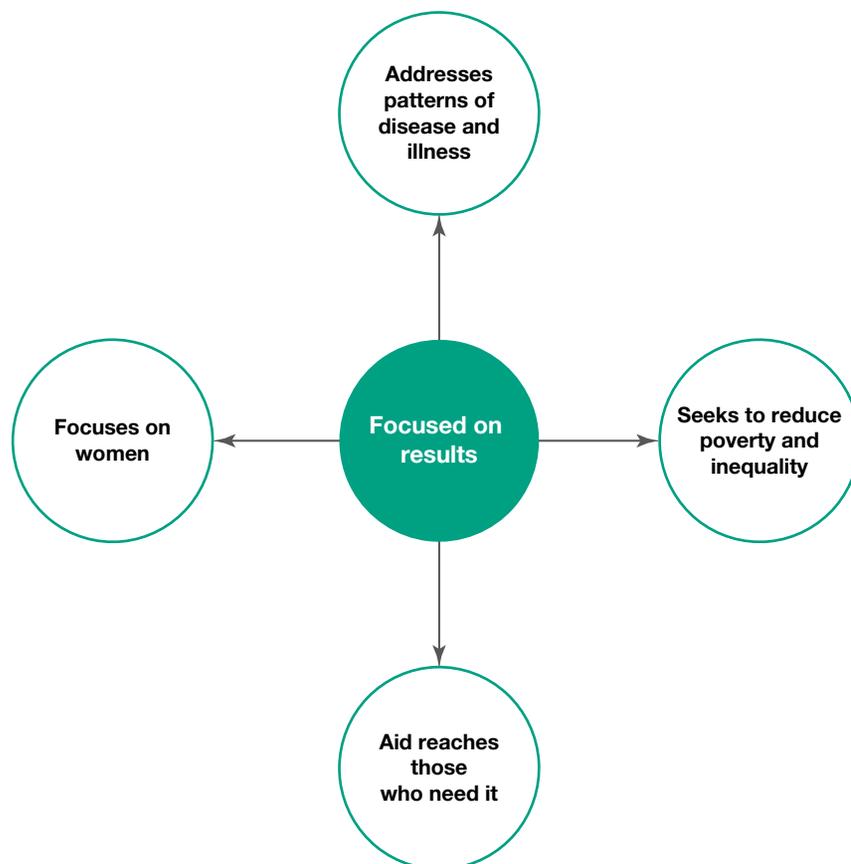
When aid workers leave the community in which they are working, an effective aid program should continue to have a positive impact and is therefore sustainable. One way to do this is to focus on involving and educating women. Gender inequality continues to be an issue for many low- and middle-income countries, with women often having low social status, low levels of education, less access to health services and less opportunity for well-paid employment.

Women are responsible for most of the agricultural and domestic work, including the care of children. When women are educated and empowered, they are better able to care for their children, secure well-paid employment or set up a business that provides a regular income. This helps reduce the level of poverty and improves the health and wellbeing of all community members.

FIGURE 13.5 Women are responsible for most of the agricultural and domestic work, including the care of children. Programs that focus on women are more likely to be effective in improving health and wellbeing outcomes.



FIGURE 13.6 An effective aid program is results-focused. It works to address the patterns of disease and illness and reducing poverty and inequality.



Focused on results also means that changes in the patterns of disease, levels of poverty and other relevant health and wellbeing indicators can be monitored to ensure the program is having the intended effects of improving health and wellbeing and resources are being used effectively.

Transparency and accountability

Transparency means that all necessary information is made available to those involved in developing and implementing a program. Transparency and openness ensures that funding that has been provided to implement a program is used for its intended purpose and is not diverted to serve the needs of other stakeholders. For example, funding provided to the government of a recipient country to run an agricultural program for women is instead used by the government to provide luxury items to government officials. Transparency also ensures that funding is not used for commercial gain. An example of this could be a pharmaceutical company provides funding for a program but requires the country to buy its drugs, which are much more expensive than other brands. Accountability involves regular monitoring and assessment of progress against the aims and objectives of the program, which is then published and available to the national and international community (see **FIGURE 13.7**).

FIGURE 13.7 An effective program is one that is implemented in a clear and open way, with its goals, objectives and funding made known to the community. Ongoing monitoring of progress against the program's objectives is an important element of accountability.

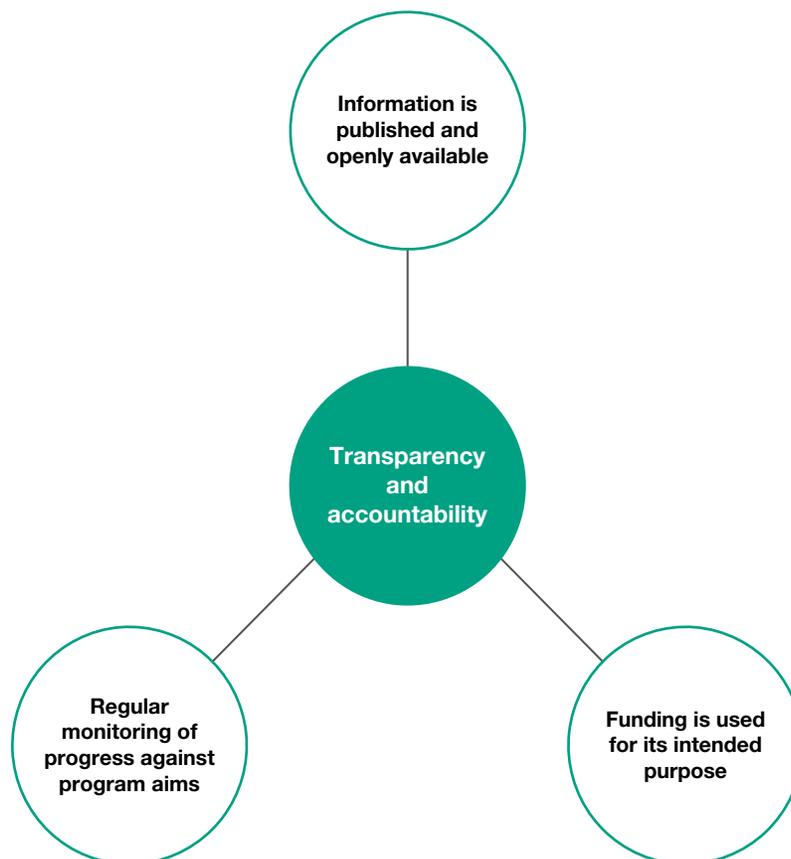
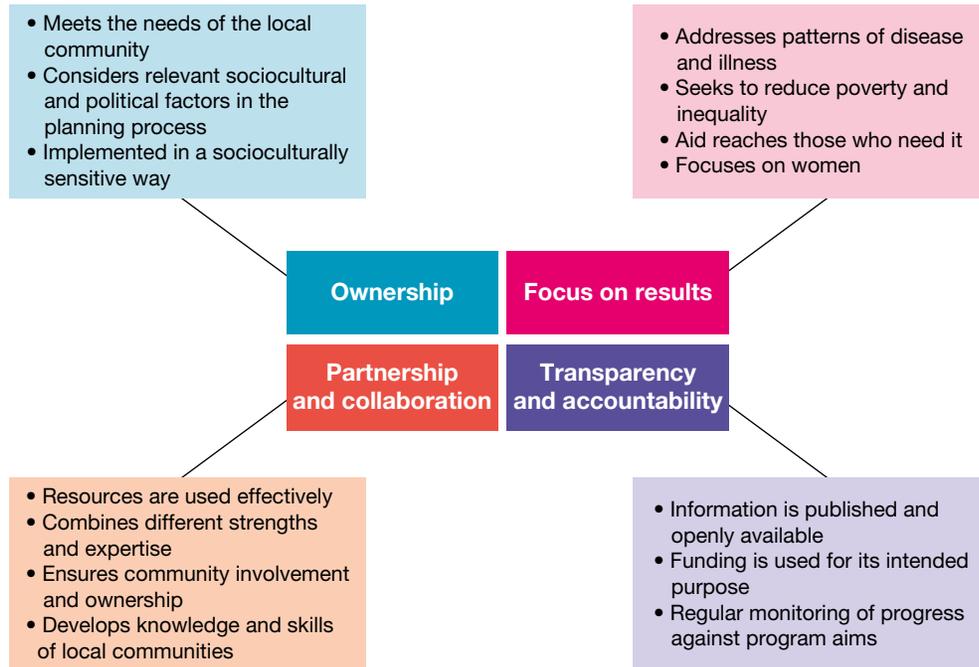


FIGURE 13.8 Summary of the key features of effective aid programs



Programs to address the SDGs

There are many programs that have been implemented in low- and middle-income countries to help achieve the Sustainable Development Goals (SDGs). Students are required to select one aid program for a detailed study and analyse and evaluate the effectiveness of the program by taking into account:

- its purpose
- the SDG/s being addressed
- details of its implementation, particularly in relation to the features of effective aid and relevant partnerships in place
- how the program will promote health and wellbeing and human development.

This topic will provide students with a range of programs that have been implemented to address each of the Sustainable Development Goals. Through the exploration of a program, you will also build your understanding of the relationships between the SDGs and how collaboration is necessary to achieve health related goals that you were introduced to in topic 11.

13.2 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

13.2 Quick quiz **on**

13.2 Exercise

13.2 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 5

■ LEVEL 2

4, 6, 7

■ LEVEL 3

8, 9, 10, 11

Test your knowledge

- What are the outcomes of effective aid?
- Why was a set of shared principles developed to reflect the essential features of effective aid programs?

3. List the four features of effective aid programs.
4. Why is it important to consider the sociocultural and political aspects of a community when implementing an aid program?
5. Provide one example that helps ensure a program is delivered in a socioculturally sensitive way.
6. Who might be involved in a partnership when implementing an effective aid program?

Apply your knowledge

7. What is meant by 'tied aid' and how does this impact on the effectiveness of an aid program?
8. 'How aid is delivered to low- and middle-income countries is just as important as why it is given'. Explain what this means.
9. Why is it important to focus on women if an aid program is to be effective?
10. Explain why transparency and accountability is important if an aid program is to be effective.
11. Use visual symbols or a concept map to summarise each of the features of effective aid.

13.2 Quick quiz



13.2 Exercise

13.2 Exam questions

Question 1 (4 marks)

Identify two key features of effective aid programs and briefly describe each.

Question 2 (4 marks)

In Kenya's Nyanza province, a safe water and hygiene program supplied 45 public primary schools with clay pots for safe water storage. The schools were also provided with a year's supply of water disinfectant, 200-litre plastic water tanks with taps for hand-washing, and soap. Two teachers from each school received educational materials on water treatment, safe storage and good hand-washing practices for use in the classroom. They formed safe water clubs with students, who were encouraged to share the information with their parents. An evaluation of the program in nine schools found that student hand-washing in Grades 4–8 improved and increased. Absenteeism declined by 35 per cent, while absences in neighbouring schools without the intervention increased by 5 per cent. Effects in the surrounding community included: household soap ownership increased from 74 per cent to 90 per cent, and 25 per cent of parents and guardians reported changing their hand-washing behaviour because of what they learned from their child. In addition, parents of children in the safe water clubs were almost twice as likely to report using the water treatment than parents whose child was not a club member.

Identify two key features of an effective aid program and outline how each is evident in the safe water and hygiene program.

Question 3 (1 mark)

One of the key features of effective aid programs is 'ownership'. Give an example of this key feature.

Question 4 (1 mark)

Other than ownership, provide one other key feature of an effective aid program and **explain** why it is important.

Question 5 (6 marks)

Helping Women Access Savings and Loans, Vietnam project

Communities in rural Vietnam rely on their crops to feed their families and to earn income. Changing weather patterns and traditional farming methods used in these villages mean farmers are not as productive as they could be. The Helping Women Access Savings and Loans, Vietnam project, supported 1125 women from the poorest communities in rural Vietnam to access loans to establish businesses in agriculture. Women also received training to manage their loans and income, and training in farming practices and climate change to help them become more productive. To help women grow more food, raise more livestock and adapt to climate change, 22 training sessions and village meetings were held using role play, games and story-telling to overcome different ethnic minority group language barriers. Women say their livestock yields are higher, at rates of up to 75 per cent. Women who grow rice are producing larger and better quality crops. This means women are able to save more money; most are saving up to US\$20 per month. With more food and money available, women can pay for their children's school fees and provide healthier meals for their families.

Identify two key features of an effective aid program and explain how each is evident in the Helping Women Access Savings and Loans, Vietnam project.

More exam questions are available in your learnON title.

13.3 Programs to address the SDGs including SDG 1 No poverty

KEY CONCEPT Aid programs implemented to end poverty

13.3.1 The Nuton Jibon Livelihood Improvement Program in Bangladesh

Background and purpose

Poverty is an ongoing problem in Bangladesh, where about 47 million people still live in poverty and 26 million people in extreme poverty. Floods and cyclones frequently cause severe damage to lives and livelihoods, especially to poor women, who remain particularly vulnerable. The Empowerment and Livelihood Improvement Project, known as the Nuton Jibon project, aims to improve the livelihoods and quality of life of the rural poor, especially the poorest and most vulnerable households. Rural poverty continues to be significantly higher and more extreme than urban poverty. While there has been a decline of extreme poverty in rural areas, the poverty level remains almost three times that of urban areas. The poorest in the poorest regions are also less able to cope with shocks such as natural disasters.

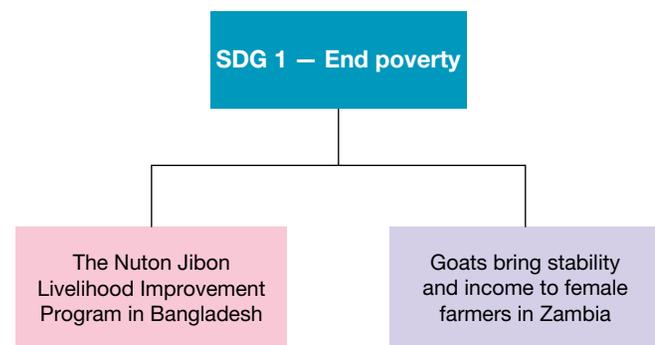
The Nuton Jibon Livelihood Improvement Program (NJLIP) provides financial support to 2500 villages covering 12 districts in Bangladesh by providing community financing for livelihood support, community infrastructure, and skills development training for youth. The program is funded by the World Bank, and, in partnership with the Bangladeshi government and Social Development Foundation, the purpose of the program is to:

- empower the rural poor, with a focus on women
- improve the living conditions of the poor by increasing the income they receive from their produce
- develop skills and generate employment opportunities for unemployed youth in poor households
- provide grants directly to the community
- build links with financial institutions
- provide support to the village organisations
- prevent malnutrition by providing nutrition information and agricultural knowledge.

Implementation

The Social Development Foundation is an organisation established by the government of Bangladesh to help those living in poverty to develop their skills and talents and overcome the barriers they face due to poverty. By helping people escape from poverty they can enjoy healthy lives, live in dignity and participate in their community. The program focuses on women as they are more likely to act collectively and repay loans, and the income increase controlled by women is more likely to benefit the entire household and community.

FIGURE 13.9 Programs included under SDG 1



If focusing on SDG 1 students can explore any one of the programs implemented.

The program has several major components:

- in selected rural areas, to help build and strengthen existing communities and institutions to help the poor
- providing funding to support small infrastructure and livelihood projects
- providing education about nutrition and agricultural production
- building business opportunities and capacities by helping people organise producer groups and **cooperatives**, and by building their business and marketing knowledge as well as links to existing markets
- ensure ongoing monitoring of the progress and impact of the program. Monitoring and reporting was undertaken each month and included summaries of key lessons learned, case studies and follow-up status.

Members of the SDF worked alongside community members, particularly women, to teach them the skills needed to manage their finances and develop business skills that would enable them to escape from poverty. Women could receive small grants that would be used to set up income-generating activities. These activities provided an income that could then be used to apply for a loan to expand their business and to form cooperatives with other community members. This provided greater efficiency and facilitated access to broader markets, and enabled all members to generate further income. These cooperatives were set up and run by the community for the community.

In addition, the program provided women with education about nutrition and agricultural practices. Unemployed youth were also provided with skills training to match the job opportunities being created within the communities, resulting in secure and sustainable employment.

Outcomes

The NJLIP is expected to benefit around 500 000 poor households, reaching about 2.25 million people. The outcomes are:

- About 40 per cent of households have been able to increase income by at least 30 per cent.
- One million poor people have benefited from the program. Ninety-five per cent of the project beneficiaries are women, who occupy most decision-making positions in village institutions. Through participation in the project, women are increasingly becoming decision makers in their households. This has led to an increase in confidence, access to finance and savings among women. Women report that they are more respected by their families and communities, have a larger role in household decision-making, and even face less domestic violence.
- By 2021, 80 per cent of those benefiting from the program will have an increase of at least 10 per cent in their investment return.
- About 25 000 youth have been employed.
- Achievements in income appear to have affected food security and quality of diet. Participants claim that they are eating more, no longer going hungry, and having three meals per day. Almost 100 per cent of the families are using sanitary latrines because their economic condition has improved and their consciousness and awareness has increased.

One of the beneficiaries of the program is Halima. When Halima's husband died, she was left to raise her three daughters in a crumbling, leaky house on a small plot of land. Halima worked hard to produce a meagre **subsistence**. When all three daughters married, Halima was alone, helpless and reduced to begging from door to door. Halima then discovered the Nuton Jibon Livelihood Improvement Program, which provided her with a one-time grant of 5000 taka (the local currency). The money allowed her to buy a few goats and chickens, and she was soon selling eggs and the goats, growing her income to about 50 000 taka from the goats and 3000 taka per month from her egg production. Her steady income meant she could receive a small loan from a village credit organisation. She invested her money in a nearby grocery shop, providing her with a regular income.

Cooperatives people who come together to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled business

Subsistence self-sufficient farming carried out by individuals to provide food for themselves and their family

Like Halima, Sheuli Begum and her husband, Anis Forayezi, struggled to farm a plot of land too small to feed their family of five. They did not have a house to live in, could not afford healthcare and had to remove their children from school to help supplement the family's income. Sheuli then became a member of a local NJLIP group and started depositing small amounts of savings to receive a loan from the village credit organisation. She was then able to buy a dairy cow and sold four to five litres of milk each day, earning about 4500 taka each month. She eventually saved enough to buy more cows, began sending her children to school and leased an acre of farmland for her husband to cultivate.

FIGURE 13.10 The Nuton Jibon Livelihood Improvement Program provides loans to women to buy goats to farm.



13.3.2 How the program promotes health and wellbeing and human development

The NJLIP is providing financial support and working to increase the income that women receive as well as developing skills and generating employment for youth in poor households. In doing so the program is focused on ending poverty. This will promote health and wellbeing and human development. Poverty is a major contributor to high rates of death and illness from infectious diseases and a major cause of hunger and malnutrition. This program will reduce the burden associated with diseases such as pneumonia, diarrhoea, malaria and measles. With a regular income beneficiaries of the program can afford healthcare, which improves physical health and wellbeing as diseases and illness can be diagnosed and treated.

FIGURE 13.11 When women are empowered they have greater opportunities to participate in the political and community life of their country, which promotes human development.



Access to healthcare also increases levels of vaccination — further reducing deaths and disability from vaccine-preventable diseases and improving physical health and wellbeing.

The program also seeks to prevent malnutrition by providing nutrition information and agricultural knowledge. The program has reported that families now have access to food security and are eating three meals each day. Preventing malnutrition would result in a reduction in diseases associated with micronutrient deficiencies, such as iron-deficiency anaemia, congenital abnormalities and cretinism from iodine deficiency and blindness caused by deficiencies in vitamin A. This improves physical health

and wellbeing, which helps bring about improved social, mental and emotional health and wellbeing. Improved physical health and wellbeing provides opportunities to attend school, go to work and form relationships with others, promoting social health and wellbeing. Positive self-esteem and a sense of achievement is attained, which contributes to improved mental health and wellbeing. The focus on empowerment of the rural poor, particularly women, promotes mental health and wellbeing and contributes to resilience, which increases the level of emotional health and wellbeing. A reduction in domestic violence also promotes physical health and wellbeing. Women have reported enjoying greater status within their family and community, which increases relationships and communication skills, promoting social health and wellbeing. Having greater status in the family can contribute to positive self-esteem and confidence and greater resilience, which promotes mental and emotional health and wellbeing.

This program also promotes human development. A regular income, educational opportunities, work prospects and the empowerment of women will contribute to all people in the village being able to enjoy a decent standard of living and a long and healthy life. This program will help provide the conditions to promote human development, including gender equality, human rights and the opportunity to develop knowledge and develop to their full potential. With gender equality and the empowerment of women comes greater opportunities for women to participate in the political and community life of their village and have greater control over the decisions that affect their lives.

EXAM TIP

When discussing how a program promotes health and wellbeing, make sure you give specific examples from the program and link these to the key characteristics of the dimensions of health and wellbeing. When discussing how a program promotes human development, make sure you provide specific examples from the program that you can link to key words and phrases in the human development definition.

CASE STUDY

Goats bring stability and income to female farmers in Zambia

Sylvia Chiinda used to live on the edge of desperation. Her husband died a few years ago, leaving her with no savings or possessions. It was a crushing blow for the mother of seven.

To make matters worse Zambia has seen a rise in more frequent and intense floods, recurrent droughts and other climate risks that have reduced yields for farmers like Sylvia, putting lives and livelihoods in the crosshairs. With her maize and groundnut farm production dwindling, Sylvia was forced to find an alternative income to keep her family afloat.

Income — just US\$15 in a good month — is barely enough to meet the necessities for her and her seven children. ‘I can’t give up. I need an income because I have many children and it’s my responsibility to provide for them,’ she said.

In the face of rising climate risks and unprecedented adversity, the single mother and breadwinner became determined to change her situation. Many rural families cannot obtain loans from mainstream banks to cope with the effects of weather extremes. They are poor, and viewed as high risk, compounding the challenges they face.

For women, the first hurdle to setting up a business is affordable credit. Getting a loan from a commercial bank is a nightmare of form-filling and intrusive questioning. The absence of a commercial bank in their villages adds to their woes. ‘Banks in the city won’t lend us money because we have no land title to put up as collateral,’ Sylvia says.

Women such as Sylvia are among the most vulnerable in Zambia’s traditional communities, where age-old customs dictate a woman’s life. This vulnerability is compounded by the ravages of climate change. As part of wider government efforts, a UN coalition mobilized by UNDP, involving the Food and Agriculture Organization and the World Food Programme, together with the Ministry of Agriculture and Zambia Meteorological Department is

helping climate-stressed small-scale farmers such as Sylvia to tap into a booming and drought-resistant source of income — goat rearing.

The project was made possible with initial funding of US\$32 million from GCF (Global Climate Fund) — the world's largest dedicated climate fund. It aims to bring new economic and social opportunities to Zambian women.

'This aligns with GCF's emphasis on inclusive climate action, so that all our US\$7.3 billion of projects committed so far to developing countries promote gender equality and women's empowerment,' says Green Climate Fund's Gender and Social Specialist Seblewongel Negussie.

'Climate change is one of the major factors and challenges contributing to low productivity of farmers, especially at small scale level. As government, we are therefore pleased that our partnership with UNDP and GCF, under the SCRALA project, is supporting farmers, especially women, with opportunities and sustainable lifelong solutions to help boost productivity and adaptation to climate change effects,' says Ministry of Agriculture Permanent Secretary, Songowayo Zyambo.

Sylvia is among more than 8000 farmers, mostly women, who were trained in goat rearing and animal husbandry. Each farmer received five goats to begin with and they were given the tools and training to prevent disease, build sheds, and tackle breeding management. A year later, Sylvia has had 30 goats, including additional goats she bought using proceeds from the sale of manure. To build a steady income, she sold 10 of the goats. Five kids were passed on to other women so they could embark on the same journey to financial stability. This approach capitalizes on initial handouts while promoting community spirit. It has raised income levels of farmers in the 16 districts where the project works. The US\$238 Sylvia made from the sale was spent on essential items, including school fees for her children, and fertilizer.

Mpeza Phiri, a single mother of six living in the Luamba Agriculture Camp in eastern Zambia, says her family has a steady income for the first time. They own 10 goats. Now when crisis hits, farmers like Mpeza and Sylvia have greater equity. And equity means resilience.

Not only do the women sell goats to put food on their table, but they are also able to use the goat manure as fertilizer in their gardens. This is allowing them to grow vitamin-rich vegetables in abundance, provide their children with healthier meals and valuable sources of protein from the goat meat and milk, and improve climate-resilience, nature-friendly farming practices.

Charity Lungu, a mother of four who lives in the same camp as Mpeza, has been able to support her family of 10 by selling some goats. Her children used go to school hungry. The income has allowed her to buy them food, uniforms, and books.

'They are now able to focus on school, not on hunger,' she says, as she tends to the bleating goats in her backyard.

'I am not worried any more about my children going hungry or falling ill. I can always sell a goat if we have needs,' says Anna Mumba, who lives in Sipopa Village in Luangwa District. The people of the village have suffered from recurring drought and dismal harvests in recent years.

Source: Adapted from: <https://undp.medium.com/goats-bring-stability-and-income-to-female-farmers-in-zambia-981c80a6a025>

CASE STUDY REVIEW

1. Identify the SDGs being addressed in this program.
2. Describe what is being implemented in this example.
3. Why was this initiative introduced?
4. Use the features of effective aid to analyse if this program would be considered an effective aid program.
5. Explain how this program might promote health and wellbeing and human development.

13.3 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

13.3 Quick quiz



13.3 Exercise

13.3 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8, 9

Use the information in this section about the Nuton Jibon Livelihood Improvement Program in Bangladesh to answer the following questions.

Test your knowledge

1. Apart from SDG 1, what other SDGs may be achieved with this program?
2. Who were the target groups for this program?
3. Explain the purpose of the program.
4. What partnerships were involved in the program?
5. Describe how the program was implemented.

Apply your knowledge

6. Explain how this program would help end poverty.
7. Use the four features of effective aid to evaluate the success of this program.
8. Explain how the program would promote each of the dimensions of health and wellbeing.
9. Discuss how the program would promote human development.

13.3 Quick quiz



13.3 Exercise

13.3 Exam questions

This case study relates to exam questions 1, 2, 3, 4 and 5.

Helping Women Access Savings and Loans, Vietnam project

Communities in rural Vietnam rely on their crops to feed their families and to earn income. Changing weather patterns and traditional farming methods used in these villages mean farmers are not as productive as they could be. The Helping Women Access Savings and Loans, Vietnam project, supported 1125 women from the poorest communities in rural Vietnam to access loans to establish businesses in agriculture. Women also received training to manage their loans and income, and training in farming practices and climate change to help them become more productive. To help women grow more food, raise more livestock and adapt to climate change, 22 training sessions and village meetings were held using role play, games and story-telling to overcome different ethnic minority group language barriers. Since receiving loans and participating in training, six women are buying drought-resistant seeds and applying modern agricultural and livestock practices. Women say their livestock yields are higher, at rates of up to 75 per cent. Women who grow rice are producing larger and better quality crops. This means women are able to save more money; most are saving up to US\$20 per month. With more food and money available, women can pay for their children's school fees and provide healthier meals for their families.

Question 1 (2 marks)

Identify two Sustainable Development Goals that are reflected in the above project.

Question 2 (4 marks)

Identify two examples of effective aid that are reflected in the case study and **explain** why these are important.

Question 3 (2 marks)

Describe how the program was implemented.

Question 4 (2 marks)

Explain how this program would help end poverty.

Question 5 (3 marks)

Explain how the Helping Women Access Savings and Loans, Vietnam project promotes health and wellbeing and human development.

More exam questions are available in your learnON title.

13.4 Aid programs addressing SDG 2 Zero hunger

KEY CONCEPT Aid programs implemented to achieve zero hunger

13.4.1 Agricultural Productivity and Food Security Program in Burkina Faso

Background and purpose

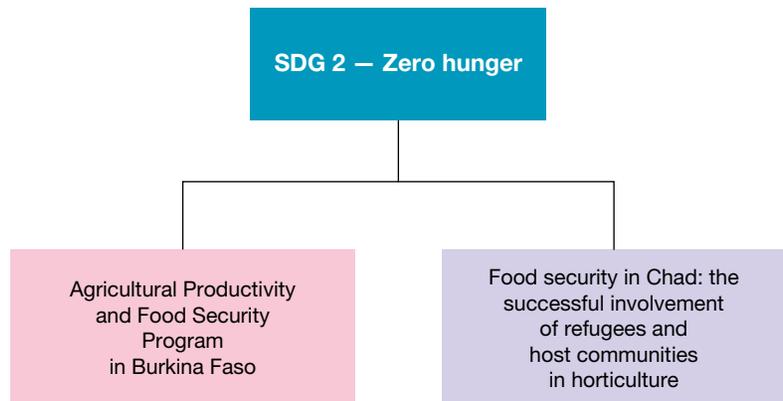
Burkina Faso is a landlocked state in western Africa. Rainfall is inconsistent and a great deal of the land has been affected by deforestation, degradation and desertification. The agricultural sector accounts for approximately one-third of the country's income and 80 per cent of the population's employment. However, it is generally characterised by low crop and livestock productivity and mainly supports small family farms or **subsistence** livelihoods. While the threat of recurring famine has been reduced, food security is an ongoing challenge.

More than 3.5 million people, or around 20 per cent of the population, lack food security and 20.7 per cent of the population are undernourished. Food security varies greatly each year, as large annual fluctuations in rainfall leads to changing levels of cereal production. Burkina Faso also imports a great deal of its food, and its food security has been greatly affected by an increase in food prices worldwide.

A drought in 2011 severely affected crop yields and left minimal food for people living in villages and their animals. An influx of refugees from Mali (a neighbouring country) due to conflict put further strain on food supplies. Many people within Burkina Faso have had to rely on food aid provided by other countries. Weak food production systems, an unpredictable climate, and extreme poverty has created a vicious cycle for farmers and has contributed to the country's lack of food security.

To increase food security, the Agricultural Productivity and Food Security Program funded by the World Bank was introduced in Burkina Faso to help farmers increase food production. The purpose of the program was to improve producers' capacity to increase the production and to ensure year-round availability of cereals and livestock products in rural areas.

FIGURE 13.12 Programs included under SDG 2



If focusing on SDG 2 students can explore any one of the programs implemented.

Subsistence self-sufficient farming carried out by individuals to provide food for themselves and their family

FIGURE 13.13 Burkina Faso is a land-locked county in Central West Africa.



Implementation

The program incorporates a range of actions to achieve its purpose. These include the following:

- *Improvement in food production and accessibility:* funding is provided to enable access to improved technology for food crop production, including improved seeds, fertiliser, manure and sustainable soil management technologies.
- *Post-harvest loss reduction:* access to improved storage technologies is provided to reduce the losses that occur once crops have been harvested.
- *Agricultural market coordination:* improvements are made to the existing agricultural information systems so farmers are able to make better production and marketing decisions and develop marketing cooperatives to provide them with access to credit.
- *Management and monitoring and evaluation of project activities:* funding was provided for the equipment, technical assistance and training required for program implementation and monitoring and evaluation to ensure the program was meeting its purpose.

FIGURE 13.14 Programs such as the Agricultural Productivity and Food Security Program in Burkina Faso are providing access to technology for food production such as improved seeds.



Male and female farmers are given the opportunity to undertake community work, such as clearing and preparing lowland areas for rice farming. They work to clear the land of rocks, turn over the soil,

organise the plots and construct water retention systems. The work is overseen and supervised by the regional Chamber of Agriculture, local community leaders and local authorities. Those who have contributed the most to these community works are provided with cleared plots of land, technical expertise, training, improved seed varieties and fertiliser for their rice crops. Female farmers have contributed the most to the program and more than 45 per cent of the prepared lowlands have now been distributed to women.

Outcomes

For the women who have been involved in the program, it has changed their lives significantly. According to one female farmer, ‘It is difficult for women to possess land... now I have my own plot of land from which I produced four bags of rice. I distributed one to my neighbours, I sold the second to pay school fees, and the other two are to feed my family.’

The program has been successful in gradually increasing productivity; 7820 hectares of land has been cleared for rice production. This provides income for 30 000 producers, of which 45 per cent are women. It also increased the overall rice production of the country — Burkina Faso saw an increase of 15 000 tonnes of rice in 2014. Higher production is achieved by teaching farmers new techniques such as how to keep water in the fields and the best way to fertilise them.

The program has also provided an opportunity for small rural farmers to be able to access credit from financial institutions, such as banks, which are usually reluctant to finance small farmholders. Through the program, a warehouse receipt system has been put in place that allows farmers to use their harvests as **collateral** to obtain credit. A farmer will take their harvest to a local warehouse, whose access is held jointly by a microfinance institution and a farmer’s association, usually in the form of two padlocks. Upon delivery of the harvest, the farmer receives credit that he or she uses to buy essential inputs for the next planting season, pay children’s school fees, or invest in other income-generating activities.

The credit advance allows farmers to get a higher price for their produce by waiting a few months until food stocks run low and prices rise. Once the harvest is sold, the credit amount can be paid back and supplies such as seeds and fertiliser can be bought for the next year, which will improve their production.

FIGURE 13.15 Male and female farmers are given the opportunity to undertake community work such as clearing and preparing lowland areas for rice farming.



FIGURE 13.16 Being able to own a plot of land means women can farm the land, sell their produce and earn money to send their children to school.



Collateral a security that is provided to guarantee the repayment of a loan

13.4.2 How the program promotes health and wellbeing and human development

The Agricultural and Food Security Program aims to reduce hunger and achieve food security in Burkina Faso. Having access to sufficient food is important for health and wellbeing. Food is required for the functioning of the human body; it provides the energy needed for individuals to complete daily tasks and reduces the risk of malnutrition. Some of the nutrients in food are important for increasing immunity to disease; therefore, food security improves physical health and wellbeing by reducing the risk of illness and disease.

Improved nutrition would see a reduction in the burden of disease associated with micronutrient deficiencies, such as iron-deficiency anaemia, congenital abnormalities and cretinism from iodine deficiency, and blindness due to deficiencies of vitamin A. Given the impact of iron-deficiency anaemia on pregnant women, this would help reduce maternal mortality rates. Well-nourished mothers are more likely to give birth to healthy babies. Babies who are well fed and adequately nourished have strong immune systems. They are less likely to suffer from diseases such as pneumonia, measles, malaria and diarrhoea. If they do contract these diseases, well-nourished children are more likely to recover. Children's growth would no longer be stunted due to malnutrition and hunger.

When people have access to the required quantity and quality of food, they can attend school or work. This promotes social health and wellbeing, providing opportunities to develop relationships. Emotional health and wellbeing can also be promoted because people have a sense of pride and achievement. Through this project, women can own land, which contributes to spiritual health and wellbeing. Due to the project, the women feel they are contributing to their community, which brings a sense of connectedness.

When children have the energy to attend school, it increases their literacy and numeracy skills. Educated people have increased opportunities to earn a higher income and have greater access to resources required to promote physical health and wellbeing, such as access to fresh food, healthcare and water, clothing and shelter.

The project would also promote human development. Improved health and wellbeing has a positive impact on human development. The women in the project have become empowered. This means they are more likely to lead productive, creative lives in accordance with their needs and interests. With greater empowerment, they are more likely to become involved in the lives of their communities. The Gross National Income (GNI) of a country is linked to food security. Burkina Faso is more likely to have a higher GNI if communities have food to eat and adults can work. By generating an income, adults can pay taxes, which can be used by the government to invest in infrastructure that promotes health and wellbeing such as roads, water systems and healthcare.

FIGURE 13.17 Women carry sacks of rice from a warehouse at a women's group processing centre in Sourou Province, Burkina Faso.



FIGURE 13.18 When women receive an income, they can access resources that promote physical health and wellbeing such as nutritious foods.



This project works to achieve gender equality by allowing women to own their own plot of land. This creates the conditions for human development. With equal rights, women have access to education, finance, control over other forms of property and greater security, all of which contributes to improved human development.

CASE STUDY

Food security in Chad: the successful involvement of refugees and host communities in horticulture

At the northern entrance of the town of Gore abundant crops including cabbage, carrots, cassava, okra and other vegetables are now grown on large market garden plots. The town sits in the southernmost part of Chad, near the border with the Central African Republic, and this program gives fruit and vegetable seeds to refugees and returnees to grow, sharing the land with locals.

For many refugees, growing and producing food does not come naturally. Emma Koningar, coordinator of the agriculture section of the Emergency Food and Livestock Crisis Response Project (PURCAE), explained that ‘our biggest challenge has been to convince the refugees and returnees, the majority of whom were initially traders, to grow and produce their own food so that they will not always depend on food aid.’ Getting enough food to eat is a central concern of the 70 000 people who live in the Gore region refugee camp.

After a few hours of training in market gardening, refugee Malopi Decladore said, ‘Market gardening is simpler than agriculture and requires less space.’ This gives refugees the two-fold advantage of using less land and providing greater yield than large-scale agriculture. Locals, seeing the success of the project, have also turned their focus to smaller scale horticulture, which is less vulnerable to floods and droughts, rather than seeking large land plots. Impressive results have been seen.

The project provided:

- 16 tons of fruit and vegetable seeds
- 53 650 agricultural tools
- 29 664 tons of fruits and vegetables.

Additionally, from 255 tons of rice seeds, 2625 metric tons of rice were produced, and 14 166 metric tons of cassava from 6 250 000 cassava cuttings.

This abundance of locally grown food is in stark contrast to the traditionally lean period in rural Chad that occurs between June and September. Due to a lack of food reserves, many families go hungry at this time of year, which particularly impacts children. Molengar Ngoundo, a consultant for the Food and Agriculture Organization (FAO) of the United Nations, emphasises that ‘in the past, people had virtually nothing to eat between July and August. Now their garden plots are not only providing them with food year-round but also with money from the sale of their produce.’

The region has been under increased food stress in recent years due to a high number of refugees arriving. The self-sufficiency promoted in the market garden program highlights the transition from a humanitarian approach to a second phase of additional funding that focuses on building resilience and development.

Local resident Eveline Goidje feels the difference, saying, ‘There is no longer a rush in Gore to stock up on grain during the lean period. We have an abundant supply of market garden produce year-round at affordable prices.’ The market gardeners keep the town’s market supplied with regular tomatoes, cabbage and maize, and with increased supply also comes more affordable prices.

Germaine Memadji, a coordinator at the FAO office in Gore for three years, said that ‘because of the availability of these fruit and vegetable seeds, the prices of certain food items, which were high during the lean period, are now tumbling. The price of a sack of sorghum was usually between CFAF 14 500 and CFAF 15 000 (roughly \$25). With the current competition from market garden produce, the price is now CFAF 9000 (approximately \$15).’

The program involves many groups. It was implemented by the government of Chad with \$16 million in financing from the International Development Association (IDA). The IDA is the World Bank institution that helps the poorest countries in the world. Technical assistance is also given by the FAO, the United Nations Children’s Fund (UNICEF) and the International Organization for Migration (IOM). The benefits are wide: 78 221 local households, refugees and returnees (approximately 469 326 persons) have benefited. ▶

There is still more work to be done however. Francois Nankobogo, World Bank Country Manager for Chad, notes that, 'Overall, the results of this project have been very encouraging but are still tenuous. For this reason, we are now financing an additional project (\$60 million) – the Refugees and Host Communities Support Project (PARCA). Its implementation is just beginning, and it is expected to facilitate strengthening of the gains made while expanding access to basic social services.'

Source: Adapted from: 'Food Security in Chad: the Successful Involvement of Refugees and Host Communities in Horticulture', 17.12.2019, The World Bank, https://www.worldbank.org/en/news/feature/2019/12/17/food-security-in-chad-the-successful-involvement-of-refugees-and-host-communities-in-horticulture?cid=ECR_TT_worldbank_EN_EXT_ChangingLives

CASE STUDY REVIEW

1. In addition to SDG 2, identify other SDGs addressed in this program.
2. Why was the program implemented?
3. Describe the program being implemented.
4. How does this program assist in achieving SDG 2?
5. Explain how the program could improve health and wellbeing and human development.
6. Discuss whether this program represents effective aid.

13.4 Exercises

learn **on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

13.4 Quick quiz **on**

13.4 Exercise

13.4 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8, 9

Use the information in this section about the Agricultural Productivity and Food Security Program in Burkina Faso to answer the following questions.

Test your knowledge

1. Apart from SDG 2, what other SDGs may be achieved with this program?
2. Who were the target groups for this program?
3. Explain the purpose of the program.
4. What partnerships were involved in the program?
5. Describe how the program was implemented.

Apply your knowledge

6. Explain how this program would help to achieve zero hunger.
7. Use the four features of effective aid to evaluate the success of this program.
8. Explain how the program would promote health and wellbeing.
9. Discuss how the program would promote human development.

This case study relates to exam questions 1, 2, 3 and 4.

In 2016, Oxfam implemented its Scaling Up Nutrition program in four rural districts of Malawi that have been feeling the effects of climate change. Flooding in 2015 and a drought in 2016 wiped out crops, leaving communities without enough food.

Half of all pregnant women and 29 per cent of nursing mothers in Malawi are anaemic. The Scaling Up Nutrition program focused on children under five and nursing mums in an attempt to diversify and improve household nutrition and critically, reduce the number of deaths of kids under five by as much as 10 per cent.

Oxfam and its partner, the Catholic Development Commission of Malawi (CADECOM), have set up demonstration gardens. In them, women can learn about irrigation using solar-power and techniques to diversify crops. They've also established community groups where mothers teach each other about food hygiene, balanced diets and community health.

The aim of the project is to reach 26 000 households, meaning approximately 143 000 people: 16 000 households with children under age five, and 10 000 with breastfeeding and pregnant mothers.

Source: Adapted from: <https://www.oxfamamerica.org/explore/stories/peanut-butter-saves-lives/>

Question 1 (1 mark)

Identify the SDGs being addressed in the above program.

Question 2 (1 mark)

What is the purpose of the Scaling Up Nutrition program?

Question 3 (2 marks)

Describe how the Scaling Up Nutrition Program promotes health and wellbeing.

Question 4 (6 marks)

Describe how the Scaling Up Nutrition program reflects three key features of effective aid.

Question 5 (2 marks)

The 'Growing Is Learning' project in Tanzania

Kalista does not have enough food to feed her malnourished children. However, she is one of over a thousand farmers about to participate in CARE's Growing is Learning project. The Growing is Learning project is showing farmers how to grow nutrient rich, sustainable food to better feed themselves and their families. As well as providing seeds and tools, farmers like Kalista, are learning better methods to grow and diversify their crops, improve their family's nutrition and increase their income from accessing new markets.

Source: <https://www.footprintsnetwork.org/project/173/Train-Female-Soy-Farmers-in-Tanzania.aspx>

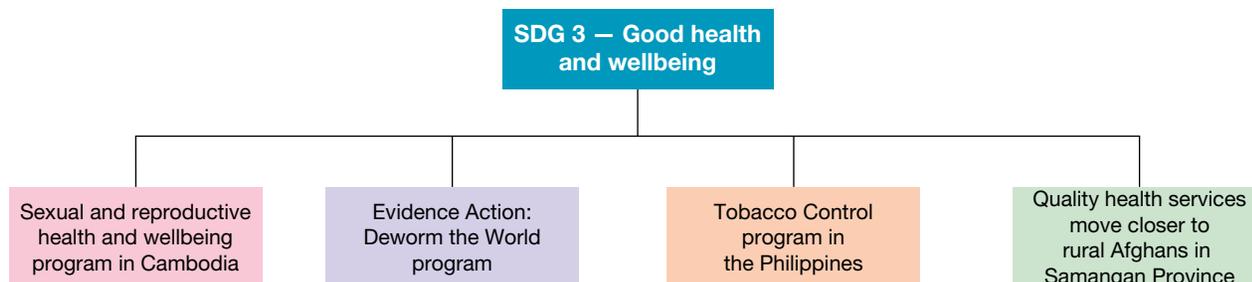
Describe how the 'Growing Is Learning' project promotes human development.

More exam questions are available in your learnON title.

13.5 Aid programs addressing SDG 3 Good health and wellbeing

KEY CONCEPT Aid programs implemented to achieve good health and wellbeing

FIGURE 13.19 Programs included under SDG 3



If focusing on SDG 3 students can explore any one of the programs implemented.

13.5.1 Sexual and reproductive health and wellbeing program in Cambodia

Background and purpose

The purpose of the sexual and reproductive health and wellbeing program implemented in Cambodia was to improve access to sexual and reproductive health and wellbeing information in the most marginalised and isolated communities in the country. Lack of knowledge about sexual and reproductive health and wellbeing is common in remote communities, which leads to poorer maternal health and wellbeing, less use of family planning and higher rates of adolescent pregnancy. Rural women are less likely than urban women to receive information about family planning from the media, and adolescents in rural areas are more likely to become pregnant. Over a quarter of girls aged 15–19 years in Preah Vihear Province in Cambodia are pregnant or have had children.

Implementation

The program was implemented by the United Nations Population Fund (UNFPA) in partnership with UNICEF and the health, education and women’s affairs sectors of the Cambodian government. District leaders are trained to conduct **outreach** information

FIGURE 13.20 Women talk about birth control at a reproductive health clinic in Kampong Cham, Cambodia.



Outreach bringing services or information to people where they live or spend time

sessions on the sensitive topics associated with sexual and reproductive health and wellbeing. Teams of village members and district leaders visit each family and encourage them to participate in the information sessions. They also organise health professionals to speak at the session about issues such as maintaining a healthy pregnancy, the benefits of family planning and the risks associated with early pregnancy.

‘Now I know what kinds of food I should eat and should not eat, and the trainer also told me to visit a health centre for antenatal care at least four times during my pregnancy. I didn’t know this before,’ said Kem Lean, one of the participants in the program. She has also made plans to give birth in a health facility.

Outcomes

Louern, a mother of two, said the family planning information provided by the program was particularly useful. ‘My husband and I used to talk about this. We think two children are enough, but we’re not sure which way is the most suitable and appropriate for us. But now I’ve become more aware of modern contraceptives, their benefits and side effects. When I go back home, I’m going to discuss with him about these possible choices,’ she said.

Promoting sexual and reproductive health and wellbeing information also helps in reducing poverty. When people are better informed, they know how to delay childbirth or stop childbearing.

How the program promotes health and wellbeing and human development

This program helps promote physical health and wellbeing. Accessing antenatal care during pregnancy and giving birth in a health facility will help reduce deaths from complications during pregnancy such as haemorrhage, infection, hypertension and obstructed labour. This also helps reduce **obstetric fistula**, which is a condition that arises due to complications caused by obstructed labour. The condition can lead to the continuous leakage of urine or faeces after childbirth and causes loneliness, shame and often isolation and exclusion from their community. Giving birth in a health facility reduces the risk of obstetric fistula and infection during childbirth due to the hygienic environment. This promotes physical, emotional, mental and spiritual health and wellbeing. Reducing maternal and child deaths also promotes emotional health and wellbeing by removing the grief that is experienced when a mother or baby dies.

With access to contraceptives and family planning services, couples can plan when they have their children, which promotes physical health and wellbeing. Reducing the number of adolescents becoming pregnant also promotes physical and emotional health and wellbeing. Pregnancy during adolescence increases the risk of maternal and child death because the girls’ bodies are still developing, meaning their bodies are less able to cope with the demands of pregnancy and childbirth. Stillbirths and newborn deaths are much more common among adolescent mothers, with the resulting loss and grief affecting emotional health and wellbeing.

Giving birth in a health facility promotes the physical health and wellbeing of newborns by reducing death from asphyxia (lack of breathing) and infection. The program also promotes human development. Having access to contraception means women and families can plan the number and spacing of children. This empowers women and gives them control over decisions that affect their lives. The program also provides couples with knowledge of what is required for a healthy pregnancy. This helps mothers and their children develop to their full potential and enjoy a long and healthy life.

FIGURE 13.21 Access to sexual and reproductive health services reduces maternal and child deaths, and promotes health and wellbeing and human development.



Obstetric fistula a condition that is caused by complications associated with obstructed labour. The tissues between the woman’s vagina and pubic bone are damaged by continuous pressure from the infant’s neck trapped in the birth canal. The damaged tissue later falls off resulting in a hole through which the woman continuously leaks urine or faeces or both.

13.5.2 Evidence Action: Deworm the World program

Background and purpose

While worm infestations are rare in high- and middle-income countries, they remain a serious threat to health in many of the world's poorest countries. These infections, known as soil-transmitted helminths and schistosomiasis, interfere with the body's ability to absorb nutrients and can lead to anaemia, malnutrition and reduced mental and physical health and wellbeing. Children are at greater risk and those affected are often too sick or fatigued to attend school or, if they do attend, have great difficulty concentrating. An infected child is estimated to be 20 per cent less likely to be enrolled in school than a non-infected child and is also 13 per cent less likely to be literate. There are estimated to be 870 million children at risk of parasitic worm infestations worldwide.

Worm infestations also reduce economic development by reducing productivity. Worm infections are easily transmitted in areas with poor sanitation and open defecation. Providing safe and effective drugs can both prevent and treat worm infestations. The World Health Organization recommends one dosage of medication once or twice per year. Large-scale treatment programs in schools are a safe and effective way to achieve this. The purpose of the Deworm the World program is to ensure that all at-risk children have access to medication that prevents and treats worm infestation and enables them to enjoy improved health and wellbeing, increased access to education and better livelihoods.

Implementation

The Deworm the World program is implemented by Evidence Action, an NGO based in the United States. Evidence Action partners with governments of countries where children are most at risk, to support the provision of treatment to children while in schools. Deworming through schools, and in some areas, through preschools, provides the greatest opportunity to reach a high proportion of at-risk children at a minimal cost. Teachers administer the medication to the children and are trained to ensure they understand the purpose of the treatment and correct record keeping and monitoring.

The work that Evidence Action does with governments includes:

- promoting school-based deworming programs
- supporting the establishment of policies and long-term commitment by building capacity, gaining community support and sharing practices to improve cost-effectiveness and results
- working with local partners to determine worm prevalence and intensity
- gathering data to develop a targeted treatment strategy and evaluate the impact of programs once they are in place.

Once the government agrees to implement a deworming program, Evidence Action works with local ministries of education and health to design a program that is jointly owned, is carefully planned and budgeted, and implemented effectively. It also works with communications experts to design locally appropriate awareness campaigns to communicate information about the program to local communities to ensure parents are supportive of the program.

Evidence Action also works with governments to help them obtain the necessary medication through global pharmaceutical donation programs, which helps minimise the costs. Additionally, to measure how effective the program has been in meeting its objectives, Evidence Action designs monitoring systems and independently monitors programs to confirm results and evaluate their impact in lowering the prevalence and intensity of worm infestations.

FIGURE 13.22 Children are given dewormer at the Nyassia primary school in the village of Nyassia, Senegal.



Outcomes

In 2019, the Deworm the World program supported governments to treat more than 280 million children in India, Kenya, Ethiopia, Pakistan and Nigeria. Evidence shows that school-based deworming programs can improve health and wellbeing and education outcomes for children at a cost of less than US\$0.50 per year.

How the program promotes health and wellbeing and human development

Eliminating worm infestations in children improves physical health and wellbeing by reducing the level of sickness and fatigue that occurs when children are infected. This increases the likelihood of children attending school and building relationships with other children and teachers, which increases their social health and wellbeing. When children are healthy and have lots of energy they are happier, which increases emotional health and wellbeing.

The program also promotes human development. Children can attend school and gain knowledge, which increases their opportunity for employment, and to develop the skills needed to eventually run a business. A healthy population means a stronger economy as people can work and earn an income and purchase goods and services. This generates additional income for the country, providing resources for investing in infrastructure, such as roads, water supplies and healthcare. This creates an environment in which people can live to their full potential and enjoy a long and healthy life. When people are healthy, they are more confident and are more likely to participate in political and community life.

FIGURE 13.23 When children are healthy, they can attend school and develop the skills needed to gain employment or start a business, which generates income and helps promote health and wellbeing and human development.



13.5.3 Tobacco Control program in the Philippines

Background and purpose

The Philippines is one of 15 countries worldwide that has a high burden of tobacco-related disease. According to the WHO, 35 per cent of men, 6.4 per cent of women and 20.6 per cent of the Philippines' population overall are daily tobacco smokers. The Philippines made a commitment to the WHO Framework Convention on Tobacco Control in 2005 and since then has been implementing several of the initiatives, known as MPOWER, which is outlined in the Convention. MPOWER is used to refer to the following tobacco cessation measures:

- **M**onitor tobacco use and prevention policies
- **P**rotect people from tobacco smoke
- **O**ffer people help to quit tobacco use
- **W**arn about the dangers of tobacco
- **E**nforce bans on tobacco advertising, promotion and sponsorship
- **R**aise taxes on tobacco.

Through funding provided by the WHO Bloomberg Initiative, the government of the Philippines and the WHO have implemented a range of tobacco-related programs. These programs aim to strengthen the country's capacity for tobacco control; run sustainable tobacco control programs that protect people from exposure to tobacco and tobacco smoke; prevent premature deaths from smoking-related diseases; and save lives.

Implementation

WHO is contributing to the implementation of MPOWER measures in the Philippines by:

- encouraging the government to increase tobacco prices and taxes
- providing technical and financial support to develop appropriate policies
- supporting actions to enhance tobacco control

- promoting prevention and cessation interventions
- initiating collaboration with non-government organisations and the media to help promote tobacco control.

WHO is working with the Philippines government to monitor tobacco consumption and undertake large-scale surveys of the population. The data collected provides a basis for future public health research and contributes to effective monitoring and control of tobacco consumption. Other organisations involved in the implementation of the program include the Department of Education; Department of Social Welfare and Development; Land Transportation and Franchising Regulatory Board; Land Transportation Office; Philippines Ports Authority; Civil Aviation Authority of the Philippines; Department of Tourism; Tourism Infrastructure and Enterprise Zone Authority; and the Philippines Society of Mechanical Engineering.

FIGURE 13.24 No-smoking sign at White Beach, Boracay Island, in the Philippines. The government is working with WHO and other organisations to implement a range of programs to monitor and control tobacco use.



Outcomes

Through this program the Philippines has been successful in implementing a range of initiatives. Since 2008, the WHO has worked with various government offices, agencies and societies to promote policies that set standards for 100 per cent smoke-free environments. The WHO has also continued its work to help develop smoke-free legislation, including supporting the Department of Health to develop a National Action Plan and Strategy for Tobacco Control. In 2014, legislation was passed that made it mandatory for cigarette packets to have a graphic health warning covering 50 per cent of the front and back panels of cigarette packs in the country. The law was implemented in 2016.

How the program promotes health and wellbeing and human development

This program would promote physical health and wellbeing through reducing the numbers of people who smoke in the Philippines. Cigarette smoking is a leading cause of diseases such as cardiovascular disease, cancer and respiratory diseases. Reducing the number of people who smoke in the Philippines would bring about a reduction in morbidity and mortality rates associated with these diseases. Tobacco smoking also contributes to poor physical health and wellbeing among children and non-smokers due to passive smoking. Providing smoke-free environments helps reduce the level of respiratory diseases suffered by children, which promotes physical health and wellbeing. When people feel physically healthy, they are more likely to experience good emotional and mental health and wellbeing. Healthy children and adults can attend school and work and develop relationships, which promotes social health and wellbeing.

A reduction in tobacco smoking could also reduce the level of poverty in the Philippines. Purchasing cigarettes leaves less money for families to spend on food, water and healthcare. Therefore, reducing the level of cigarette smoking can promote health and wellbeing by providing more resources to spend on food for the family and healthcare.

FIGURE 13.25 Passive smoking is a major contributor to poor health and wellbeing in children. Reducing smoking rates will help promote the children's health and wellbeing and human development.



Good health and wellbeing is important for the promotion of human development. Reducing the levels of smoking in the Philippines will help people enjoy a long and healthy life and achieve a decent standard of living. A smoke-free environment is important for individuals to develop to their full potential and have a greater chance of leading productive and creative lives. Healthy people are more likely to feel empowered and to participate in political and community life.

CASE STUDY

Quality health services move closer to rural Afghans in Samangan Province

HAZRAT SULTAN DISTRICT, Samangan Province — Mirza Murad, 60, grips his cane as he walks toward the Hazrat Sultan Comprehensive Health Centre (CHC) on a chilly early morning. He has come to the health centre to see a doctor. Murad is a farm labourer; the years of hard work have left their mark and long-term stomach issues have made him a very thin man.

The centre is located only 5 km from Murad's village, which allows him regular visits for check-ups and medicine. Before the centre's services were expanded he had to travel 24 km to Aybak, the provincial capital of Samangan, for medical care. Being so much closer means he can attend the health centre more regularly. 'Everyone from our village comes here for treatment and the [health centre] personnel treats us nicely,' Murad says. 'The health centre is helpful as it treats our problems.'

The CHC is located in the remote district of Hazrat Sultan in Samangan Province in northern Afghanistan. Set up as a health outpost more than 40 years ago, it was converted to a health centre in 2017 and now offers a broader range of health units: outpatient, midwifery, vaccination, laboratory, nutrition and mental health treatment, as well as a pharmacy and an ambulance. An average of 300 patients a day are seen, and up to five patients can be treated in an inpatient facility. There are 20 employees, including health and support staff, for the 24 000 inhabitants in the district.

Many people attend the centre for check-ups and vaccinations including Zarghoona, 33, who travelled 13 km from Kujar village to have her one-year-old vaccinated. 'The doctors gave us medicine and vaccinated my child,' says the mother of six. 'I am happy with the health centre services.'

The Hazrat Sultan CHC has been providing a basic package of health services (BPHS) since July 2017. It makes up one of the 47 health facilities, such as district hospitals, comprehensive health centres and basic health centres, delivering BPHS in Samangan Province. They provide vital health services to people living in remote areas.

The Afghanistan Sehatmandi Project aims to increase the use and quality of health, nutrition and family planning services across the country. It supports the provision of BPHS and an essential package of hospital services (EPHS) across Afghanistan. The Sehatmandi project is implemented by the Ministry of Public Health (MoPH) but is supported and managed by a range of stakeholders. It is supported by the Afghanistan Reconstruction Trust Fund (ARTF), managed by the World Bank on behalf of 34 donors; International Development Association (IDA), the World Bank Group's fund for the poorest countries; and the Global Financing Facility (GFF), a multi-stakeholder partnership that prioritises areas that have high impact but are underinvested.

Non-governmental organisations also play a vital role in the BPHS. For example, in Samangan Province, the 47 health facilities are contracted by the MoPH to non-governmental organizations such as Social and Health Development Program (SHDP) and Relief Humanitarian Development Organization (RHDO).

Health councils help encourage interaction with the local community and aim to improve relations between the community and health facilities. The health councils include community members who help staff understand local health needs as well as involve the community in health centre activities.

A key role of the health council is to interact with the local population and increase awareness of health issues and the need for quality healthcare. Dr Nisar Ahmad Jawid, SHDP Deputy Technical Project Manager of the Sehatmandi Project in Samangan Province confirms, 'In the past, people would request that we establish more health centres. Now they ask us to increase the quality of the health services they receive, which means people understand their needs.'

The Hazrat Sultan health council is a good example of the community's support of a health facility. The health council, with the help of the local health directorate, has raised funds to build a small building for emergency cases. This means local residents will not need to travel long distances to another health facility in emergencies.

There are still many challenges to overcome in Samangan Province including a lack of adequate buildings and female health professionals. For example, 11 out of the 47 health facilities operate in buildings that are sub-standard for a health facility. New buildings are being constructed under the Sehatmandi Project to rehouse these facilities.

Although the MoPH mandates employment of at least two female health professionals — a nurse and a midwife — per a basic health centre, there is not always staff available. A specific training program in Community Midwifery Education and Community Health Nursing Education aims to increase their number. Forty-eight female high school graduates have undergone the program and are expected to graduate by late 2019 and join health facilities close to where they live.

Source: Adapted from 'Quality Health Services Move Closer to Rural Afghans in Samangan Province', 19.12.2019, The World Bank, https://www.worldbank.org/en/news/feature/2019/12/19/quality-health-services-move-closer-to-residents-in-remote-district-in-samangan-province?cid=ECR_E_NewsletterWeekly_EN_EXT&deliveryName=DM57759

CASE STUDY REVIEW

1. Identify the SDGs being addressed in the program.
2. Describe the program and why it was introduced.
3. Explain how the program reflects the features of effective aid.
4. Discuss how the program could promote health and wellbeing and human development.

13.5 Exercises

learn **on**

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13.5 Quick quiz **on**

13.5 Exercise

13.5 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8, 9

Use the information about one of the programs described in this section to answer the following questions.

Test your knowledge

1. Apart from SDG 3, what other SDGs may be achieved?
2. Who were the target groups for the program?
3. Explain the purpose of the program.
4. What partnerships were involved in the program?
5. Describe how the program was implemented.

Apply your knowledge

6. Explain how the program would help to achieve SDG 3: Good health and wellbeing.
7. Use the four features of effective aid to evaluate the success of the program.
8. Explain how the program would promote health and wellbeing.
9. Discuss how the program would promote human development.

The following case study relates to questions 1, 2, 3 and 4.

Read the following text.

The Australian Government, through DFAT, is helping the Government of East Timor to improve the availability of clean water supplies and adequate sanitation facilities for rural people. The aid program is helping rural communities not only to design and build water and sanitation systems but also to manage and maintain them.

Over four months, students, who are mostly public servants, will learn about basic plumbing and pick up sufficient skills to help develop and maintain a community water and sanitation system. They are enthusiastic about building a water pump and piping system, which they have helped to design.

For a number of years, the Government of East Timor, with assistance from DFAT and many non-government organisations, has been trying to improve the country's water and sanitation services. 'About 400 water systems have been built. But without knowledge, skills and support to repair these systems, when they break down villages are left without water once again.'

Source: Adapted from: *FOCUS*, Feb–May 2009

Question 1 (2 marks)

Use your knowledge of Australia's aid program (see topic 12) to **identify** two priorities of Australia's aid program that are evident in the case study.

Question 2 (2 marks)

Identify the SDGs other than SDG 3 that would be achieved through this program.

Question 3 (2 marks)

Describe how this program, addressing SDG 3 Good health and wellbeing, will improve the health and wellbeing of people in East Timor.

Question 4 (2 marks)

Describe how this program, addressing SDG 3 Good health and wellbeing, will impact on the human development of people in East Timor.

Question 5 (2 marks)

Read the following information about a program funded by the United Nations Development Program (UNDP).

Fish farming in Nigeria

The idea of the Demonstration Fish Pond, which began in November last year, with a stock of 3000 juvenile cat fish, is part of the wider strategy to diversify Agriculture in Pampaida Millennium Village and to promote fish production for sustainable livelihood for farmers. The target is for at least 50 per cent of the households in the community to adapt/buy into this means of sustainable livelihood using purely environmental land resources. This fish pond serves as an in-house learning laboratory for potential fish farmers.

Also, the location for the Demonstration Fish Pond is meant to showcase how waste land within communities can be turned into productive use for income generation — waste to wealth initiative.

Source: Adapted from: <http://web.ng.undp.org/news/3-06-2009.shtml>

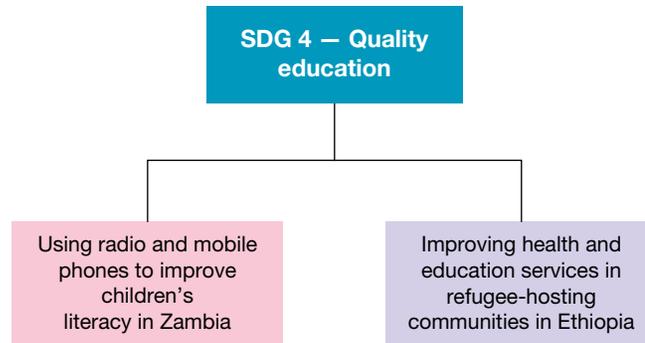
Explain how this UNDP project, addressing SDG 3 Good health and wellbeing, will improve the health and wellbeing of people in the village.

More exam questions are available in your learnON title.

13.6 Aid programs addressing SDG 4 Quality education

KEY CONCEPT Aid programs implemented to achieve quality education

FIGURE 13.26 Programs included under SDG 4



If focusing on SDG 4 students can explore any one of the programs implemented.

13.6.1 Using radio and mobile phones to improve children's literacy in Zambia – 'The way we live' program

Background and purpose

In Zambia, children often miss out on the opportunity to develop literacy skills because there are few trained teachers, and many primary schools lack a variety of reading materials. In addition, less than 50 per cent of children in Zambia start primary school at the age of seven, which is the expected starting age. In 2014, the Ministry of General Education in Zambia mandated that children start their learning in all subjects in local language in primary schools so they could develop literacy skills in their mother tongue before transitioning to English. However, there is a limited supply of published local language books, which restricts children from improving their reading skills.

Although literacy levels are low across Africa, the rates of mobile phone usage are quite high, with 93 per cent of people having access to a mobile phone service. The purpose of the program is to develop mother-tongue reading materials and promote parental engagement in reading using mobile phone technology in Eastern Province, Zambia. The program is called 'The way we live' or Makhalidwe Athu in the local language. It uses digital Short Message Service (SMS) and Interactive Voice Response (IVR) messaging to regularly share local language stories with the children and their families using their personal mobile device. The project also aims to illustrate story booklets so they can be distributed to schools to provide children with new reading materials.

Implementation

The program is implemented by Creative Associates International in partnership with the local community and radio station, and is funded by USAID, World Vision and the Australian government as part of a larger program known as All Children Reading: A Grand Challenge for Development.

Each week, stories are provided by community members. Literacy specialists then adapt the local stories so they are age-appropriate and at a level that can be understood by the children. The stories are then sent by SMS to parents' phones so children can practise reading at home. Parents can engage with their children by asking reading comprehension questions that also come by SMS.

Another program partner, Breeze FM, a popular Zambian radio station, is using radio to raise community awareness about the literacy program and to generate the collection of local stories. People can submit their stories online, via text, or by dropping stories off at the radio station. The radio station reads local stories on the air as part of a contest. Listeners call in and vote for their favourite story, building interest in generating more stories for children's literature. It also builds a sense of community belonging.

Children and their caregivers gather together to read the short stories on their mobile phones. As each story segment — a total of three — is received on the device, the child writes them down in their exercise books. For further understanding, each story segment is followed by a question parents can ask their children. The questions are asked through SMS, and a recorded version of the story is available to assist illiterate parents. Sixty-eight per cent of participants who were surveyed in the pilot phase said they listen to the voice recording with their child.

More than 200 stories have been collected and shared during the project's pilot phase and now the community can revisit the reading materials for further practice and understanding. In the future, the stories can be reused for other education programs. The program not only helps build literacy but is also helping to preserve culture. It brings families together and all community members are participating in the program.

Outcomes

To evaluate the effectiveness of the program, the University of Chicago collected results through an Early Grade Reading Assessment (EGRA), household survey and learner questionnaires. Around 1200 students in 40 school communities were expected to benefit. In the first 12 months it was found that parents, grandparents and other extended family members in all 1200 participating households reported reading the mobile stories with their children at least once a week, and 78 per cent said they read every SMS message when it was received three times a week. All caregivers reported that the project helped their children's learning process, and many household members actively participated in the reading activity.

Providing reading tools and resources helps empower children to achieve academic success. With the proper resources, an educated girl or boy can help break the cycle of poverty within their families and communities. Students who fall behind in the classroom struggle to grow their reading skills at home. Often, these students don't return to the classroom.

FIGURE 13.27 Parents receive stories by SMS on their mobile phones so children can read them. This helps build literacy skills.



FIGURE 13.28 Local radio stations were part of the program to raise literacy levels by reading out the local stories that were submitted to the station.



13.6.2 How the program promotes health and wellbeing and human development

Programs that focus on improving literacy enable individuals to develop the skills to increase their opportunities for living a healthier life. Educated individuals are more likely to be employed in higher paid positions, thereby earning an income to improve their standard of living and being able to make decisions that may affect their lives and the lives of their families. With greater income, families have increased access to the quantity and quality of food required for good physical health and wellbeing. Good nutrition increases immunity and reduces the risk of disease. Greater income also means families can afford other resources, such as clean water and healthcare, which are important for reducing the risk of illness and disease. Being able to treat illnesses once they develop is important for improving physical health and wellbeing.

Educated individuals can read and understand information related to health and wellbeing, which enables them to not only prevent illnesses from occurring but also to seek the required medical assistance. They are also more likely to understand medical instructions, ensuring that medications are taken in the required dosage. This improves mental health and wellbeing by reducing stress and anxiety associated with the care of a family member who is ill as well as improving the physical health and wellbeing of individuals and populations.

By attending schools or groups where education programs are conducted, individuals become socially connected, which promotes social health and wellbeing. The literacy program in Zambia also built a sense of community belonging, promoting spiritual health and wellbeing.

The health and wellbeing of individuals and communities has a significant impact on the achievement of human development. Healthy individuals can work and earn an income, and are more likely to be involved in their communities, which is important for promoting human development. In this program, not only did it help build literacy skills, but it also helped to preserve culture, bring families together and encourage participation by all community members. All this promotes human development and social and spiritual health and wellbeing.

Similarly, creating an environment in which human development is promoted is important for ensuring that infrastructure, resources and services are available to improve health and wellbeing. At the national level, educating individuals results in a more skilled workforce, which contributes to a country's level of income. A country with a higher income can implement programs and develop infrastructure projects that promote health and wellbeing and human development. This can be achieved through creating an environment in which people can develop to their full potential and lead creative, productive lives in accordance with their needs and interests. Educated individuals have more choices, have access to knowledge and a decent standard of living, and have greater opportunities to participate in the lives of their communities and the decisions that affect their lives. Educated parents are more likely to educate their own children, which is important for ensuring that improvements in health and wellbeing and human development are continued in the future.

FIGURE 13.29 Educated women are more likely to seek medical care and to take action to prevent ill health occurring.



CASE STUDY

Improving health and education services in refugee-hosting communities in Ethiopia

The Horn of Africa has suffered from decades of political strife, instability, conflict and climate change. As a result, 4 million people have been internally displaced and 9 million people crossed national borders in the Horn of Africa. Countries in the Horn of Africa have felt the impact of a long, drawn-out refugee crisis in South Sudan, Somalia and the Democratic Republic of Congo. According to UNHCR, large numbers of refugees can be found in Uganda (1.38 million), Ethiopia (735 204) and Sudan (1.1 million).

Ethiopia houses refugee camps with desperate people from South Sudan, Sudan and Eritrea. The World Bank has financed the Ethiopia Development Response to Displacement Impacts Project (DRDIP) to support the communities in Ethiopia hosting the refugees. It focuses on providing social services and economic opportunities to communities where large number of refugees are putting a strain on health and educational services.

The project focuses on increasing capacity and improving accessibility to education and health, especially for women and girls. Forced displacement interrupts access to health and education for all refugees, but women, women-led households and youth are particularly hard hit. Therefore, they are the focus of the program.

The first step was for the implementation team to assess the community before the project, which was known as the comparison group; those involved in the project became the treatment group. This helped assess impact and work out whether any adjustments were needed to make the project more effective.

Information gathered about the average size of households, age and schooling level of household heads, as well as landholdings showed the treatment and comparison groups were similar. At least 60 per cent of household heads had never attended any informal or formal schooling. However, smaller households generally reflected a head who had a higher level of education.

This assessment showed that 25 per cent of school-age children had never been to school. In addition, schooling level across all grades (except for the fifth and sixth grades) were similar between treatment and comparison households. As children grew older, they were less likely to attend school: the proportion of children attending higher grades in both treatment and comparison households declined. Assessment also looked at access to health facilities, with little difference between comparison and treatment groups. Eighty-seven per cent of the comparison communities had a small healthcare facility — or health post — compared to 77 per cent of the treatment communities.

To check progress and results for the Ethiopia DRDIP the project team held a mid-term review of 86 schools and 31 health centres. The results are encouraging. Observations from the field show an improvement in education facilities, from schools in dilapidated sheds with thatched roofs that expose students to wind and dust to schools with large and well-ventilated classrooms with proper furniture. Staffing in schools has been completed with headmasters and regular teachers, and this has led to increased enrolment and attendance in these upgraded schools, as well as significant improvements in the learning environment.

On the health side, more conveniently-located health facilities means more women are receiving prenatal and postnatal care and are giving birth in these these facilities. It also means more children have access to immunizations. Run-down buildings have been upgraded, and doctors and health workers are more effectively assigned and supplied with equipment, power supply and refrigeration — critical for the storage of vaccines.

Source: Adapted from: 'Improving health and education services in refugee-hosting communities in Ethiopia', Varalakshmi Vemuru, 10.03.2020, The World Bank, https://blogs.worldbank.org/dev4peace/are-we-improving-health-and-education-services-refugee-hosting-communities-ethiopia?cid=ECR_E_NewsletterWeekly_EN_EXT&deliveryName=DM56644

CASE STUDY REVIEW

1. Apart from SDG 4, what other SDGs are being addressed in this program?
2. Why was the program introduced?
3. Describe the program that has been introduced.
4. Explain how the program promotes health and wellbeing and human development.
5. Use the features of effective aid to discuss whether this program is an example of an effective aid program.

13.6 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

13.6 Quick quiz **on**

13.6 Exercise

13.6 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8, 9

Use the information in this subtopic about the 'Way we live' literacy program in Zambia to answer the following questions.

Test your knowledge

1. Apart from SDG 4, what other SDGs may be achieved with this program?
2. Who were the target groups for the program?
3. Explain the purpose of the program.
4. What partnerships were involved in the program?
5. Describe how the program was implemented.

Apply your knowledge

6. Explain how the program would help to achieve SDG 4: Quality education.
7. Use the four features of effective aid to evaluate the success of the program.
8. Explain how the program would promote health and wellbeing.
9. Discuss how the program would promote human development.

13.6 Quick quiz **on**

13.6 Exercise

13.6 Exam questions

The following case study relates to exam questions 1 and 2.

Along the Thai-Burma border, Caritas Australia supports a range of programs for those vulnerable communities affected by displacement, violence and inadequate social services. One program, coordinated by partner – Jesuit Refugee Services (JRS), focuses on Burmese children whose parents have migrated for work. For many children, the barriers of language, a lack of documentation, and expensive fees stop them from going to Thai schools. The community-based learning centred set up by JRS give migrant children primary education and a way into Thailand's school system.

Caritas Australia and JRS provide infrastructure, books and tables for students. Each student also receives a uniform, textbooks, stationary, and lunch each day.

This is strongly supported by the Burmese community, who volunteer when they can and offer gifts in kind. The results are impressive: last year, fewer than 5 per cent of children dropped out of the schools.

The community-based learning centres have now seen over 1000 students through their doors. In the long-term, the aim is for them to become transition facilities, leading to children attending Thai schools. Last year 176 students, with JRS scholarships, began studying in Thai schools.

Source: Adapted from: <https://www.caritas.org.au/learn/programs/asia-burma-providing-schooling-and-vocational-training-for-refugees/khin's-story>

Question 1 (1 mark)

A key feature of effective aid programs is being results focused. **Identify** an example from the above program that reflects this key feature.

Question 2 (1 mark)

Identify the key partners involved in the above program.

The following case study relates to exam questions 3, 4 and 5.

The Maryknoll Deaf Development Program (Maryknoll DDP) helps deaf people and people with a hearing impairment become independent and more confident. Maryknoll looks proactively for participants with the greatest needs. The program teaches them sign language, and provides literacy training and skills to help them earn an income. Participants are identified when Maryknoll staff visit the poorest Cambodian communities and identify people living with hearing impairments. They are then invited to join the program in Phnom Penh, Kampong Cham and Kampot. The programs covers all costs, including living expenses.

For most of the young adults in the program, this is the first time they've had a chance to learn, make friends, gain confidence and fulfill their potential.

Source: Adapted from: <https://www.caritas.org.au/learn/programs/asia—cambodia-opportunities-for-people-with-hearing-impairments>

Question 3 (3 marks)

Identify the SDGs that the above program addresses. **Justify** your choice.

Question 4 (2 marks)

Describe how The Maryknoll Deaf Development Program promotes health and wellbeing.

Question 5 (2 marks)

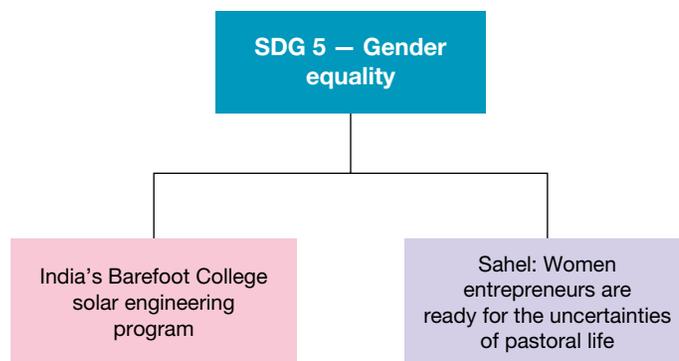
Describe how The Maryknoll Deaf Development Program promotes human development.

More exam questions are available in your learnON title.

13.7 Aid programs addressing SDG 5 Gender equality

KEY CONCEPT Aid programs implemented to achieve gender equality

FIGURE 13.30 Programs included under SDG 5



If focusing on SDG 5 students can explore any one of the programs implemented.

13.7.1 India's Barefoot College solar engineering program

Background and purpose

In many remote villages in low-income countries around the world, there is no access to electricity and women rely on having to purchase expensive kerosene, wax candles or batteries to provide some form of lighting.

Without electricity and lighting, evenings become more dangerous for women and children, who are at greater risk of violence. Income-generating activities are restricted and children are unable to read or study at night. The use of kerosene and wax candles can result in fires, and the use of kerosene for lighting and cooking contributes to indoor air pollution and the associated illnesses such as lower respiratory infections.

The Barefoot College is a non-government organisation that was started in Tilonia, India, in 1972 by a farmer and a social worker. They believed that the way to improve living conditions in poor areas was to empower rural women, particularly those who are illiterate or semi-literate. In many countries, women are often discouraged from getting an education, banned from participating in their communities and do not have access to money or other assets.

Barefoot College launched their first solar program in 1990. The purpose of the program was to provide access to solar-powered electricity in remote and isolated parts of India. They started training young people and semi-literate and illiterate women to become solar engineers. The trainees, who came from all over India, learned to identify parts by their shape and colour, to develop their skills by following verbal instruction and were taught technical skills by watching and following their trainers.

Middle-aged women, most of whom were grandmothers, were found to be the most successful participants in the program. They were easier to teach and were committed to improving life in their village, and had no desire to leave the village once they had received training. The grandmothers also maintained strong connections in their villages and played a major role in community development, bringing sustainable electricity to remote, inaccessible villages. The program has expanded and is now being implemented in low-income countries in Africa, the Middle East, Asia and South America.

Implementation

In partnership with local and national organisations, a team from the Barefoot College and the Village Energy and Environment Committee (VEEC) look for rural communities where they believe solar energy will make a substantial difference. They travel to the community where they establish a relationship with village elders who help ensure there is community support. The program is based on the belief that the village community needs to manage, control and own the solar generators as well as repair and maintain them. Therefore, the program will only be implemented in villages that make a commitment to do this. This builds a sense of ownership of the program.

When the VEEC team come to the village, all members come together so they can understand the benefits of having solar power and how the program will operate. Once the women engineers are trained, the ongoing cost of providing the service must be paid for by the community. The community themselves decide how much they can contribute each month for the maintenance and repair of the equipment. This amount is usually based on what they currently spend buying kerosene, batteries or candles. The community chooses two women in their mid to late 40s who will travel to Tilonia in India to live for six to nine months to become trained as solar

FIGURE 13.31 Many women in Africa rely on kerosene and candles to provide lighting. This contributes to indoor air pollution.



engineers. Funding is provided by a range of donor organisations, including the United Nations Development Program, the Indian government, international aid agencies and private and corporate foundations. Training and travel costs are provided free for participants.

During the six to nine months of training, the women are taught by listening, memorising and being shown how to:

- handle sophisticated charge controllers and inverters (solar cells produce direct current (DC), which is converted into standard alternating current (AC) using an inverter)
- install solar panels and link them to batteries
- build solar lanterns
- establish a local electronic workshop where they can carry out all major and minor repairs to the solar power system themselves.

The Barefoot College provides each village with up to \$50 000 in solar equipment for 120 households. Once the course is finished, the women return to their villages where they install the solar lamp kits and are paid a monthly salary for fixing and repairing them. A committee headed by four women and three men from the village remain in charge of the equipment.

Outcomes

The Barefoot College has trained hundreds of semi-literate and illiterate women, many of them grandmothers from the poorest countries, to be solar engineers. They have all gone back home to install solar panels and batteries, maintain and repair them and change life in their remote villages. An estimated 10 000 women students have passed through the college's doors, while previous students from the college are running more than 800 night schools across India.

The solar program empowers village communities but, more importantly, they empower women. As one Barefoot engineer whose husband and in-laws did not want her to go for training explained, 'My husband will never say it, but I know he's proud of me. Now he asks me to maintain his accounts for him.' Another said, 'I now look back at my childhood when I always dreamed of doing something big for my society. My mother used to laugh at me. Today my family, my neighbours, and even the village elders respect me and value my contribution. It feels wonderful.'

Solar power also reduces carbon dioxide emissions, slows the impacts of deforestation and decreases air pollution from burning firewood and kerosene. It also contributes to improved health and wellbeing outcomes.

FIGURE 13.32 The Barefoot solar engineer program trains illiterate middle-aged women to become solar engineers. They are taught by listening, memorising and by demonstration.



FIGURE 13.33 Women are trained to clean and maintain the solar panels in their community and are paid a monthly salary for their services.



13.7.2 How the program promotes health and wellbeing and human development

The program has provided communities with a clean source of energy for lighting, which promotes physical health and wellbeing. The solar energy sources replace the kerosene and wax candles previously used for indoor lighting. These sources produced indoor air pollution and contributed to lower respiratory diseases for all family members, particularly children, who are more vulnerable to the pollutants. Providing communities with lighting also promotes emotional health and wellbeing, as women and children feel safer at night and less vulnerable to violence. This also reduces stress and anxiety promoting mental health and wellbeing.

This program promotes gender equality. Women, who are traditionally discouraged from gaining an education or being employed, are provided with the knowledge and skills to contribute to their community and earn an income doing so. This promotes emotional health and wellbeing because it brings a sense of pride to the women involved and increases their self-esteem promoting mental health and wellbeing. Being given a chance to attend the Barefoot College also promotes social health and wellbeing as new relationships are developed during this time.

The program brings strong connections to the community and builds a sense of pride and ownership. Women feel proud to be able to give something back to their community, which promotes spiritual health and wellbeing.

The program also promotes human development. It improves the quality of life for the women and for those living in the community. The women have more freedom and opportunities to have control and make choices about factors affecting their lives. Improved health and wellbeing outcomes contribute to an improved standard of living and a chance to live a long and healthy life. The program helps develop knowledge and addresses the basic human right of gender equality. The women feel a greater connection to their community and can now participate in its political and social life. This assists women to develop to their full potential and lead productive and creative lives.

CASE STUDY

Sahel: Women entrepreneurs are ready for the uncertainties of pastoral life

NOUAKCHOTT, MAURITANIA — The women of Bouteydouma sit in a tent surrounded by desert, their colourful veils contrasting with the grey dunes. Their faces show satisfaction and pride in their achievement and proudly they unroll the hides that have just come from their tannery. 'We used to spend all day drinking tea; now we are busy and contributing to the household finances,' says Fatimetou Mint Mohamed, the head of the Bouteydouma Women's Association

Basic tanning of hides has long been practised in the town, but new skills and opportunities opened up when Fatimetou and four other women from this village in southwestern Mauritania had training at the Technical and Vocational Training Institute in Boghe, more than 200 km away. The main occupation in the region is raising livestock, but the hides of the animals were previously discarded. 'They had no value and were thrown away,' says Fatimetou. For two months, the five women received full room and board, along with other women from all parts of Mauritania. Some women brought along their babies, and the trainees learned a less toxic, more environmentally friendly technique to tan hides. Hassan, their teacher, showed them how to make new things, such as special gourds to keep water cool, and has continued to offer support and help to the group via WhatsApp.

The women learned skills from a management course and received equipment and money to buy hides and some initial funds to start their business. This training and financial assistance comes from the Regional Sahel Pastoralism Support Project (PRAPS). PRAPS is changing the lives of many rural households whose main source of income is livestock and is offered in six countries of the Sahel — Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal. These communities face many threats from climate, security and population issues, which threaten their viability. Due to climate change, 40 per cent of 20 million livestock herders live in extreme poverty, no longer able to earn a decent living from livestock. For many more, their life is precarious, and giving them opportunities and knowledge to diversify their incomes will help preserve and improve their way of life.

The first step was to survey households to find out the activities they wanted to develop and what skills would be required. Doussou Hamzata Dicko, who is responsible for gender and social mediation for PRAPS, explains, 'The project targets young people and women in particular and supports them until they begin to produce high-quality products and become independent.' Income-generating activities include leather and hide tanning, animal fattening operations, milk processing and the manufacture of milk products.

The World Bank has given \$248 million in financing through the International Development Association. It is being implemented by the Ministries of Livestock and Employment and Professional Training and is coordinated by the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS).

Results of PRAPS include:

- support for more than 2 million people in six countries
- providing activities that aim to protect natural resources, promote animal health and facilitate the marketing of livestock
- 517 skills-training courses for people living in rural areas
- provision of equipment and seed capital to more than 20 000 individuals, 88 per cent of whom are women.

Back in their village, Fatimetou and her four friends have started a small business that now involves 17 people, mostly other women they have trained. The freedom this offers is valued: being able to work at home, on their own schedules, as their family obligations allow.

'Our new method for processing hides is much quicker and easier to fit into our home life,' explains one young mother. It now takes only three days to process a hide, rather than 10. When the women work together it is even quicker, with just one day needed for processing. Profits are made from their work: the raw hide is bought for 26 Mauritanian ouguiya (MRU) from the village butcher, then transformed and sold for MRU 350. The business is organised: tanned hides are numbered and each worker knows how many she needs to sell, with profits pooled to keep everyone motivated. Beyond money, the women have also found new social status in their new role. 'Now that they see money coming into the household, the husbands have no objections!' say many of them.

Their small business goes from strength to strength and is developing new items including calabash holders, prayer rugs, small decorative objects and key rings, among others. Recently, their gourds, which keep water cool longer, have become a flagship product sold outside Mauritania in the market stalls of Senegal.

As a cooperative, profits are reinvested and used to improve their daily lives and those of their families by sending children to school. It also affords the women little luxuries such as 'new veils or jewellery,' or, for the youngest members in their teens, mobile phones to connect them with the rest of the world. 'And why not a car someday?!

The success of their business gives the women hope and confidence in their ability to survive the challenges and uncertainties of climate change in their region. Already, you will find the leather from the small village of Bouteydouma as far away as Turkey, and Fatimetou and her associates are already thinking of expansion and the possibility of a factory to build their business into the future.

Source: Adapted from: 'Sahel: Women entrepreneurs are ready for the uncertainties of pastoral life', 21.09.2020, The World Bank, https://www.worldbank.org/en/news/feature/2020/09/21/sahel-new-diplomas-in-hand-and-proud-of-it-these-women-entrepreneurs-are-ready-for-the-uncertainties-of-pastoral-life?cid=ECR_E_NewsletterWeekly_EN_EXT&deliveryName=DM92078

CASE STUDY REVIEW

1. Identify the SDGs being addressed in this program.
2. Why was the program introduced?
3. Describe the program being implemented.
4. How might this program promote health and wellbeing and human development?
5. Use the features of effective aid to draw conclusions about whether this program represents effective aid.

13.7 Exercises

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

13.7 Quick quiz **on**

13.7 Exercise

13.7 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8, 9

Use the information in this subtopic about the Barefoot College solar engineering program to answer the following questions.

Test your knowledge

1. Apart from SDG 5, what other SDGs may be achieved with this program?
2. Who were the target groups for the program?
3. Explain the purpose of the program.
4. What partnerships were involved in the program?
5. Describe how the program was implemented.

Apply your knowledge

6. Explain how the program would help to achieve SDG 5: Gender equality.
7. Use the four features of effective aid to evaluate the success of the program.
8. Explain how the program would promote health and wellbeing.
9. Discuss how the program would promote human development.

13.7 Quick quiz **on**

13.7 Exercise

13.7 Exam questions

The following case study relates to exam questions 1, 2 and 3.

Australia funds the Afghan Women's Network's Young Women's Leadership Program. This program aims to increase opportunities for Afghan women in rural and urban areas to influence and contribute to decision making in their communities. It is building a network of young women leaders in Afghanistan. It is also strengthening women's networks across the country to advocate for, and raise awareness of, violence against women and of women's rights, and to prevent violence from occurring. The Afghan Women's Network conducts monthly networking, advocacy and coordination meetings in 16 provinces among member organisations, civil society organisations, government officials and provincial Peace Councils. At these meetings, the Network advocates for the implementation of the Elimination of Violence Against Women law. The network researches the implementation of the Convention on the Elimination of all Forms of Discrimination Against Women in 32 provinces. It regularly holds media conferences at provincial and national levels to advocate for the protection of women's rights, influence policy debates and support the long-term process of changing community attitudes.

Source: Commonwealth of Australia, DFAT, Safe homes and safe communities—Australia's commitment to ending all forms of violence against women and girls, January 2016.

Question 1 (1 mark)

Identify the SDGs being addressed in the above program.

Question 2 (1 mark)

What is the purpose of the Afghan Women's Network's Young Women's Leadership Program?

Question 3 (3 marks)

Explain how the Afghan Women's Network's Young Women's Leadership Program promotes human development.

The following case study relates to exam questions 4 and 5.

Meri Seif (Safe) Bus program – Port Moresby

More than 90 per cent of women and girls in Port Moresby have experienced some form of violence or harassment when accessing public transport. This includes while on buses, walking to and from bus stops, waiting for transport or riding in taxis. To respond to these issues and to prevent violence against women, the Meri Seif Bus (Safe Bus) was established by the Ginigoada Bisnis Development Foundation and UN Women, in partnership with the National Capital District Commission, as part of a comprehensive Safe Public Transport Program. The purple women-only bus is a fixture on the road between Town and Gerehu, with more than 400 women using the service daily. It operates during morning and afternoon peak periods, with additional services planned.

Source: Commonwealth of Australia, DFAT, Safe homes and safe communities—Australia’s commitment to ending all forms of violence against women and girls, January 2016.

Question 4 (3 marks)

Identify the SDGs being addressed in the above program and **justify** your choice.

Question 5 (3 marks)

Describe how the above program promotes health and wellbeing.

More exam questions are available in your learnON title.

13.8 Aid programs addressing SDG 6 Clean water and sanitation

KEY CONCEPT Aid programs implemented to achieve clean water and sanitation

FIGURE 13.34 Programs included under SDG 6



If focusing on SDG 6 students can explore any one of the programs implemented.

13.8.1 Water for communities in Ghana

Background and purpose

Zabzugu is in one of the poorest regions in Ghana, and 85.3 per cent of the people live in poverty. Only 38.3 per cent of the population has access to drinking water and suitable latrines. Others have a well, but it is not enough to provide all members of the community with the required 20 litres per person required for drinking and cooking food every day. Some of these communities only have access to nearby streams where they collect water. However, these streams are also used to water their livestock and wash their clothes, which makes them

dangerous as water sources. In some communities, the women and children must walk many kilometres to fetch water supplies. The people live mainly from subsistence agriculture from corn, sorghum and cassava. The land is also very rocky, making it difficult to find underground water sources. When it can be found, it is often 45 metres down in the deeper layers of rock. The building of wells is, therefore, complicated and expensive. Out of every 1000 newborn infants, 50 will die before reaching their first birthday, and 71 per cent of children under the age of five suffer from chronic malnutrition.

The purpose of the water program was to provide sustainable access to 20 litres of clean drinking water per person per day to 10 communities in Zabzugu to reduce the prevalence of diseases in the community caused by drinking unsafe water.

Implementation

The program was included in the Ghana government's development program for the Zabzugu area. It was funded by the We Are Water Foundation and supported by World Vision. It involved:

- careful planning to ensure the wells were placed in areas of greatest need; there was community participation in establishing this
- using mapping and research techniques to locate the best water sources before building the wells
- testing the quality and flow of the water to ensure the water was high quality
- installing hand pumps as well as protection for the wells to avoid contamination
- establishing a water committee within each community who were trained and provided with the tools necessary for the maintenance and upkeep of the wells
- training two technicians and providing them with the tools needed to be able to carry out the necessary repairs
- establishing a system within the community to raise the funds needed for the ongoing repair and maintenance of the hand pump.

Outcomes

In the first phase of the program, at least 3000 people benefited from access to clean water. In the second phase, access to clean drinking water was provided to a further 3300 people in another nine communities.

13.8.2 How the program promotes health and wellbeing and human development

The provision of clean water and sanitation is essential for the prevention of a range of diseases, such as diarrhoea and cholera, which improves physical health and wellbeing and reduces under-five mortality rates. Having access to clean drinking water means that children will have better nutrition and will be able to attend

FIGURE 13.35 In countries such as Ghana, the only water sources are those that are also used to water livestock and for washing.



FIGURE 13.36 In the first phase of the water program, 3000 people benefited from access to safe water. In the second phase, a further 3300 people benefited.



school. Parents will also have improved physical health and wellbeing and will be able to undertake work and provide an income for their family. The time spent by the population, usually women and children, collecting water will be dramatically reduced, which means children are able to attend school and women are able to work to earn an income. This promotes social health and wellbeing and brings about a sense of pride and self-esteem, which promotes emotional and mental health and wellbeing. When people are free from water-related diseases and able to interact with others, they are more likely to engage in activities within their villages. This is important for building positive relationships with members of the community, which promotes spiritual health and wellbeing. When individuals feel connected to their community, they are more likely to uphold the rules, laws and values of their communities. This is important for creating an environment in which human development can be promoted. People feel empowered to participate in the social and political life of their community and have greater control over the decisions that affect their life.

The program not only focused on the provision of clean water and sanitation, but also includes education regarding the maintenance of these resources. Educated individuals have an increased capacity to earn a higher income, which improves their access to resources such as medications, food and other resources that are required to improve physical health and wellbeing. This is important for human development, as it provides opportunities for people to enjoy a decent standard of living and develop to their full potential. Life expectancy is increased and individuals have a greater chance of living a productive and creative life in accord with their needs and interests.

CASE STUDY

Providing sustainable sanitation and water services to low-income communities in Nairobi

Africa's cities are growing at an extraordinary rate. The urban population in Kenya alone will more than triple from 12 million now to 40 million by 2050. The impact of this swift growth in cities is felt in the water use and wastewater management, with growing populations putting pressure on already strained supplies and increasing the existing issues and problems, such as pollution and overexploitation.

In Nairobi, only 40 per cent the city is connected to a sewerage system and only half of the urban population in Kenya has access to water. Growing low-income settlements spring up as the urban poor create informal settlements where there is little or no water or sanitation for residents.

The Kenyan government's national development plan, Kenya Vision 2030, sets out a goal to fill these gaps. It aims to make sure all citizens have access to basic water and sanitation by 2030, the deadline for the Sustainable Development Goals (SDGS). This vision will need a multi-factored approach including both financing and monitoring.

Initial help has been given by the World Bank to increase water access and sanitation services. This is implemented through various International Development Association (IDA) investments in the Nairobi City Water and Sewerage Company (NCWSC), Athi Water Services Board (AWSB) and Kenya Informal Settlements Improvement Project (KISIP).

In Nairobi's informal settlements, poor infrastructure and squalid living conditions are common, with overcrowding increasing the already hazardous health conditions. In the Kayole-Soweto settlement on the eastern periphery of Nairobi, women and children often walked long distances to get a small amount of daily water.

'We used to get water from Umoja,' says resident Beatrice Akoth Okoth. 'It's about 10–12 km from this place. You couldn't even walk there twice [in a day], and you could only carry a 20 litre container. But because cleanliness starts with water, we couldn't keep ourselves clean.'

Angeline Mutunga agrees. 'In the last five to six years, we used borehole water due to the water shortage. The sewer connection was also very poor. The septic tank latrines, when used for a long time, caused a very foul smell.'



Through the World Bank's output-based aid subsidies (OBA), almost 85 000 people in these areas of Nairobi now have access to water services and are connected to sewage networks. The World Bank-supported Nairobi Sanitation Project focused on:

- improving water and sanitation access for people in urban settlements
- leveraging commercial and customer finance to support project financing
- increasing the amount of safely disposed faecal sludge
- reducing water contamination
- improving the overall environmental health risk.

To deliver, the World Bank provided US\$4.08 million in OBA subsidies for water and sanitation services, and US\$250 000 to monitor and for technical assistance. Finance was need for infrastructure, for both household water and sanitation, and also connection to sewers and water mains. This was delivered through the OBA subsidies The technical assistance included supporting community engagement, helping NCWSC access a commercial loan and social marketing and hygiene promotion activities.

Results include:

- 84 940 people in Nairobi's informal settlements now have access to improved water sources
- 137 243 people now connected to the sewerage network
- other environmental and public health benefits, such as less open defecation and reduced sewage in the streets, and fewer incidents of diseases such as cholera.

Crucial to the success of the project was the wish of Nairobi's residents for improved access to water, sanitation and sewerage services. Surveys of residents showed 85 per cent of residents were willing to pay more for water and sewerage connections, with that number reaching 98 per cent in the Mailisaba and Huruma settlements.

By 2050, nearly seven out of every 10 people in the world will live in cities — and water and sanitation are crucial for them to thrive. They not only drastically improve the quality of lives, they can save lives. With access to clean water and toilets provided under the Nairobi Sanitation Project, Mutunga and her family are safer and healthier. 'I now feel like a Kenyan with a lot of dignity.'

Source: Adapted from: 'Providing sustainable sanitation and water services to low-income communities in Nairobi', 19.02.2020, The World Bank, https://www.worldbank.org/en/news/feature/2020/02/19/providing-sustainable-sanitation-and-water-services-to-low-income-communities-in-nairobi?cid=ECR_E_NewsletterWeekly_EN_EXT&deliveryName=DM55453

CASE STUDY REVIEW

1. In addition to SDG 6, identify other SDGs addressed in this program.
2. Why was the program implemented?
3. Explain the purpose of the program.
4. Using the features of effective aid, discuss whether the program represents effective aid.
5. Discuss how the program would promote health and wellbeing and human development.

13.8 Exercises

learn **on**

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

13.8 Quick quiz

on

13.8 Exercise

13.8 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8, 9

Use the information in this subtopic about the safe water and sanitation program in Ghana to answer the following questions.

Test your knowledge

1. Apart from SDG 6, what other SDGs may be achieved with this program?
2. Who were the target groups for the program?
3. Explain the purpose of the program.
4. What partnerships were involved in the program?
5. Describe how the program was implemented.

Apply your knowledge

6. Explain how the program would help to achieve SDG 6: Clean water and sanitation.
7. Use the four features of effective aid to evaluate the success of the program.
8. Explain how the program would promote health and wellbeing.
9. Discuss how the program would promote human development.

13.8 Quick quiz



13.8 Exercise

13.8 Exam questions

The following case study relates to exam questions 1, 2, 3 and 4.

In Kenya's Nyanza Province, a safe water and hygiene programme supplied clay pots to 45 public primary schools for safe water storage. The schools were also given a year's supply of water disinfectant, 200-litre plastic water tanks with taps for hand washing and soap. Two teachers from each school received educational materials were provided to two teachers from each school. These covered water treatment, how to safely store water and good classroom hand-washing practices. The teachers formed safe water clubs with students, who were encouraged to share the information with their parents.

Source: Adapted from: [https://www.unicef.org/wash/schools/files/Raising_Even_More_Clean_Hands_Web_17_October_2012\(1\).pdf](https://www.unicef.org/wash/schools/files/Raising_Even_More_Clean_Hands_Web_17_October_2012(1).pdf)

Question 1 (1 mark)

Identify the SDGs being addressed in the above program.

Question 2 (1 mark)

What is a purpose of the above safe water and hygiene program?

Question 3 (2 marks)

Using examples from the safe water and hygiene program, **describe** how this program promotes two dimensions of health and wellbeing.

Question 4 (3 marks)

Using an example, **explain** how the safe water and hygiene program promotes human development.

Question 5 (5 marks)

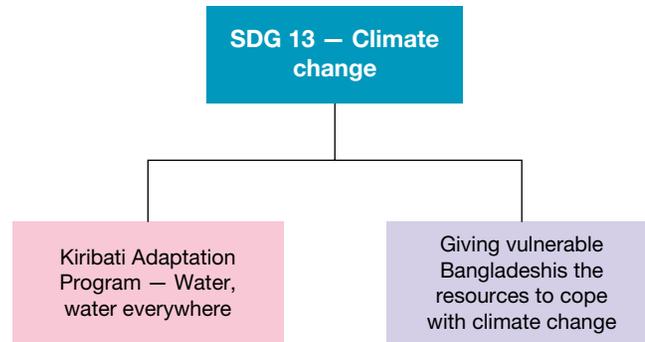
Identify and **describe** an effective aid program that addresses Sustainable Development Goal 6 – Clean water and sanitation. In your discussion make sure you identify the purpose of the program, partnerships involved and how it was implemented.

More exam questions are available in your learnON title.

13.9 Aid programs addressing SDG 13 Climate action

KEY CONCEPT Aid programs implemented to take action on climate change

FIGURE 13.37 Programs included under SDG 13



If focusing on SDG 13 students can explore any one of the programs implemented.

13.9.1 Kiribati Adaptation Program – water, water everywhere

Background and purpose

Kiribati is located in the Central Pacific Ocean and is made up of 33 coral atolls spread across 5.3 million square km. Most of the islands are less than two kilometres wide, with an average height of 1.8 metres above sea level. With the entire population and most of the infrastructure located on the coast, damage and coastal erosion from high tides, storm surges and strong winds is an increasing issue. King tides can wash over entire islands, causing flooding for days and contaminating drinking water supplies for weeks and even months. Prolonged droughts can cause extreme water shortage, affecting agriculture and peoples' health and wellbeing.

North Tarawa, while still part of the main island of Kiribati, is only accessible by boat and remains largely subsistence-based, with residents gathering most of their food and water from their surroundings. Until recently, communities used ground water from wells for all their cooking, drinking and farming needs. While usually safe after boiling, ground water can become contaminated by seawater during floods and king tides, making people, especially children, sick. Prolonged periods of drought often mean heavy rationing of water, affecting general health and wellbeing and agriculture. Infant mortality in Kiribati is the highest in the Pacific Islands, at 43 deaths per thousand live births, with diarrhoea contributing to most of these deaths.

FIGURE 13.38 Kiribati is very vulnerable to the impact of climate change. King tides can wash over entire islands, causing flooding and contaminating drinking water supplies.



Implementation

The World Bank has been working with the government of Kiribati since 2003 on three phases of the program. The first phase focused on supporting education programs to raise awareness of the impacts of climate change and incorporating climate change into government policies. The second phase of the program focused on mangrove planting and the construction of seawalls to address coastal erosion and the third phase is focused on developing rainwater collection systems (rainwater tanks). These measures are designed to help Kiribati better prepare and withstand climate related impacts in the future.

Extensive consultations with local authorities and community members was undertaken to design the systems to be used, decide on the most appropriate buildings and locations (to be retrofitted with gutters and piping to help catch rain and direct it to the tanks) and to establish operation and maintenance committees, which are responsible for the systems and their maintenance. The water goes straight to the tanks where it is stored and shared among the people, who also decide on how the water will be rationed during times of drought.

Key coastal areas of Kiribati are also being protected through locally managed adaptation plans, identifying vulnerable areas or infrastructure and mapping out ways to maintain or protect it from climate-related events. The Kiribati Adaptation Project and its activities are supported through the governments of Australia, Japan and Kiribati, as well as the global Environment Facility and the World Bank Global Facility for Disaster Reduction and Recovery.

Outcomes

The program will benefit more than 100 000 people living in Kiribati. By better adapting to effects of climate change, Kiribati can improve water resources and better protect its coast against storm waves and flooding. These adaptation measures will also help the country better manage natural hazards.

13.9.2 How the program promotes health and wellbeing and human development

Clean water is essential for the prevention of many diseases, such as diarrhoea, which is the leading cause of infant deaths in Kiribati. A clean and adequate water supply promotes physical health and wellbeing. When children have good physical health and wellbeing, they can attend school. With clean water, parents will also have improved physical health and wellbeing. This enables them to work and provide an income for their family. Attending school and being able to work promotes social health and wellbeing and brings about a sense of pride and self-esteem, which promotes emotional and mental health and wellbeing. This program provides opportunities for communities to be involved in the design and implementation of the program, which builds positive relationships with members of the community and promotes social and spiritual health and wellbeing. When people feel connected to their community, human development is promoted. They are more likely to participate in the social and political life of their community and have greater control over the decisions that affect their lives.

The Kiribati Adaption program is also focused on building resilience to climate change. Through action taken to stop erosion of the coastal areas and the building of sea walls, flooding will be reduced and people's livelihoods are more likely to be protected. As sea levels rise, the islands are more likely to be able to withstand the impact. Fewer homes and farming areas will be lost, which will reduce stress and anxiety and provide families with a more optimistic outlook for the future, promoting mental health and wellbeing. The loss of crops and homes contributes to poverty and ill health.

FIGURE 13.39 The installation of water tanks provides Kiribati with clean water that is not contaminated by seawater during floods and king tides due to climate change.



The program not only focuses on the provision of clean water and sanitation but also includes education regarding the maintenance of these resources. Educated individuals have increased capacity to earn a higher income, which improves their access to resources, such as medications, food and other resources that are required to improve physical health and wellbeing. This is important for human development because it provides opportunities for people to enjoy a decent standard of living and develop to their full potential. Life expectancy is increased and individuals have a greater chance of living a productive and creative life in accord with their needs and interests.

CASE STUDY

Giving vulnerable Bangladeshis the resources to cope with climate change

Rangu Debi, 70, lives on Monpura, an isolated island of Bhola district in Bangladesh, by the Meghna River. A widow with six children, she has seen many catastrophic cyclones and floods, but fifty years ago, Cyclone Bhola's flood waters took everything from her.

'The flood water of 1970 cyclone took one of my daughters, whom I miss always. We spent whole night in tress [trees], some survived holding tails of dead cows. We lost our homes, communal assets and livelihoods,' she says.

Since then she's been living in a government shelter, and her story is not uncommon. A densely populated, low-lying country dominated by floodplains, Bangladesh is exceptionally vulnerable to flooding. Long subject to frequent cyclones, extreme weather and storm surges, climate change is now supercharging those events.

Meanwhile, rising sea levels are driving a slow onset disaster in salinization. Rangu says it's affected her family's health. In earlier days, river and pond water was safe to drink, but not any longer. 'Now the water tastes salty, and we feel abdominal pain all the time. We suffer often from diarrhea, dysentery and jaundice,' she says.

Those able to leave hazard-prone areas have done so, while the poorest have been left behind with flimsy housing, tenuous livelihoods and nowhere to go when disaster strikes. Hundreds of millions of lives hang in the balance.

UNDP has been supporting Bangladesh with advancing adaptation planning and budgeting and tracking domestic climate finance, to resilience building, to reducing emissions from fossil fuel-based power and advancing the country's REDD+ Readiness Roadmap.

One project has taken a community-led, approach, working with nature to improve jobs and food security and reduce disaster risk. Since 2015, with the backing of the Global Environment Facility-Least Developed Countries Fund, Bangladesh's Forest Department and UNDP have been working with eight coastal communities in the Bhola, Barguna, Patuakhali, Noakhali and Pirojpur.

Razia Begum, 48, lives on the island of Char Johiruddin in Bhola. She came almost 20 years ago with her family after losing her home and everything she owned to riverbank erosion. Her new home is also extremely precarious. The houses are not sturdily built — they are constructed with bamboo, corrugated iron or even straw. When frequent cyclones hit, the family and their livestock take shelter in the local cyclone centre.

'The children cannot go to school for many days,' she says. 'We lose crops, livelihoods, cattle, and our homes.'

By offering families more resilient, sustainable livelihoods, the project is helping them put food on the table and increase their incomes, while also reducing pressure on forests. More than 2000 families have been taught how to cultivate of saline-tolerant rice, build floating vegetable gardens, and grow fruit and pulses and more than 2500 households have been trained in livestock-rearing, such as raising ducks, establishing fisheries, including cage aquaculture and crab fattening.

A further 140 households have been introduced to innovative ecosystem-based farming models, including the award-winning 'Forest-Fruit- Fish-Vegetable' model (3FV), implemented in 28 hectares of degraded forest land. To regulate drainage and protect agricultural fields from saline water intrusion, the project has also been excavating 2.9 kilometres of canals and renovated sluice gates.

One hundred and fifty tube well platforms have been raised above flood level, while 140 new ponds are also helping ensure safe drinking water.

'Two years ago we had very few ponds so we were dependent on the tube well. Now we have 40 ponds,' she says. 'As tidal water cannot enter the ponds, so we get fresh rainwater. It reduces our labour.'

The project has constructed six raised earthen platforms, which can shelter up to 15000 livestock during disasters.

Restoring and nurturing mangrove forests, a first line of defence against climate disasters — has been a core component of the project.

Since its inception, more than 572 000 seedlings of 12 climate-resilient species have been raised in its nurseries.

The project has expanded the diversity of species in 650 hectares of previously mono-culture plantations, also developing an assessment plan to determine how effective the diversification has been.

Some 600 people, mostly women, are now members of Forest Resource Protection Groups established under the project to manage and protect mangroves.

Story by Kate Jean Smith, Communications Specialist for Climate Change Adaptation, UNDP.

Source: Adapted from: <https://undp.medium.com/giving-vulnerable-bangladeshis-the-resources-to-cope-with-climate-change-aeb9b58e4557>, 5 September 2020

CASE STUDY REVIEW

1. In addition to SDG 13, identify other SDGs being addressed in this program.
2. Why was the program implemented?
3. Explain the purpose of the program.
4. Using the features of effective aid, discuss whether the program represents effective aid.
5. Discuss how the program would promote health and wellbeing and human development.

13.9 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

13.9 Quick quiz

on

13.9 Exercise

13.9 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6

■ LEVEL 3

7, 8, 9

Use the information in this subtopic about the Kiribati Adaptation Program to answer the following questions.

Test your knowledge

1. Apart from SDG 13, what other SDGs may be achieved with this program?
2. Who were the target groups for the program?
3. Explain the purpose of the program.
4. What partnerships were involved in the program?
5. Describe how the program was implemented.

Apply your knowledge

6. Explain how the program acts on climate change.
7. Use the four features of effective aid to evaluate the success of the program.
8. Explain how the program would promote health and wellbeing.
9. Discuss how the program would promote human development.

The following case study relates to exam questions 1, 2, 3 and 4.

Vinsen is a farmer living in West Timor, Indonesia. In the past farming was difficult due to poor soil quality and erosion, however at least the weather was predictable. However, in recent years, weather patterns have become increasingly erratic in Vinsen's region. In 2010 and 2011, Vinsen's village experienced heavy rains and strong winds, which killed livestock and destroyed crops. Incomes went down and throughout the area famine spread. In response, Vinsen enrolled in the Sustainable Agriculture Program to protect his family's future. This is an initiative supported by Caritas Australia and run by local partner Yayasan Mitra Tani Mandiri (YMTM).

The YMTM Program provides training for farmers and a YMTM representative in each village helps and advises farmers on challenges. To stabilise the land against landslides, the farmers learnt to terrace their land, which also helps to harness rainfall and stop erosion. They learnt how to plant both long-term and short-term crops to balance crop fluctuations and unexpected weather. The planting of a mix of long and short-term crops also provides a more stable income. Since the YMTM Program, Vinsen's income has increased by 25 per cent and his family now lives without fear of food insecurity.

'Before the program I was very anxious,' says Vinsen. 'But now I do not worry. There is always cassava, banana and taro in the garden. We will not be hungry.'

Vinsen encourages others to join the program and is now training others in his community.

Source: Adapted from: <https://www.caritas.org.au/learn/programs/asia-indonesia-helping-farming-communities-become-more-sustainable/vinsen-sustainable-food-for-life>

Question 1 (1 mark)

Identify the SDG being addressed in the above case study.

Question 2 (1 mark)

What are the partnerships involved in the above program?

Question 3 (1 mark)

Outline the purpose of the Sustainable Agriculture Program.

Question 4 (3 marks)

Using examples, **explain** how the human development of Vinsen has been promoted as a result of the Sustainable Agriculture Program.

Question 5 (4 marks)

Describe an effective aid program that addresses Sustainable Development Goal 13 – Climate action. In your discussion make sure you name the program, **identify** the purpose of the program and how it was implemented.

More exam questions are available in your learnON title.

13.10 Taking social action

KEY CONCEPT Understanding ways in which people can take social action

on Resources

Teacher-led video Taking social action (tlvd-0264)

Social action is about doing something to help create positive change. Individuals can take social action at a personal level, or can join an organised group to advocate for change. Large-scale social action in the past has been successful in bringing about significant social change such as the **suffragette movement** of the late nineteenth and early twentieth centuries, which was successful in giving women the right to vote; or the civil rights campaign in Australia from the late 1950s during which activists came together to fight for equal civil rights for Aboriginal and Torres Strait Islander peoples. This is often the image people have about taking social action: being part of demonstrations, rallies and marches and carrying signs and placards. By working together, groups can exercise greater power because of their numbers.

However, social action is not just about being part of large-scale campaigns and demonstrations. There are many ways individuals can take action to bring about social change. Social action can be used to influence the decisions of those who have the power to make changes, or actions can be taken to directly address a problem and effect change. People can use their purchasing power, the media, their votes, **boycotts**, and other types of social, political, and economic pressure to convince governments and other decision makers to rethink their decisions, or take action that helps those who are worse off than themselves. Having a say shows understanding and concern about issues such as poverty, inequality and climate change. Social action has been shown to be effective in bringing about change. When people come together, unite and advocate for change, they can make a difference.

Some of the reasons why people might engage in social action include:

- *to help those who are less fortunate than themselves.* Social action raises awareness of their situation.
- *to ensure that the needs of all people are represented,* particularly those who are often ignored, such as minority groups, those with low income or those with a disability.

FIGURE 13.40 People often associate taking social action with demonstrations, rallies and marches.



FIGURE 13.41 There are many ways in which people can take social action.



Suffragette movement the struggle to win women's right to vote and to take on leadership roles within the government. Often referred to as the women's rights movement.

Boycott refusing to buy or use the goods or services of a certain company or country as a protest

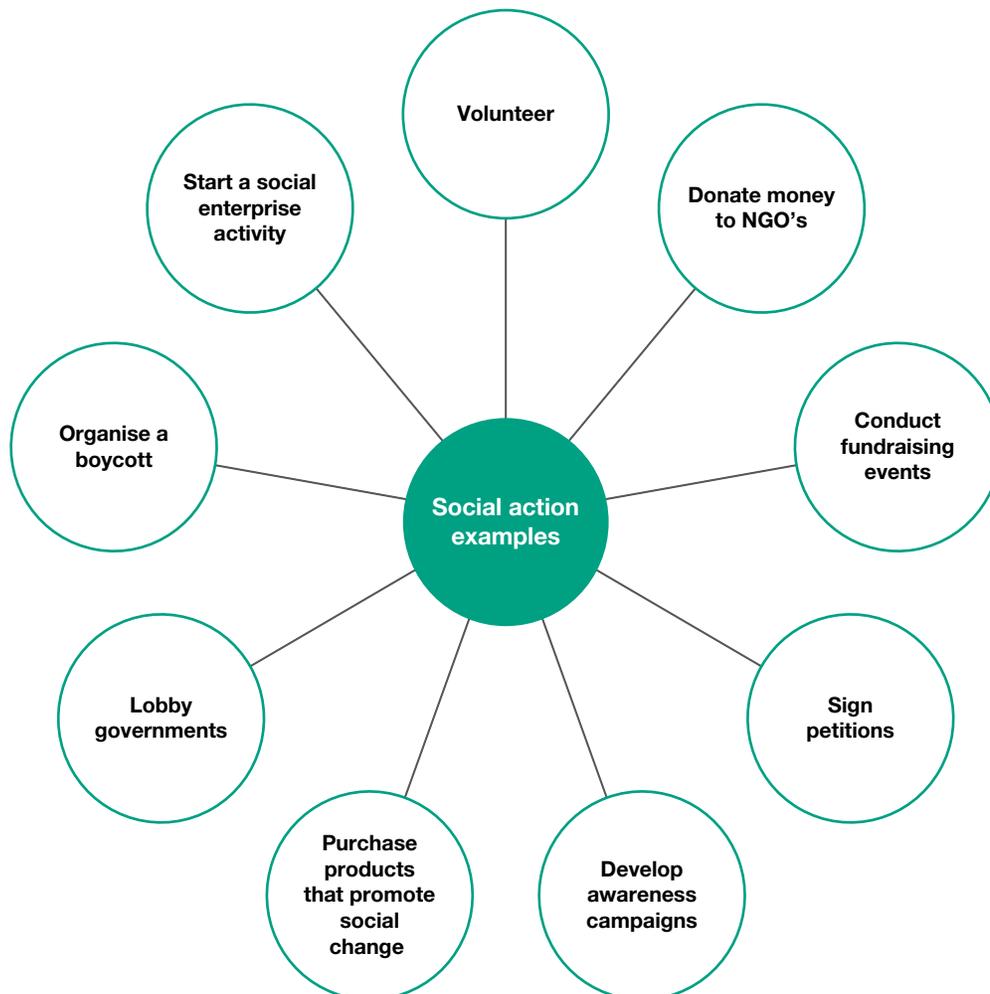
- to eliminate discrimination.
- to prevent harm and damage to the community or the environment. An example is advocating against large-scale development of fragile environmental areas.
- to preserve something of historical or social value.

13.10.1 Ways of taking social action

While there are many reasons why people take social action, there are also many different types of social action that can be taken. People can:

- volunteer their time to assist in raising funds or be part of a volunteer program designed to help improve the lives of others and their communities. An example of this could be volunteering to collect money as part of the Red Shield Appeal for the Red Cross. These funds are often used to help those people who are disadvantaged in the local community.
- donate money to non-government organisations such as World Vision, Oxfam, Red Cross and others to help them continue the work they do in low- and middle-income countries. Through these organisations, people can donate money to fund development programs, provide emergency assistance, sponsor a child or provide microfinance to help families start a small business.
- conduct fund-raising events in the school or community to support a social change project
- show support for a social change campaign by signing online petitions, being involved in online competitions and other social media activities. Community support from around the world can be a powerful way to show the leaders of countries that people around the world are watching and following and the issue is not hidden.

FIGURE 13.42 There are many different ways people can take social action.



- find out more about social issues and implement an awareness campaign locally or through social media outlets
- use purchasing power to buy products that support actions to promote social change. Many non-government organisations provide online shopping where the profits from selling goods is given back to communities or used to bring about social change.
- lobby governments or decision makers by organising a group of people to write letters to newspapers, send emails to politicians and invite politicians to attend a community gathering to answer questions
- organise a boycott, which means people collectively decide not to buy particular products because of how they are made, how the workers are treated or the impact they have on the environment
- start a social enterprise activity. A social enterprise activity is based on identifying and researching a problem, planning a solution, developing an action plan and then taking action to solve the problem.

CASE STUDY

Citizens of the Great Barrier Reef: going beyond our backyard to protect the reef

By Georgina Gurney

From place-based to problem-based campaigns, we are seeing a rise in initiatives aiming to foster collective environmental stewardship among concerned citizens across the globe. These international communities have arisen to meet new environmental challenges and seize the opportunities presented by our increasingly connected world.

Traditional approaches to community engagement have tended to focus only on the involvement of local people. However, the recently launched Citizens of the Great Barrier Reef initiative highlights the changing nature of community engagement aimed at fostering environmental stewardship.

In a globalised world, maintaining treasures like the Great Barrier Reef and other ecosystems affected by global-scale threats demands new approaches that involve participation not only of people living locally, but also those in distant places.

A connected world

Today's environmental problems tend to be characterised by social and environmental connections with distant places.

In terms of environmental connections, places such as the Great Barrier Reef are increasingly affected by global threats. These include: poor water quality associated with port dredging driven by international mining; reef fisheries influenced by national and international markets; and, most importantly, coral bleaching caused by climate change. Social and political action beyond the local is needed to combat these threats.

Social connections are increasing through both ease of travel and social media and other forms of virtual communication. This provides opportunities to engage more people across the globe to take meaningful action than ever before. People are able to form and maintain attachments to special places no matter where they are in the world.

Our recent research, involving more than 5000 people from over 40 countries, shows that people living far from the Great Barrier Reef can have strong emotional bonds comparable to locals' attachments. These bonds can be strong enough to motivate them to take action.

Harnessing social media

Increasing social connections across the globe don't only allow people in distant locations to maintain their attachments to a place, they also provide a vehicle to leverage those attachments into taking meaningful actions to protect these places.

Such strategies can now be used even in the most remote of locations — such as 60 metres above the forest floor in a remote part of Tasmania.

During her 451-day tree sit, activist Miranda Gibson co-ordinated an online action campaign. She was able to engage a global audience through blogging, live streaming and posting videos and photos.



Social media provide a new way to foster a sense of community among people far and wide. In this sense, “community” doesn’t have to be local; individuals with common interests and identities can share a sense of community globally. Indeed, this is a key ingredient for collective action.

Employing images and language targeted to appeal to people’s shared attachments to a place can help increase collective stewardship of that place.

Beyond slacktivism

An important challenge in engaging distant communities in environmental stewardship is to avoid the pitfalls of ‘*slacktivism*’.

This refers to the phenomenon of people taking online actions that require little effort, such as joining a Facebook group. It makes them feel good about contributing to a cause but can stop them from taking further action that has real on-the-ground impacts.

More meaningful options are available to people in remote places that can result in real change. These include lobbying national governments, international organisations (such as the World Heritage Committee), or transnational corporations (to prioritise corporate social responsibility, for example). Most organisations that have successfully engaged distant people in environmental stewardship, including *Fight for Our Reef*, have tended to take a political approach to help with lobbying efforts.

Other meaningful actions that can be undertaken remotely include supporting relevant NGOs and reducing individual consumption.

A new approach to global citizenship

The Citizens for the Reef emphatically *state* that they are ‘not looking for Facebook likes’ but seek ‘real action’.

The six actions being promoted include reducing consumption of four disposable products, eliminating food wastage, and financially supporting crown-of-thorns starfish control. Signed-up citizens are given an ‘impact score’, based on undertaking these actions and recruiting others, and can compare their progress to others around the world.

The initiative provides an example of a new form of environmental activism that is emerging in response to increasing global environmental and social connection. The significant challenge for this initiative is to gain the sustained engagement of enough people to achieve real-world impact.

Ultimately, however, while the local to global public certainly have a critical part to play in addressing these threats, this does not diminish the responsibility of government and the private sector for safeguarding the future livelihood of the Great Barrier Reef.

Source: ‘Citizens of the Great Barrier Reef: going beyond our backyard to protect the reef’, Georgina Gurney, *The Conversation online*, March 9, 2018, <https://theconversation.com/citizens-of-the-great-barrier-reef-going-beyond-our-backyard-to-protect-the-reef-86858>.

CASE STUDY REVIEW

1. Using examples from the case study, justify why social media can be an effective way to undertake social action.
2. What does the article mean by ‘slacktivism’ and how does this impact on the effectiveness of taking social action?
3. Explain how the Fight for our Reef initiative are seeking ‘real action’ and what does this mean?
4. What are the range of options for taking social action identified in the article?
5. Discuss how this example of social action could promote health and wellbeing.

13.10.2 Social action and the Sustainable Development Goals

Taking social action is important for the achievement of the Sustainable Development Goals (SDGs). If people are not aware of the problems that exist and the extent and causes of poverty, inequality and climate change, then the need for governments and decision makers to take action may not be considered a priority. Public pressure is important to build political will. When the community demands change and it is driven by people, positive change is possible.

The SDGs in Action app has been developed that can be easily downloaded onto any mobile device. It provides information on each of the goals and the targets, provides videos to help explain each goal, provides facts and figures, pushes out news items and provides ideas about how people can achieve the goals, create an action and invite others to participate. People can choose the goals that are important to them and automatically receive notifications about them and find actions and events they can join to support the goals.

13.10.3 Social enterprises and purchasing power

There are now many examples of social enterprises. Their development has been motivated by a sense of needing to make a change to existing practices. Social enterprises aim to raise awareness of the injustices that exist in the world and harness social action to make changes. Two examples are Who Gives a Crap and Fairtrade.

Who Gives a Crap

Who Gives a Crap is a social enterprise that was implemented in 2012 to overcome a global problem. Three university graduates became aware that 2.3 billion people across the world don't have access to a toilet and that diarrhoea-related diseases accounted for over half of sub-Saharan African hospital beds and killed 900 children under five every day. They developed a plan for addressing the problem. Their plan was to sell environmentally friendly toilet paper in a way that was financially sustainable and helped address water and sanitation issues. They launched a **crowdfunding campaign**. To generate awareness and raise the funds necessary to establish their enterprise, one of the creators sat on a toilet and refused to move until they had raised enough pre-orders to start production. Within 50 hours they had raised over \$50 000.

Their first product was delivered in March 2013. For every roll of toilet paper sold, they donate 50 per cent of the profits to a portfolio of non-profit organisations working to deliver sanitation and hygiene projects in developing countries. This includes WaterAid, which delivers sanitation projects in East Timor and Papua New Guinea, and Sanergy, which is working in Nairobi (Kenya) to build a sustainable public toilet infrastructure for urban slums. In the first three years, this social enterprise had donated almost \$500 000.

This enterprise focused on changing people's purchasing habits rather than their behaviour, and using purchasing power to bring about change.

Who Gives a Crap's impact

Since the establishment in 2012, Who Gives a Crap has donated \$8.3 million to help fund hygiene and sanitation projects, saved thousands of trees as a result of using forest-friendly paper products and saved millions of litres of water by making the products using eco-friendly materials. By using environmentally cleaner processes to manufacture the products, they have also avoided thousands of tonnes of greenhouse gases being emitted into the environment.

FIGURE 13.43 The SDGs in Action app can be easily downloaded onto any mobile device and provides information on how people can get involved in taking social action for each of the SDGs.



Crowdfunding campaign
funding a project or venture by raising many small amounts of money from large numbers of people, usually via the internet

FIGURE 13.44 Who Gives a Crap is a social enterprise that uses purchasing power to address the issues of poor sanitation and hygiene in low-income countries.



Fairtrade

Fairtrade is an example of social action being taken to address poverty and some of the problems that come with it. Their goal is to help producers in low- and middle-income countries achieve better trading conditions and to promote sustainable farming. Fairtrade is an independent certification system that offers farmers and workers in low- and middle-income countries a better deal when they trade their products.

The existing trade arrangements disadvantage small farmers, who don't have the resources to compete against the large multinational corporations that tend to dominate world markets and product processing and distribution. As a result, small farmers tend to be excluded. This puts them at greater risk of poverty as they are unable to receive an income for their produce. In addition, if they can sell their products, the large multinational corporations often dictate the price they will pay for them, which also disadvantages small farm owners. Many agricultural products are sold by auction, which means when a product is in plentiful supply its selling price goes down. This means having more product to sell does not guarantee more income. There is also wide fluctuations or changes in prices, making markets unstable.

Many low- and middle-income countries can produce goods more cheaply than high-income countries, as labour costs tend to be cheaper and, in some cases, countries do not have the same workplace laws in place to protect workers. When people live in poverty, young children and women often have no choice but to work for very low wages and in unregulated and unsafe environments.

This means that children are unable to go to school and are often victims of abuse and long working hours.

Fairtrade works to provide millions of producers around the world with better opportunities to sell their product and improve their working and living conditions by providing an alternative approach to international trade. It is a trading partnership aimed at achieving sustainable development for excluded and disadvantaged producers.

How the Fairtrade system works

Under the Fairtrade system, small producers are organised into cooperatives or groups, and buyers and sellers establish long-term, stable relationships. Buyers must pay the producers the minimum Fairtrade price, or more, and when the market price is higher, they must pay the market price.

FIGURE 13.45 Fairtrade takes action to address poverty in low-income countries by ensuring small-scale farmers get a fair price for their products and receive a social premium.



Farmers and workers are therefore guaranteed a fair price for their produce, which helps protect them from changes in world market prices. Fairtrade also works with farmers to help them produce in more sustainable and ecological ways. Buyers must also pay a social premium. This social premium helps improve standards of living by providing funds that can be invested in community healthcare, education and training. Producer groups also re-invest their Fairtrade premium back into their farms and businesses. They buy capital, such as trucks and machinery, and provide organic farming education for their members.

Products covered by Fairtrade

In Australia, the main Fairtrade Certified products available are chocolate, coffee, tea, cotton, and on a smaller scale, sports balls, rice, quinoa and roses. There are many brands that have Fairtrade Certified products. Fairtrade Certified chocolate, tea and coffee products can be found in most supermarkets and independent grocers.

By purchasing Fairtrade Certified products, people are helping to reduce poverty through their everyday shopping. They are also helping to end the use of child labour, as it is prohibited under the Fairtrade Certification standards. If enough consumers begin purchasing Fairtrade products, retailers are more likely to stock and sell these products. Some larger supermarket chains began carrying Fairtrade products, such as coffee, after individual consumers exercised their power by writing postcards requesting they sell these products. This is an example of the power of individuals taking social action. Other examples include organising an awareness raising activity in your community, school or workplace, or writing to local food outlets and asking them to stock Fairtrade products.

FIGURE 13.46 In Australia, Fairtrade Certified products include coffee, rice and chocolate.



CASE STUDY

Share the love: Valentine's Day

The global cocoa market's value is estimated at almost \$10 billion but, unfortunately, under conventional, non-Fair Trade production, many cocoa farmers still live in poverty and child labor is often widespread. With Fair Trade cocoa, farmers are paid a fair wage for their work, additional funds are routed back to farmers to invest in their communities and child labor is prohibited.

How you can take action?

Fair Trade initiated a campaign that coincided with Valentine's Day in 2020 that encouraged people to give Fair Trade flowers, chocolate and greeting cards, host an event to raise awareness and send valentines directly to Fair Trade cocoa farmers in Ecuador. There were four ways that people were encouraged to show their support.

1. Send Valentines to Cocoa Farmers in Ecuador

Partnering with Alter Eco, a Fair Trade Company, people were able to send a note of personal thanks and gratitude directly to cocoa farmers in Ecuador. This could have been an individual valentine, or messages from family, friends, colleagues or classmates. Through the Fair Trade website, people could:

- Print valentine templates or make their own custom cards.
- Sign-up to host an event
- Download information on Fair Trade cocoa, flowers and anti-trafficking advocacy and child labor to create conversations and raise awareness
- Ask people to stop by and write down a message of support or thanks.
- Send valentines back to Fair Trade for them to be forwarded on.

2. Give Fair Trade Chocolate and Fundraise with Fair Trade

3. Send a Virtual Valentine

Show support for farmers and artisans by sharing the love on social networks, writing a digital thank you and sharing.

4. Educate Friends, Family & Peers

Use the resources to educate others about the benefits of choosing Fair Trade products

Source: Adapted from: <https://fairtradecampaigns.org/2020/01/share-the-love-valentines-day-2020/>

CASE STUDY REVIEW

1. List examples of social action identified in the case study.
2. Justify why the examples of social action identified in question 1 would be effective in bringing about change.
3. Describe how social action in the case study could promote health and wellbeing.

13.10 Activities

1. Access the **Who Gives a Crap** weblink and worksheet in the Resources tab and then complete the worksheet
2. Download the SDGs in Action app and select one of the Goals. Outline the resources that are provided in the app.
3. Using the SDGs in Action app, explain the World's Largest Lesson. Why might this resource be useful in bringing about change in order to meet the targets?
4. Visit your local supermarket and check how many Fairtrade products are stocked. Suggest actions that could be taken to encourage supermarkets to stock these products

on Resources

-  **Digital document** Who Gives a Crap worksheet (doc-32245)
-  **Weblink** Who Gives a Crap

13.10 Exercises

learnon

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au. A **downloadable solutions** file is also available in the resources tab.

13.10 Quick quiz



13.10 Exercise

13.10 Exam questions

Select your pathway

■ LEVEL 1

1, 2, 3, 4

■ LEVEL 2

5, 6, 7

■ LEVEL 3

8, 9

Test your knowledge

1. What is meant by taking social action?
2. Why is taking social action effective in bringing about change?
3. List four reasons why people take social action.
4. Outline three different ways that people can take social action.
5. What is meant by using purchasing power to bring about social change? Give one example.
6. Explain the two social enterprises described in this subtopic and outline how they work to bring about change.
7. Explain why the SDGs in Action app has been developed.

Apply your knowledge

8. 'Buying products from producers in low-income countries at a fair price is a more efficient way of promoting sustainable development than traditional charity and aid.' Explain whether you agree or disagree with this statement.
9. Select one global health issue and discuss social action that could be taken to bring about change to improve health and wellbeing.

13.10 Quick quiz

on

13.10 Exercise

13.10 Exam questions

Question 1 (2 marks)

Identify two social change actions.

Question 2 (2 marks)

Outline two reasons why people take social action.

Question 3 (1 mark)

"Great news! Thanks to the thousands of emails being sent to companies through the Don't Palm Us Off campaign, all Nestlé Australia chocolate made in Australia now contains 100 per cent Certified Sustainable Palm Oil (CSPO)."

Source: <https://www.zoo.org.au/news/nestl-australia-is-using-sustainable-palm-oil>

From the source above, **identify** an example of which social change action.

Question 4 (1 mark)

This image is an example of which social change action?



Question 5 (2 marks)

UNICEF has revealed that as many as 150 children under five are dying each day in Myanmar, while 30 per cent suffer from moderate or severe malnutrition.

Source: *The Age*, 25 May 2017, page 14.

Outline two social change actions that could be undertaken to address the concerns raised by UNICEF.

More exam questions are available in your learnON title.

13.11 KEY SKILLS

13.11.1 Analyse and evaluate the effectiveness of aid programs in promoting health and wellbeing, and human development



tlvd-1933

KEY SKILL Analyse and evaluate the effectiveness of aid programs in promoting health and wellbeing, and human development

Tell me

To address this skill, you need to study, in detail, one aid program implemented to address the SDGs and then apply your understanding of what makes an effective aid program to a range of unfamiliar contexts. The first part of the skill requires you to understand what makes an aid program effective. There are four main features that contribute to an effective aid program.

These include the following:

- *Ownership* — The program should be owned by the community and address their needs. If a program is owned by the community, it is likely to be meeting their needs and be implemented in a socioculturally appropriate way.
- *Focus on results* — The program is focused on bringing about improvements in health and wellbeing and human development and is therefore results focused.
- *Partnerships and collaboration* — The program includes partnerships, which help contribute to sustainability and long-term results.
- *Transparency and accountability* — There is a system in place to monitor the progress and publicise results to ensure the resources are being used appropriately.

The second part of the skill requires you to use these features to analyse an aid program that has been implemented and make judgements about (evaluate) its effectiveness. This includes being able to show an understanding of the purpose of the program and recognise the SDG/s being addressed. It is important to note that some programs will address more than one SDG.

The third part of the skill requires you to discuss how the aid program will promote health and wellbeing, and human development.

Show me

The following example can be used to demonstrate this skill. Read the information relating to the vaccination program that has been implemented in the Solomon Islands, and evaluate its effectiveness by:

- outlining the purpose of the program
- identifying the relevant SDG/s being addressed
- explaining how its implementation reflects the key features of effective aid
- describing how it promotes health and wellbeing, and human development.

A game changer for children in the Solomon Islands

Vaccines are responsible for saving millions of lives around the world. In countries like the Solomon Islands where reliable power supply and proper refrigeration of vaccines isn't always possible, UNICEF has partnered with the Solomon Islands Ministry of Health and Medical Services, government and the US Centers for Disease Control and Prevention to trial new ways to ensure that children get the vaccines they need.

There are a lot of challenges to deal with in ensuring that children in the Solomon Islands have access to vaccination programs. These challenges range from access to health facilities, limited vaccine availability and vaccine wastage due to frequent problems with the refrigerators (cold chain) among many other factors.

Rebecca Lima is a registered nurse from the Solomon Islands who serves rural communities, and recalls a couple of years ago a mother who had delivered her baby at home in the village walking hours with her husband

to the clinic where she was posted, to check if their child should receive the baby nila (vaccination). Due to a malfunctioning refrigerator a week earlier, they had to dispose of our hepatitis B and tuberculosis vaccines. She felt so sad and helpless hearing the father whispering to his wife that they don't have enough money to vaccinate their child elsewhere and they should go back to the village instead. These are the two most challenging vaccines, since they must be given 24 hours after birth. But many of the rural clinics face challenges with refrigeration problems, affecting storage and causing wastage. Even the outreach programs are limited by the challenges of carrying vaccine carriers and ice boxes.

Some mothers in rural communities also prefer home birth. Too many babies born at home miss getting the Hepatitis B and tuberculosis vaccines in time. In order to seek new solutions to this old problem, UNICEF's immunisation experts have been working with the Solomon Islands' Ministry of Health and Medical Services and the US Centers for Disease Control and Prevention to explore alternative means of vaccine distribution and storage. In 2015 a pilot project tested new evidence about the hepatitis B vaccine, which found that it is stable enough to be transported and stored without refrigeration (for a limited period of time) for the final leg of its journey to children in need. A special heat-sensitive sticker on the vaccine vial also ensures that quality is maintained and children are only given effective vaccines.

For countries like the Solomon Islands, where just 65 per cent of health facilities have well-functioning refrigerators and 15 per cent of births occur at home, this is a game changer; it means that even communities without reliable power supply or refrigeration can still store and administer the hepatitis B vaccine to newborn children. The results of the pilot study were impressive: it more than doubled the percentage of children vaccinated against hepatitis B at health facilities (an increase from 30 per cent to 68 per cent), and an even greater jump for children born at home (an increase from 4 per cent to 23 per cent).

During the outreach programs, it's easier to carry the vaccines, as the nurses can easily pack the vials in the general containers sold at the local stores, which is much lighter to carry compared to the larger and heavier cold boxes that make it difficult when trying to reach communities that can only be reached by foot.

Furthermore, the nurses managed to visit and vaccinate children born in villages in time because their visit was not dependent on the lifespan of the vaccine carrier. This is a great development in immunisation and there is hope that more of this will follow suit.

'If there is one wish, I'd wish that all vaccines can be kept without refrigeration like the hepatitis B that we piloted. We don't need to store it in a refrigerator so the vaccines were readily available at the clinic and there was no spoilage, making it available to newborn babies until the next batch of Hepatitis B vaccines arrives in almost a month's time,' said Rebecca.

About one in five Solomon Islanders have hepatitis B, resulting in a higher risk of liver cancer and cirrhosis, which leads to death. Being able to transport and store hepatitis B vaccines 'outside the cold chain' (the refrigerated distribution system used for most vaccines) will make a world of difference for children born in the Solomon Islands today.

Source: Adapted from: Tahu, A, 'A game changer for children in the Solomon Islands', UNICEF Pacific website, 15 June 2016.

This program is addressing SDG 3: Good health and wellbeing, in particular, ending the preventable deaths of newborns and those under five.¹ The purpose of the vaccination program in the Solomon Islands is to explore alternative means of vaccine distribution and storage to overcome the challenges to vaccination that include lack of access to health facilities, limited vaccine availability and vaccine wastage due to frequent problems with the refrigerators (cold chain).² The program is effective as it displays each of the four features of an effective aid program.³ The program is a partnership whereby UNICEF's immunisation experts have been working with the Solomon Islands' Ministry of Health and Medical Services and the US Centers for Disease Control and Prevention⁴ to develop alternative means of vaccine distribution to overcome the existing challenges. The program is meeting the needs of the community, as vaccination programs are being affected by a lack of access to healthcare facilities and vaccine wastage. The program has ownership by the community, as a local

1 The SDG being addressed in the program is clearly stated.

2 The purpose of the program is outlined and linked to information provided in the example.

3 A conclusion is made about the effectiveness of the program and is linked to the features of an effective aid program.

4 One of the features of an effective aid program is ensuring that programs are implemented through *partnerships and collaboration*. The partnership between UNICEF's immunisation experts, the Solomon Islands' Ministry of Health and Medical Services and the US Centers for Disease Control and Prevention is identified.

nurse is delivering the vaccinations to children and travelling to rural communities. The program is being delivered in a socioculturally appropriate way and shows further evidence of meeting the needs of the community. Similarly, the program is meeting the needs of the community as only 65 per cent of health facilities have well-functioning refrigerators and 15 per cent of births occur at home. The vaccines are also easier to carry and much lighter as the nurses can pack the vials in the general containers available from the local stores. This is particularly useful when they have to transport the vaccines to communities that can only be reached by foot.⁵

The Solomon Islands Ministry for Health and Medical Services is a partner in the program, which increases the likelihood of the program being sustainable. The program is results focused as it has a focus on improving health and wellbeing with around one in five Solomon Islanders suffering from hepatitis B, which is contributing to an increased risk of liver cancer and cirrhosis that leads to death.⁶ The results of the program have been monitored and reported, with the percentage of children being vaccinated against hepatitis B at health facilities more than doubling from 30 per cent to 68 per cent and the number of children born at home who had been vaccinated increasing from 4 per cent to 23 per cent.⁷

The vaccination program promotes health and wellbeing and human development. Hepatitis B affects almost one in five people in the Solomon Islands and by vaccinating children against the disease, levels of this infection are likely to reduce, which will reduce the incidence of liver cancer and cirrhosis of the liver, improving physical health and wellbeing. When children are free from disease, mothers, in particular, do not have to stay at home to care for sick children and can go to work and earn an income, which can be used to buy healthy food and water, provide adequate shelter and pay for healthcare, all of which promotes physical health and wellbeing. When parents are able to earn an income, there is money to enable children to attend school and gain an education, which increases their ability to find decent work. This increases social health and wellbeing. Being able to work and earn an income reduces the level of poverty within families and communities. This contributes to reduced stress and anxiety levels and assists people within these communities to have a more optimistic outlook on life improving mental health and wellbeing. Reduced poverty contributes to higher standards of living and empowers people to have control over the decisions that affect their lives. When people feel more empowered, they are also more likely to vote and play a more active role in the decisions that affect their community, all of which promotes human development.⁸

5 Another feature of an effective aid program is *Ownership*. The program is owned by the community, addresses the needs of the community and is delivered in a socioculturally appropriate way. This is outlined clearly.

6 There is a focus on improving health and wellbeing as the program has been linked back to hepatitis B, which affects almost one in five people in the Solomon Islands. This shows the program is *results focused*, which is another feature of an effective aid program.

7 The program is being monitored and reported, which shows *transparency and accountability*. This is another feature of an effective aid program.

8 How the program promotes health and wellbeing and human development is clearly outlined.

Practise the key skill

Read the information about the program in Niger below and then answer the following questions:

1. Use the information to identify the SDG/s being addressed in the program.
2. Evaluate the effectiveness of the program by:
 - a. outlining its purpose
 - b. explaining how its implementation reflects the key features of effective aid.
3. Describe how it promotes health and wellbeing and human development.

Climate-smart agriculture project to improve productivity and resilience of Niger's agriculture sector

The World Bank Board of Executive Directors on May 26 approved \$111 million in new financing to boost productivity in Niger's agriculture sector and improve its resilience to climate risks.

The Niger Climate-Smart Agriculture (CSA) Support project, which is the first World Bank project in Africa designed specifically to deliver climate smart agriculture — namely increased productivity, enhanced resilience and reduced greenhouse gas emissions — is aligned with the government of Niger's 'Nigeriens Nourish Nigeriens' (3N) Initiative. The 3N is Niger's national strategy to spur sustainable agricultural development and increase food and nutritional security.

The Niger CSA project will directly benefit around 500 000 farmers and agro pastoralists in 44 communities. It will increase distribution and use of improved, drought-tolerant seeds, and increase the number of farmers using irrigation. The project is also expected to expand the use of agroforestry and conservation agriculture techniques. It will promote the reclamation of degraded agro-pastoral land, livestock and other high potential value chains while improving smallholder's access to markets.

Climate change has already affected Niger's food security situation, as well as the more than 80 per cent of Nigeriens who depend on agriculture for their livelihood. Without action, Niger's agriculture sector will continue to be extremely vulnerable to climatic shocks, especially droughts. This new project advances climate-smart agriculture in Niger, and helps address the constraints that inhibit the productivity and resilience of its crop-livestock sector.

'To improve food security for all Africans and drive sustainable economic growth across the continent, African governments are making climate-smart agriculture a priority,' says Simeon Ehui, Practice Manager, World Bank Agriculture Global Practice. 'The Niger CSA project, which will help improve agricultural productivity, enhance resilience to climate shocks, and reduce carbon emissions intensity, is a big step for the World Bank's continuing collaboration with the country's agriculture sector.'

Source: 'Climate-smart agriculture project to improve productivity and resilience of Niger's agriculture sector', World Bank website, 26 May 2016.

13.11.2 Describe and justify ways of taking social action to promote health and wellbeing

tlvd-1934

KEY SKILL Describe and justify ways of taking social action to promote health and wellbeing

Tell me

To achieve this skill, it is important to understand that taking social action means doing something to help create positive change. There are many reasons why people undertake social action, and there are many ways to take social action. You need to understand and describe each of these.

The skill also requires you to justify why people might take social action and this can best be done by relating the social action to the issues being faced by a community, village or country.

The last part of the skill requires you to be able to explain how social action could promote health and wellbeing.

In applying this skill, you may be given an example of:

- social action and then be asked to justify why the social action was taken and how it promotes health and wellbeing
- a situation representing an issue that could relate to an SDG and then be asked to describe social action that could be taken, justify why and then describe how social action promotes health and wellbeing.

Show me

The following example can be used to demonstrate this skill. Read the information relating to the living conditions in India below.

- Describe and justify examples of social action that could be taken to bring about change in this community.
- Describe how this action could promote health and wellbeing.

The slums of Thane in India are home to approximately 340 000 people, many of whom have migrated from rural India to find work. The regular inflow of migrants has contributed to highly congested living conditions. Infrastructure is poor, sanitation and potable water supplies are strained. Despite the hope these families have for a better life in Thane, most families in the slums live in poverty. Food insecurity, low literacy and regular breaches of human rights are common.

Girls and women experience the greatest disadvantage. Families under financial pressure often privilege sons over daughters. Girls are kept home from school to do chores and display higher rates of malnutrition than boys. Women have little power in family and community life, are financially dependent on male family members, and domestic violence is common.

To bring about social change in this community in India there are a range of ways in which individuals can take social action. There are many non-government organisations who work in India and people can choose to donate money to any of these, such as World Vision, Caritas, Care Australia or Oxfam.⁹ Through the collective efforts of many who choose to donate, local agencies will have more resources to work with the women and families and the communities in Thane to change the living conditions and bring about gender equality. When girls are denied education, have no financial independence and are victims of violence, there are limited opportunities for women and the community to escape from poverty and achieve good health and wellbeing.¹⁰

Other examples of social action that could be taken include raising community awareness of the situation in India by conducting a fundraising and community awareness event at school or in the community. The local media could be invited to cover the event and write articles to increase the level of understanding.⁹ This helps bring greater awareness and more community pressure to governments in India to take action to bring about change.¹⁰

There are also many online events, competitions and petitions that people can sign up to and support.⁹ This support shows the international community is aware of the problem and puts greater pressure on governments to take action to address the issues in Thane.¹⁰ Many non-government organisations are based in India so people can contact these organisations and find out what is the best way to support the work being undertaken.⁹ This helps ensure the social action will have the greatest impact. Actions such as supporting a microfinance loan to women in Thane to help them establish a small business, providing books and pencils to children so they can use these to learn basic skills, and contributing to the building of a well and latrines might be appropriate actions.¹⁰

Taking social action to improve the situation in Thane can improve health and wellbeing. Supporting gender equality will provide women and girls with greater access to an education and improved knowledge and skills, and allows women to gain employment and earn an income. This improves social health and wellbeing through relationships formed at work. Having a job provides an income that can be used to purchase food, water and healthcare. This brings about improved physical health and wellbeing as illness and disease can be reduced. When people are healthy and have the resources to meet the needs of their family, they have a higher self-esteem and feel a sense of pride and achievement improving mental and emotional health and wellbeing. Healthy people

⁹ This shows one example of social action that could be taken.

¹⁰ The reason for this example of social action has been explained and justified.

have greater confidence, which empowers them to contribute to their community and brings about improved spiritual health and wellbeing. Eliminating violence against women also improves physical health and wellbeing and eliminates fear, which promotes emotional health and wellbeing.¹¹

11 How the social action could improve each dimension of health and wellbeing is discussed.

Practise the key skill

Read the following information about obstetric fistula and answer the following questions.

4. a. Describe and justify two examples of social action that could be taken to reduce obstetric fistula in low-income places such as Africa.
- b. Discuss how social action could promote health and wellbeing.

Obstetric fistula is a hole in the birth canal. It is caused by prolonged labour without quick and adequate medical help, usually a Caesarean section. The result for the mother is chronic incontinence (leaking urine); the baby is usually stillborn. 'The smell of leaking urine, faeces or both, is constant and humiliating, often driving the patients' family, friends and neighbours away.'

An untreated obstetric fistula can lead to chronic medical problems such as kidney disease, ulcerations and nerve damage in the legs. For \$400, surgery could repair the problem; however, most women who suffer it do not have this money, or are not even aware it can be fixed.

The condition is a particular problem in Africa, Asia, the Arab region and Latin America, with about 50 000 to 100 000 new cases occurring each year. As a wholly preventable problem, the fact that it is still endured reveals that the health system is failing these women. It affects the world's poorest women, who don't have access to proper medical services.

Source: Campaign to end fistula website, <http://www.endfistula.org/what-fistula>.

13.12 Review

13.12.1 Topic summary

13.2 Features of effective aid programs

- There are four features of an effective aid program: having ownership of the development priorities by the community, having a focus on results that bring about improvements in health and wellbeing and human development, putting in place partnerships for development and collaboration, and transparency and accountability.

13.3 Aid programs addressing SDG 1 No poverty

- The Nuton Jibon Livelihood program aims to address SDG 1: No poverty. It provides financial support to 2500 villages in Bangladesh and helps them to develop the skills necessary to escape poverty.

13.4 Aid programs addressing SDG 2 Zero hunger

- The Food Security and Agricultural Program in Burkina Faso helps to achieve SDG 2: Zero hunger. It helps improve food security by providing opportunities for farmers to own a plot of land by clearing and preparing areas of land for farming. They also receive technical expertise, training and better seed varieties.

13.5 Aid programs addressing SDG 3 Good health and wellbeing

- To achieve SDG 3: Good health and wellbeing, in Cambodia, women are being provided with access to sexual and reproductive health and wellbeing services designed to ensure that women understand the importance of a healthy pregnancy and the need to get regular antenatal checks during pregnancy. The program also provides information on contraception.
- The Evidence Action: Deworming the World program targets the poorest countries and provides wide-scale treatment to children in schools to prevent and treat worm infestations. This addresses SDG 3: Good health and wellbeing.
- The tobacco control program in the Philippines seeks to strengthen the country's capacity for tobacco control, and run sustainable tobacco control programs that protect people from the harmful effects of tobacco smoke. This program is linked to SDG 3: Good health and wellbeing.

13.6 Aid programs addressing SDG 4 Quality education

- To address SDG 4: Quality education, Zambia has introduced a children's literacy program that uses radio and mobile phones to develop mother-tongue reading materials and promotes parental engagement in reading using mobile phone technology.

13.7 Aid programs addressing SDG 5 Gender equality

- To achieve SDG 5: Gender equality, India's Barefoot College trains illiterate grandmothers to become solar engineers. The program provides access to solar powered electricity in remote and isolated communities in countries around the world.

13.8 Aid programs addressing SDG 6 Clean water and sanitation

- The water for communities program in Ghana is providing access to 20 litres of drinking water per person per day. This program helps achieve SDG 6: Clean water and sanitation.

13.9 Aid programs addressing SDG 13 Climate action

- The Kiribati Adaptation Program is focused on developing rainwater collection systems (rainwater tanks) to help Kiribati better prepare for and withstand climate related impacts. This program addresses SDG 13: Climate action.

13.10 Taking social action

- Social action is taken to bring about positive action and change.
- There are different ways that people can take social action, such as volunteering their time to raise funds for a non-government organisation, donating money to support the work of non-government organisations

after an emergency, signing online petitions, using purchasing power to buy products that support social change, lobby governments or organising a boycott.

- People take social action for a range of reasons, such as helping those who are less fortunate, ensuring the needs of all people are represented, eliminating discrimination, preventing harm and damage to the community or the environment and preserving something of historical or social value.
- To help people take social action to achieve the Sustainable Development Goals, an SDG in Action app has been developed.
- There are many social enterprises that use the purchasing power of people to influence decisions.
- Who Gives a Crap was established in 2012 and sells environmentally friendly toilet paper. For each roll of toilet paper sold, 50 per cent of the profits are given to a range of non-profit organisations which deliver water and sanitation projects in low-income countries.
- Fairtrade is an example of social action taken to help farmers get a fair price for their products and to eliminate child labour.
- Fairtrade certified products sold in Australia include chocolate, coffee, tea, cotton, sports balls, rice, quinoa and roses.

Resources

 **Digital document** Summary (doc-36148)

13.12.2 Key terms

Boycott refusing to buy or use the goods or services of a certain company or country as a protest

Civil society individuals and organisations in a society that are independent of the government

Collateral a security that is provided to guarantee the repayment of a loan

Cooperatives people who come together to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled business

Crowdfunding campaign funding a project or venture by raising many small amounts of money from large numbers of people, usually via the internet

Obstetric fistula a condition that is caused by complications associated with obstructed labour. The tissues between the woman's vagina and pubic bone are damaged by continuous pressure from the infant's neck trapped in the birth canal. The damaged tissue later falls off resulting in a hole through which the woman continuously leaks urine or faeces or both.

Outreach bringing services or information to people where they live or spend time

Stakeholders people, groups and organisations who are involved in, or affected by, a course of action

Subsistence self-sufficient farming carried out by individuals to provide food for themselves and their family

Suffragette movement the struggle to win women's right to vote and to take on leadership roles within the government. Often referred to as the women's rights movement.

13.12.3 Extended response: build your exam skills

tlvd-

2888 Use information from each of the five sources and your knowledge of effective aid programs to justify why programs that focus on providing clean water and sanitation in schools should be a priority for the international community, taking into consideration:

- The relationship between the achievement of at least two other SDGs
- Features of effective aid programs that must be considered when implementing such programs
- The contribution to health and wellbeing and human development
- Ways in which individuals can engage with the community to take social action to bring about change.

10 marks

TIPS

The Health and Human Development examination may include up to five sources of information for you to interpret, analyse and link to address the question being asked.

Use the same strategies regardless of the number of sources by highlighting information relevant to each of the components of the question. When writing your response, you can address each of the components of the question in any order you wish as long as your response is organised, clearly written and concise.

- In this example, read the information provided in each source and identify relevant links to the achievement of any of the SDGs.
- From this, select two SDGs that are best represented across a range of sources that connect to clean water and sanitation. This will give you more examples to use in your response.
- Use the examples you have identified to help you explain how the two SDGs you have selected would be achieved through collaborative actions taken to provide clean water and sanitation.

Demonstrate your understanding of effective aid by explaining the features and connecting them to the source material provided.

- You are required to justify the importance of focusing on safe water and sanitation through aid programs.
- This can be achieved through connections to health and wellbeing and human development.
- Use examples from the source material to connect your discussion to the improvement in each dimension of health and wellbeing.

Finally, think about the connection between your justification of the importance of focusing on clean water and sanitation and the need for communities to take social action. Show your understanding of the meaning of social action through your discussion and explain different ways the community can take social action. Use the example in the source material to discuss how social action could be effective in bringing about social change.

Source 1

Girls and women are most often responsible for hauling water, especially in rural areas. As a result, lack of easy access to water for household usage has a detrimental effect on school attendance. In Ghana, an analysis of four rounds of data from the Demographic and Health Surveys between 1993 and 2008 found that reducing the time to fetch water by half increased girls' school attendance by about 7 percentage points. An analysis of 24 sub-Saharan African countries estimated that 13.5 million women and 3.4 million children spend more than 30 minutes each day collecting water for household use; in all countries, girls were more likely than boys to have the responsibility of fetching water.

Source: Adapted from: <https://www.ungei.org/sites/default/files/GEMR-Gender-Review-Meeting-Commitments-to-Gender-Equality-in-Education-2018-eng.pdf>, p. 33

Source 2

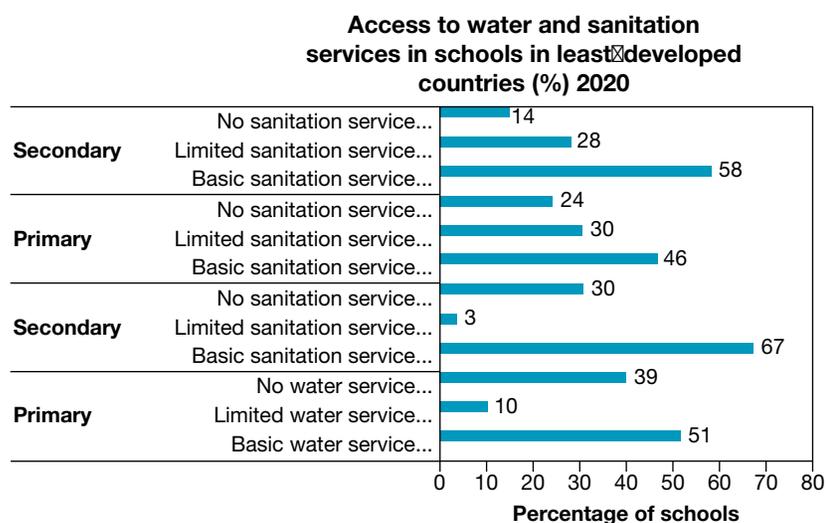
In Eswatini (a landlocked country in South Africa), the World Bank is working with a number of local communities and the government to implement a project to expand water and sanitation services. The provision of a clean water supply and decent sanitation will assist with socio economic development and help people live

dignified lives and be healthy. On top of the productivity gains through reduction in time spent for collection of water, reduced sickness time and reduced burden on health care. The project will also create more than 300 temporary jobs during the construction phase and 15 permanent jobs during the operation of the scheme. Furthermore, all of the operators will be women who will receive training including basic numeracy/accounting.

A cross section of stakeholders and affected communities: women, men, youth, and people with special needs were consulted and their views were integrated into the project design. In the consultation process, women indicated that collection of water takes up to 2 hours per trip, longer during the dry season. The lack of safe, separate and private sanitation and washing facilities in schools is also one of the main factors preventing girls from attending school and is responsible for ongoing school closures due to irregular water supply.

Source: Adapted from: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/KINGDOM_ESWATINI_-_Manzini_Region_WSSP_PAR.pdf, p. 16

Source 3



Source: <https://data.unicef.org/resources/dataset/drinking-water-sanitation-hygiene-database/>

Source 4



Source: <https://onlinelibrary.wiley.com/doi/full/10.1002/wat2.1405>; photo by Randy Colas on Unsplash.

Source 5

For around \$34 per student, The Water Project is able to work with local well drillers to build wells at schools and other central locations so kids can stay in school and women can gain a voice in their community. Our goal is to bring clean, sustainable water supplies to within a half mile (1 km) of a village. By making the process of collecting water more time-efficient, we're giving children (especially girls) a chance to get back in to the classroom to break the cycle of poverty for themselves. You can be a part of the solution to end the gender gap in classrooms across the developing world and help children stay in school.

Source: <https://thewaterproject.org/why-water/education>

13.12 Exercises

learnON

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au.

13.12 Exam questions

13.12 Exam questions

Question 1 (3 marks)

Source: VCE 2019, Health and Human Development Exam, Q.11; © VCAA

Who is at risk of climate change?

Everyone

- Those living in poverty, as well as women, children and the elderly.
- Outdoor workers and people living with chronic medical conditions.
- Children are the most vulnerable due to long exposure to environmental risks.

Everywhere

- Those living in megacities, small island developing states and other coastal, mountainous and polar regions.
- Countries with weak health systems will be least able to prepare and respond.

Source: text from infographic from World Health Organization, www.who.int/globalchange/climate/infographics/en/

Outline and **justify** one example of social action that could be taken to address climate change.

Question 2 (4 marks)

Source: VCE 2018, Health and Human Development Exam, Q.11.b; © VCAA

The AMA [Australian Medical Association] wants the Government to use tax policy to force up the prices of sugar-sweetened drinks to change behaviour ...

For the AMA, taxing them is far from the single solution to the obesity or diabetes epidemics ...

Source: Emily Clark, 'The AMA wants sugar-sweetened drinks taxed, but will it happen?', ABC News, 7 January 2018,

Describe and **justify** two examples of social actions that could be taken to address the increasing rates of childhood obesity.

Question 3 (12 marks)

Read the following information:

Lao People's Democratic Republic's (pdr) first ever flash mob inspires climate action

Vientiane: Families pushing strollers, teenagers taking selfies, determined fitness fanatics young and old running and stretching, tourists marvelling at the Mekong River for the first time and snack carts peddling cold drinks.

This usually sedate scene at Vientiane's Mekong recreation riverside area was shaken up last Saturday afternoon when, out of nowhere, 50 people put on Lao PDR's first-ever flash mob with a strong message on climate action.

Flash mobs are public gatherings where people perform an unusual or seemingly random song or dance and then scatter. These performances are typically organised through social media. Lao PDR's first-ever flash mob stopped

passers-by in their tracks, as actors wearing giant red masks and green costumes appeared out of nowhere to perform the Lao legend around the Kat Khao Vine and Pu Nye, Nya Nye. In this story from the sixteenth century, an old couple sacrifices themselves by cutting down a vine sent from the gods to block out the sun to punish humans for not taking care of their natural environment. This street theatre piece morphed into a dance, which gradually grew as more and more dancers joined in. Finally, a group of 50 dancers moved and grooved together to raise awareness on climate change and Sustainable Development Goal 13 on climate action.

Stage Director Mrs Thiane Khamvongsa came up with the concept of using an old story to tackle a modern problem. 'Theatre and storytelling is a fantastic way to bring dynamic groups of people together to tackle common issues like climate change. For our young performers, working together with the United Nations Volunteers, the Fanglao Dance Company and other organisations has been a great example of how we can reach a common goal and raise awareness on big issues if we work together,' said Ms Kamvongsa. The unsuspecting audience was encouraged by the Climate Action Flash mob to personally take urgent action to combat climate change and its impacts by volunteering to protect the environment, with practical tips for everyday action shared via flyers linking to the United Nations in Lao PDR website.

The United Nations Volunteers in Lao PDR was one of the organisations behind the Climate Action Flash mob. The surprise performance was organised to coincide with International Volunteers Day to encourage people to become everyday heroes for climate action. Ms Chelsey Parish from United Nations Volunteers in Lao PDR was one of the flash mobbers, 'Volunteering is a powerful way for individuals to get involved in their communities and help fight climate change.'

'You can contribute to achieving the future you want by volunteering in your village, your school, around your home as an individual, or even by forming your own volunteer group. It can also be really fun, like our flash mob today,' said Ms Parish.

The moral of the Kat Khao Vine legend is to respect the natural environment. This story is more relevant today than ever before, as the devastating effects of climate change are being felt around the world.

Source: Adapted from UNDP in Lao PDR website, 'Lao People's Democratic Republic's (PDR) first-ever flash mob inspires climate action', 26 November 2016.

- a. **What** is meant by social action? **2 marks**
- b. **Describe** the type of social action undertaken by the Lao PDR flash mob. **2 marks**
- c. **Explain** two reasons to justify why the flash mob was taking social action. **4 marks**
- d. **Outline** how this example of social action could promote health and wellbeing. **4 marks**

Question 4 (11 marks)

Read the following information:

Afghanistan is a landlocked country situated in central and southern Asia. According to the Human Development Index, Afghanistan is one of the poorest countries in the world. The average life expectancy is estimated to be around 60 years for both sexes. Despite significant improvements in the coverage and quality of health services, Afghan health and wellbeing indicators remain below average for low-income countries. It has one of the highest maternal mortality rates, as well as the highest infant mortality rate, in the world. Afghanistan has one of the highest levels of child malnutrition in the world, with about 40.9 per cent of children under five suffering from chronic malnutrition while both women and children suffer from high levels of vitamin and mineral deficiencies.

- a. **Describe** two examples of social action that could be taken to reduce the level of child malnutrition in Afghanistan. **4 marks**
- b. **Justify** why taking social action is important. **3 marks**
- c. **Discuss** how social action could promote health and wellbeing. **4 marks**

Question 5 (12 marks)

Read the following information:

Supporting Mali's women to adapt to climate change

Gardening is a common side job for women in Mali, along with making products from the shea tree or jujube fruits. Traditionally men are the main income earners, supporting their families with cash crops such as cotton, millet or rice. However, climate change has led to more drought and shorter rainy seasons in Mali. As a result, cash crops are suffering, putting pressure on women to support their families with alternative incomes. They are required not only to work but also to secure enough water and food for the family.

'The problem of water is critical, which is why gardening, which was always our favourite activity, is almost impossible to achieve,' says Fatoumata Diarra, a member of the women's cooperative in the village of Massantola, located in western Mali, just north of the capital, Bamako.

The Mali National Directorate of Agriculture has partnered with the United Nations Development Program (UNDP) to strengthen agricultural communities and empower women to mitigate the social and economic consequences of climate change. In Massantola, the project has supported Diarra's cooperative to clear a plot for gardening and provide access to water.

'With the help of the project, we installed a fence and a well that runs on solar energy,' explains Diarra. 'We can sell some of the vegetables we harvest to supply the cooperative's fund and use another part for feeding the family, which helps fight malnutrition.'

A solar-powered platform was provided to the women's collective to help process grain into flour, a very time-intensive process necessary for cooking. In addition, UNDP supports women's collectives in Mali, training them in sustainable agriculture and land management practices, as well as supplying seeds and tools, and establishing funds to help build alternative sources of income to local communities.

Source: Adapted from 'Supporting Mali's women to adapt to climate change', UNDP website, 8 September 2016.

- a. **List** the SDGs that are addressed in this program. **1 mark**
- b. **Outline** the purpose of the program. **1 mark**
- c. Select two features of effective aid and **explain** how they are reflected in the program. **4 marks**
- d. **Describe** how the program promotes health and wellbeing. **3 marks**
- e. **Explain** how the program promotes human development. **3 marks**

Resources

- | | | |
|---|------------------------------|--|
|  | Digital document | Key terms glossary (doc-36135) |
|  | Exam question booklet | Topic 13 Exam question booklet (eqb-0067) |
|  | Interactivities | Crossword (int-6903)
Definitions (int-6904) |

RESOURCE SUMMARY

This is a summary of the digital resources you will find online for Topic 13 to help support your learning and deepen your understanding. When you see these icons next to an image or paragraph, go to learnON to access video eLessons, interactivities, weblinks and other support material for this topic.

Digital documents

- [13.1](#) Key terms glossary (doc-36135)
- [13.10](#) Who Gives a Crap worksheet (doc-32245)
- [13.12](#) Summary (doc-36148)
Key terms glossary (doc-36135)

Exam question booklets

- [13.1](#) Topic 13 Exam question booklet (eqb-0067)
- [13.12](#) Topic 13 Exam question booklet (eqb-0067)

Teacher-led videos

- [13.2](#) Features of effective aid (tlvd-0269)
- [13.10](#) Taking social action (tlvd-0264)
- [13.11](#) Key skill: Analyse and evaluate the effectiveness of aid programs in promoting health and wellbeing, and human development (tlvd-1933)
Key skill: Describe and justify ways of taking social action to promote health and wellbeing (tlvd-1934)
- [13.12](#) Extended response: build your exam skills (tlvd-2888)

Weblink

- [13.10](#) Who Gives a Crap

Interactivities

- [13.12](#) Crossword (int-6903)
Definitions (int-6904)

To access these online resources, log on to www.jacplus.com.au.

School-Assessed Coursework Unit 4

AREA OF STUDY 2: HEALTH AND THE SUSTAINABLE DEVELOPMENT GOALS

Outcome 2

Analyse relationships between the SDGs and their role in the promotion of health and human development, and evaluate the effectiveness of global aid programs.

School-Assessed Coursework 4 online only

To answer questions online and to receive **immediate feedback** and **sample responses** for every question, go to your learnON title at www.jacplus.com.au, or download the assessment as a Word document from your Resources tab.

Resources

 **Digital document** School-Assessed Coursework (doc-34826)

Key knowledge

- Rationale and objectives of the UN's SDGs
- Key features of SDG 3 'Ensure healthy lives and promote wellbeing for all at all ages'
- Relationships between SDG 3 and SDGs 1, 2, 4, 5, 6 and 13 that illustrate collaboration between the health sector and other sectors in working towards health-related goals
- Priorities and work of the WHO
- The purpose and characteristics of different types of aid including emergency, bilateral and multilateral
- Features of Australia's aid program including its priority areas and the types of partnerships involved
- The role of non-government organisations in promoting health and wellbeing and human development
- Features of effective aid programs that address the SDGs, and examples of effective implementation, with details of one such program including:
 - its purpose and the SDG/s addressed
 - details of implementation and the partnerships involved
 - contribution to promoting health and wellbeing, and human development
- Ways in which individuals can engage with communities and/or national and international organisations to take social action that promotes health and wellbeing

Key skills

- Describe the objectives of the UN's SDGs and justify their importance
- Describe key features of SDG 3 and analyse its relationships with other SDGs in collaborative approaches to improving health and wellbeing and human development globally
- Explain the priorities and the work of the WHO and discuss how the WHO priorities are reflected in different scenarios
- Describe and justify different types of aid
- Explain and evaluate the role of non-government organisations in promoting health and wellbeing and human development globally
- Analyse and evaluate the effectiveness of aid programs in promoting health and wellbeing and human development
- Describe and justify ways of taking social action to promote health and wellbeing

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School-Assessed Coursework Unit 4

AREA OF STUDY 2: HEALTH AND THE SUSTAINABLE DEVELOPMENT GOALS

Outcome 2

Analyse relationships between the SDGs and their role in the promotion of health and human development, and evaluate the effectiveness of global aid programs.

Structured questions

Total marks: 50 marks

Time duration: 60 minutes

Key knowledge

- Rationale and objectives of the UN's SDGs
- Key features of SDG 3 'Ensure healthy lives and promote wellbeing for all at all ages'
- Relationships between SDG 3 and SDGs 1, 2, 4, 5, 6 and 13 that illustrate collaboration between the health sector and other sectors in working towards health-related goals
- Priorities and work of the WHO
- The purpose and characteristics of different types of aid including emergency, bilateral and multilateral
- Features of Australia's aid program including its priority areas and the types of partnerships involved
- The role of non-government organisations in promoting health and wellbeing and human development
- Features of effective aid programs that address the SDGs, and examples of effective implementation, with details of one such program including:
 - its purpose and the SDG/s addressed
 - details of implementation and the partnerships involved
 - contribution to promoting health and wellbeing, and human development
- Ways in which individuals can engage with communities and/or national and international organisations to take social action that promotes health and wellbeing

Key skills

- Describe the objectives of the UN's SDGs and justify their importance
- Describe key features of SDG 3 and analyse its relationships with other SDGs in collaborative approaches to improving health and wellbeing and human development globally
- Explain the priorities and the work of the WHO and discuss how the WHO priorities are reflected in different scenarios
- Describe and justify different types of aid
- Explain and evaluate the role of non-government organisations in promoting health and wellbeing and human development globally
- Analyse and evaluate the effectiveness of aid programs in promoting health and wellbeing and human development
- Describe and justify ways of taking social action to promote health and wellbeing

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Question 1 (11 marks)

- a. The UN Sustainable Development Goals were established in 2016. With reference to the rationale and objectives of the SDGs, describe why the SDG program is important. **6 marks**

In 2015, 844 million people still lacked even basic drinking water, 2.3 billion people lacked basic sanitation and 892 million people practiced open defecation.

Source: <https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-6-clean-water-and-sanitation.html>

- b. Identify the Sustainable Development Goal reflected in the statement above. **1 mark**
- c. Explain how making further improvements in this SDG may help to achieve two key features of Sustainable Development Goal 3: Good health and wellbeing. **4 marks**

Question 2 (8 marks)

A key feature of SDG 3: Good health and wellbeing is to reduce maternal mortality to less than 70 per 100 000 live births.

- a. What is meant by maternal mortality? **1 mark**

A second key feature of SDG 3 is to ensure universal access to sexual and reproductive healthcare services.

- b. Explain two ways that achieving universal access to sexual and reproductive healthcare services could reduce maternal mortality and improve health and wellbeing for mothers globally. **6 marks**
- c. Name the other SDG for which ensuring universal access to sexual and reproductive health is a key feature. **1 mark**

Question 3 (3 marks)

Identify the three strategic priorities and goals of the World Health Organization.

Question 4 (12 marks)

- a. Using examples, explain the purpose and characteristics of emergency (humanitarian) aid. **3 marks**
- b. What kind of aid is evident in **SOURCE 1**? **1 mark**



- c. Explain two reasons why the Australian Government provides this kind of aid to countries like Papua New Guinea. **4 marks**
- d. Identify two priorities of Australia's aid initiatives and explain how they are evident in the **SOURCE 1**. **4 marks**

Question 5 (7 marks)

- a. Why does Australia provide aid to non-government organisations (NGOs)? **2 marks**
- b. Identify one NGO and explain how they promote health and wellbeing and human development in a low-income country. **5 marks**

Question 6 (5 marks)

Incorporating two features of effective aid, describe a program that has been implemented to address one of the Sustainable Development Goals.

Question 7 (4 marks)

Describe two ways that high school students could take action to promote positive social change globally.

END OF TASK

GLOSSARY

- Acidification** decrease in the pH levels of the ocean that occurs when carbon dioxide in the atmosphere reacts with the sea water
- Acquired immune deficiency syndrome (AIDS)** the most advanced stage of HIV infection
- Adolescent/ce** a stage of the lifespan that commences at puberty and ends when a person turns 20 years of age. It is a biological marker that signals the transition to adulthood and is included as part of youth.
- Aid** assistance given to countries or communities in the event of a crisis or for the development of long-term sustainable improvements
- Allied health services** health services provided by trained health professionals who are not doctors, dentists or nurses. Examples include services provided by physiotherapists, psychologists and occupational therapists.
- Anaemia** a condition characterised by a reduced ability of the body to deliver enough oxygen to the cells due to a lack of healthy red blood cells
- Antenatal** relates to the medical care given to pregnant women before their babies are born
- Antenatal care** healthcare provided to women during pregnancy and just after birth
- Antioxidants** compounds in foods that neutralise free radicals
- Aquifer** an underground layer of rock, sediment or soil that contains water
- Asphyxia** interrupted breathing leading to low levels of oxygen in the body, unconsciousness and often death
- Assistive technology** a device, system or design that allows an individual to perform a task that they would otherwise be unable to do, or increase the ease and safety with which a task can be performed
- Asylum seeker** a person seeking international protection and whose refugee status is yet to be determined
- Atherosclerosis** the build-up of plaque on blood vessel walls, making it harder for blood to get through
- Bilateral aid** the provision of aid from the government of one country to the government of another country
- Biodiversity** the variety of different plants, animals and micro-organisms, their genes and the ecosystems of which they are a part
- Biological factors** factors relating to the body that impact on health and wellbeing, such as genetics, body weight, blood pressure, cholesterol levels, birth weight
- Biomedical approach to health** focuses on the physical or biological aspects of disease and illness. It is a medical model practised by doctors and health professionals and is associated with the diagnosis, treatment and cure of disease.
- Birth asphyxia** a condition in which a baby's brain and other organs do not get enough oxygen before, during or immediately after birth. It can cause temporary or permanent damage.
- Body mass index (BMI)** a statistical measure of body mass calculated by dividing weight (in kilograms) by height (in m²)
- Boycott** refusing to buy or use the goods or services of a certain company or country as a protest
- Bubonic plague** an infectious disease that is caused by bacteria transmitted to humans by fleas from infected rats
- Bulk billing** when the doctor charges only the schedule fee. The payment is claimed directly from Medicare so there are no out-of-pocket expenses for the patient.
- Burden of disease** a measure of the impact of diseases and injuries, specifically it measures the gap between current health status and an ideal situation where everyone lives to an old age free of disease and disability. Burden of disease is measured in a unit called the DALY (VCAA).
- Caesarean section** a surgical procedure in which a baby is born through a cut made in the mother's abdominal wall and the wall of the uterus rather than through the normal birthing process
- Cholesterol** a type of fat required for optimal functioning of the body that in excess can lead to a range of health concerns including the blocking of the arteries (atherosclerosis). Can be 'bad' low-density lipoprotein (LDL) or 'good' high density lipoprotein (HDL).
- Chronic condition** any disease or condition that lasts a long time (usually longer than six months). It usually can't be cured and therefore requires ongoing treatment and management. Examples include arthritis and asthma.

Civic participation refers to involvement in a community group such as a union, professional association, political party, environmental or animal welfare group, human and civil rights group, or body corporate or tenants' association

Civil society individuals and organisations in a society that are independent of the government

Collateral a security that is provided to guarantee the repayment of a loan

Communicable diseases infectious diseases that are transmitted from the environment; including through air, water, food and other infected organisms (including other humans)

Congenital malformations refers to physical defects developing either in the uterus or dating from birth

Cooperatives people who come together to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled business

Crowdfunding campaign funding a project or venture by raising many small amounts of money from large numbers of people, usually via the internet

CT scans computed tomography scan, which is a specialised x-ray taken from many different angles to build a three-dimensional picture of the body

Degradation the deterioration of the environment through the depletion of resources, such as clean air, water and soil, the destruction of ecosystems, and the extinction of wildlife

Dental caries decay of teeth caused by a breakdown in the tissues that make up the tooth

Dermatologist a medical doctor with specialist training relating to conditions of the skin

Desalination the process of removing salt, especially from sea water so that it can be used for drinking or irrigation

Dimensions of health and wellbeing these are the components that make up an individual's overall health and wellbeing. The dimensions are physical, social, emotional, mental and spiritual.

Disability-adjusted life year (DALY) a measure of burden of disease. One DALY is equal to one year of healthy life lost due to illness and/or death. DALYs are calculated as the sum of the years of life lost due to premature death and the years lived with disability for people living with the health condition or its consequences (AIHW, 2018).

Discrimination when a person or group of people is treated differently than other people, often a result of factors such as race, religion, sex, sexual orientation and gender identity.

Disease a physical or mental disturbance involving symptoms, dysfunction or tissue damage

Displaced people those who are forced to leave their home because of war or persecution

Double burden of disease when conditions associated with both poverty and wealth exist side-by-side in one community, such as undernutrition and obesity

Dynamic continually changing

Economic sustainability ensuring that average incomes in all countries are adequate to sustain a decent standard of living and continue to rise in line with inflation and living costs in the future

Ecosystem a community of living things and the non-living components of the environment in which they live. An ecosystem can include plants, animals, micro-organisms, water, air, soil and rocks.

Emergency aid rapid assistance given to people or countries in immediate distress to relieve suffering during and after emergencies such as wars and natural disasters, for example floods, tsunamis or earthquakes. Emergency aid is also called 'humanitarian aid'.

Emotional health and wellbeing relates to the ability to express emotions and feelings in a positive way. Emotional health and wellbeing is about the positive management and expression of emotional actions and reactions as well as the ability to display resilience. Emotional health and wellbeing is the degree to which an individual feels emotionally secure and relaxed in everyday life

Energy balance when the amount of energy consumed is the same as the amount of energy required. Energy balance contributes to neither weight gain or weight loss.

Energy dense (foods) foods that contain significant amounts of fat, carbohydrates and/or protein, therefore contributing large amounts of energy to the diet

Environmental factors the physical surroundings in which we live, work and play. Environmental factors include workplaces, housing, roads and geographical access to resources such as healthcare.

Environmental sustainability ensuring the natural environment is used in a way that will preserve resources into the future

Equilibrium a state of balance and/or calmness

Essential medicines a range of medicines that meet the priority healthcare needs of the population

Extreme poverty living on less than US\$1.90 per day

Extremism belief in and support for ideas that are very far from what most people consider correct or reasonable

Fertilisation the fusing of a sperm and egg cell. Marks the beginning of pregnancy. Also known as conception.

Fertility rates the number of live births per 1000 women aged 15–49 in one year

First trimester the first three months of pregnancy

Foetal alcohol spectrum disorder a group of conditions that can occur in a person whose mother drank alcohol during pregnancy. Problems that may occur in babies exposed to alcohol before birth include low birth weight, distinctive facial features, heart defects, behavioural problems and intellectual disability.

Food insecurity when healthy, affordable food is not obtainable

Food security ‘the state in which all persons obtain nutritionally adequate, culturally appropriate, safe food regularly through local non-emergency sources’ (VicHealth, 2008)

Fortified (foods) when a nutrient has been artificially added to food to increase its nutritional value

Free radicals molecules formed when oxygen is metabolised. Free radicals can damage healthy body cells and increase the risk of diseases such as cardiovascular disease and cancer.

Gender equality when males and females have equal rights, responsibilities and opportunities

Genetic predisposition an increased likelihood of developing a particular disease based on a person’s genetic makeup (often indicated by a person’s family history of disease)

Glacier a slowly moving mass or river of ice formed by the accumulation and compaction of snow on mountains or near the poles

Globalisation the process whereby boundaries between countries are reduced or eliminated allowing individuals, groups and companies to act on a global scale. It can be described as transforming the different societies of the world into one global society. A reduction in barriers to trade, communication and transport contributes to this process.

Governance the structures and processes that are designed to ensure accountability, transparency, rule of law, inclusiveness and broad-based participation in society

Greenhouse gases gases that contribute to the greenhouse effect by absorbing heat. Carbon dioxide and chlorofluorocarbons (used in the manufacture of aerosol sprays) are examples of greenhouse gases.

Gross Domestic Product (GDP) a measure that reflects the economic state of a country. GDP is the value of all goods and services produced in a country in a 12-month period.

Gross National Income (GNI) the total value of goods and services a country’s citizens produce, including the value of income earned by citizens who may be working in an overseas country

Health-adjusted life expectancy (HALE) the average length of time an individual at a specific age can expect to live in full health; that is, time lived without the health consequences of disease or injury (AIHW, 2018)

Health and wellbeing the state of a person’s physical, social, emotional, mental and spiritual existence, characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged

Health indicators standard statistics that are used to measure and compare health status (e.g. life expectancy, mortality rates, morbidity rates)

Health literacy the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions

Health promotion the process of enabling people to increase control over, and to improve, their health

Health status ‘An individual’s or a population’s overall health, taking into account various aspects such as life expectancy, amount of disability and levels of disease risk factors.’ (AIHW, 2008)

Hospital separation episodes of hospital care that start with admission and end at transfer, discharge or death

Human development creating an environment in which people can develop to their full potential and lead productive, creative lives according to their needs and interests. It is about expanding people’s choices and enhancing capabilities (the range of things people can be and do), having access to knowledge, health and a decent standard of living, and participating in the life of their community and decisions affecting their lives (adapted from the UN Development Programme, 1990).

Human Development Index a tool developed by the United Nations to measure and rank countries' levels of social and economic development. It provides a single statistic based on three dimensions — a long and healthy life, knowledge and a decent standard of living — and four indicators — life expectancy at birth, mean years of schooling, expected years of schooling and Gross National Income per capita.

Human immunodeficiency virus (HIV) an infection that results in the gradual depletion and weakening of the immune system, resulting in increased susceptibility to other infections such as pneumonia and tuberculosis

Human rights relates to the freedoms and conditions to which every person is entitled

Humanitarian assistance *see* Emergency aid

Hunger the continuing lack of food needed for an active and healthy life

Hypertension high blood pressure

Illness a subjective concept related to personal experience of a disease or injury

Incidence refers to the number (or rate) of new cases of a disease/condition in a population during a given period

Income test a determination of whether an individual or family is eligible for government assistance based on their level of income

Indigenous Australians Australians of Aboriginal or Torres Strait Islander origin

Indivisible unable to be divided or separated

Infant mortality rate the rate of deaths of infants before their first birthday, usually expressed per 1000 live births

Infectious diseases diseases caused by micro-organisms, such as bacteria, viruses, parasites or fungi, that can be spread, directly or indirectly, from one person to another

Infirmity the quality or state of being weak or ill; often associated with old age

Infrastructure the physical and organisational structures, facilities and systems (e.g. buildings, roads, power supplies) needed for the operation of a society

Interdependent mutually reliant on each other

Intersectoral collaboration having groups from many sectors, such as government, health and the private sector, working together to achieve a common goal

Latrine a simple communal toilet facility, often a trench dug in the ground or a pit

Legislation relating to a law or set of laws

Life expectancy the number of years of life, on average, remaining to an individual at a particular age if death rates do not change. The most commonly used measure is life expectancy at birth (AIHW, 2018).

Low birth weight weighing less than 2500 grams (2.5 kilograms) at birth

Malaria a communicable disease that is transmitted via infected mosquitoes

Malignant abnormal cells that invade and destroy nearby healthy tissue

Marketing the activities of a company associated with selling a product or service, including advertising, selling and delivering products to people

Maternal mortality death of a mother during pregnancy, childbirth or within six weeks of delivery

Maternal mortality ratio the number of mothers who die as a result of pregnancy, childbirth or associated treatment per 100 000 women who give birth

Menopause when the menstrual cycle stops permanently, ending the ability of a female to reproduce

Mental health and wellbeing the current state of wellbeing relating to a person's mind or brain and the ability to think and process information. A mentally healthy brain enables an individual to positively form opinions, make decisions and use logic

Metastasise when cancer has spread from one site to another

Microfinance small, low-cost financial services for poor people that involve low-interest loans to develop small businesses

Millennium Development Goals a set of goals that were introduced in 2000 to guide global action until 2015

Mnemonics acronyms that can be used to assist in remembering lists

Modern contraceptive methods technological advances designed to overcome biology and enable couples to have sexual intercourse at any mutually-desired time

Morbidity ill health in an individual and levels of ill health within a population (often expressed through incidence and prevalence) (AIHW, 2018)

Mortality the number of deaths in a population in a given period (AIHW, 2018)

Mortality rate (sometimes referred to as ‘death rate’) the measure of the proportion of a population who die in a one-year period (usually per 100000)

Multilateral aid aid provided through an international organisation, such as the World Bank, United Nations or World Health Organization. Multilateral aid combines donations from several countries and then distributes them to the recipients.

Neonatal period the first 28 days after birth

Neural tube defects conditions characterised by damage to the brain and spine, and to the nerve tissue of the spinal cord during prenatal development. Examples include spina bifida and anencephaly.

New public health an approach to health that expands the traditional focus on individual behaviour change to one that considers the ways in which physical, sociocultural and political environments impact on health. Also referred to as the social model of health.

Non-communicable diseases conditions that are usually long-lasting and generally progress slowly. Non-communicable diseases are not spread through the environment and include cardiovascular disease, cancer, respiratory diseases and diabetes.

Non-government organisation (NGO) non-profit organisations work to promote health and wellbeing and human development and they operate separately from governments.

Non-government organisation (NGO) aid NGOs take different approaches to aid, which can include specific projects or programs, emergency aid, volunteering, education and development.

Non-renewable resources resources that are not replenished in a short period, so once they are used they are not available for future generations. Non-renewable resources include coal, natural gas, petroleum and nuclear substances.

Nutrient dense (foods) foods that contain a large amount of nutrients such as vitamins and minerals

Obstetric fistula a condition that is caused by complications associated with obstructed labour. The tissues between the woman’s vagina and pubic bone are damaged by continuous pressure from the infant’s neck trapped in the birth canal. The damaged tissue later falls off resulting in a hole through which the woman continuously leaks urine or faeces or both.

Obstetric haemorrhage heavy bleeding occurring as a result of pregnancy or childbirth

Official Development Assistance (ODA) financial assistance provided by donor government agencies to low- and middle-income countries or to multilateral aid agencies. Also known as aid.

Old public health government actions that focused on changing the physical environment to prevent the spread of disease, such as providing safe water, sanitation and sewage disposal, improved nutrition, improved housing conditions and better work conditions

Open defecation using open spaces rather than a toilet to pass human waste

Ottawa Charter for Health Promotion an approach to health developed by the World Health Organization that aims to reduce inequalities in health. It reflects the social model of health and provides five action areas that can be used as a basis for improving health status, all of which are centred around three strategies for health promotion which are enabling, mediating and advocacy.

Outreach bringing services or information to people where they live or spend time

Paleo diet a diet characterised by consuming foods available to humans during the Paleolithic period (from around 2.5 million to 12 000 years ago). The Paleo diet restricts the consumption of dairy, refined grains such as bread and pasta, and refined sugar such as chocolate and soft drink. The main components of the Paleo diet are meat, fish, nuts, vegetables and seeds.

Palliative care an approach designed to improve the quality of life of patients with a life-threatening illness with little or no prospect of a cure. This is achieved through the prevention and relief of suffering and the treatment of pain.

Pandemic the spread of infectious disease through human populations across a large region such as multiple continents or worldwide. COVID-19 is the most recent example of a pandemic, affecting almost every country.

Pathogens bacteria, viruses and other microbes that can cause disease

Patient co-payments the payment made by the consumer for health products or services in addition to the amount paid by the government

Periodontitis a condition characterised by inflammation and infection of the tissues that support the teeth

PET scan involves having an injection of a small amount of radioactive material, which enables a scanner to build up a picture of the body

Physical health and wellbeing relates to the functioning of the body and its systems; it includes the physical capacity to perform daily activities or tasks

Poverty not having the resources to meet basic needs such as food, clothing and shelter

Premium the amount paid for insurance

Prevalence the total number or proportion of cases of a particular disease or condition present in a population at a given time (AIHW, 2008)

Primary production the process of producing natural products for human use such as plants and animals

Private sector part of a country's economic system that is run by individuals and companies, rather than the government

Productivity relates to the efficiency of production of goods and services. Productivity is measured by the amount of output produced per unit of input

Protected Special Category visa these visas are held by some people who arrived in Australia on a New Zealand passport and meet other specific criteria

Public health the ways in which governments monitor, regulate and promote health status and prevent disease

Quarantine laws that require a person, animal, plant or any type of material that might be carrying an infectious agent to be kept isolated to prevent the spread of disease

Renewable resources resources that are replenished naturally and over a relatively short period, and include crops, water, oxygen, forests and fish stocks

Sanitation the process of eliminating contact between humans and hazardous wastes, including human and animal faeces and urine, solid wastes, domestic wastewater (sewage and grey water), industrial wastes and agricultural wastes

Schedule fee the amount that Medicare contributes towards certain consultations and treatments. The government decides what each item is worth and that's what Medicare pays. Doctors and private hospitals may choose to charge more than the schedule fee.

Schistosomiasis a worm infection that occurs when people swim, bathe or have contact with fresh water contaminated with human excreta

Secular not concerned with religion or religious matters

Self-assessed health status 'An individual's own opinion about how they feel about their health, their state of mind and their life in general.' (AIHW, 2018) It is commonly sourced from population surveys.

Sistergirls Aboriginal and Torres Strait Islander transgender women (assigned male at birth) who have a distinct cultural identity and often take on female roles within the community, including looking after children and family (2015, Sisters & Brothers NT)

Social exclusion the segregation that people experience if they are not adequately participating in the society in which they live

Social health and wellbeing relates to the ability to form meaningful and satisfying relationships with others and the ability to manage or adapt appropriately to different social situations. It also includes the level of support provided by family and within a community to ensure that every person has equal opportunity to function as a contributing member of the society

Social isolation refers to individuals who are not in regular contact with others

Social justice can be defined in a number of ways, but the common underlying theme is equal rights for all, regardless of personal traits such as sex, class and income, ethnicity, religion, age or sexual orientation

Social model of health an approach that recognises improvements in health and wellbeing can only be achieved by directing effort towards addressing the physical, sociocultural and political environments of health that have an impact on individuals and population groups

Social protection measures measures put in place to prevent individuals and families from suffering from poverty because of a crisis or another unexpected event. Measures include the provision of healthcare, and income security for children, those who become sick or disabled and the elderly.

Social sustainability creating an equitable society that meets the needs of all citizens and can be maintained indefinitely

Sociocultural factors the social and cultural conditions into which people are born, grow, live, work and age. These conditions include socioeconomic status, social connections, family and cultural norms, food security, early life experiences, and access to affordable, culturally appropriate healthcare.

Socioeconomic status the social standing of an individual in comparison to others in that society. It is based on education, income and occupation.

Solarium a unit that uses UV radiation to create a tan

Spiritual health and wellbeing relates to ideas, beliefs, values and ethics that arise in the minds and conscience of human beings. It includes the concepts of hope, peace, a guiding sense of meaning or value, and reflection on your place in the world.

Stakeholders people, groups and organisations who are involved in, or affected by, a course of action

Stateless a situation where a person does not have citizenship of any country. These individuals have no protection of their human, social or political rights and cannot access education or healthcare or have freedom of movement.

Stillbirth the birth of an infant that has died in the womb

Subjective influenced by or based on personal beliefs, feelings or opinions

Subsistence self-sufficient farming carried out by individuals to provide food for themselves and their family

Subsistence farming self-sufficient farming carried out by individuals to provide food for themselves and their family

Suffragette movement the struggle to win women's right to vote and to take on leadership roles within the government. Often referred to as the women's rights movement.

Sustainability meeting the needs of the present without compromising the ability of future generations to meet their own needs

Sustainable agriculture the capacity of agricultural practices over time to provide sufficient food in ways that are economically efficient and profitable, socially responsible and environmentally sound

Sustainable development development that meets the needs of the present without compromising the ability of future generations to meet their own needs

Syndrome X (also called metabolic syndrome) when a person exhibits a range of factors that increase their risk of cardiovascular disease and type 2 diabetes. Examples of the factors include abdominal obesity, high cholesterol and insulin resistance.

Syphilis a bacterial infection usually spread by sexual contact. Without treatment, it can damage the heart, brain or other organs, and can be life threatening. It can be passed from mother to an unborn child.

Trachoma a bacterial infection of the eye that can cause complications including blindness

Transnational involving several nations

Trend a general change or movement in a particular direction. For example, trends indicate a significant increase in obesity rates over the past 20 years.

Tropical diseases a group of diseases that mainly occur in tropical and subtropical environments and are most common in countries where people lack access to safe water and sanitation

Under-five mortality rate (U5MR) the number of deaths of children under five years of age per 1000 live births (WHO, 2008)

Urban slums a settlement, neighbourhood or region comprised of housing that does not provide the essential conditions required to live a healthy life

UV index a scale from 0–11+ that provides an indicator of how intense UV radiation will be. Sun protection methods are recommended for any UV index score of 3 and over

Vector a living thing that carries and transmits pathogens to other living things

Vector control actions taken to control and eradicate the carriers of disease and infection

Venereal disease a disease contracted by sexual intercourse with a person already infected; a sexually transmitted infection

Years lost due to disability (YLD) a measure of how many healthy years of life are lost due to disease, injury or disability

Years of life lost (YLL) a measure of how many years of expected life are lost due to premature death

INDEX

2 Spirits program 378

A

Aboriginal Quitline 349

Aboriginal and Torres Strait Islander peoples

biological factors 185–186

birth weight 186

blood pressure 185

body weight 185

cultural norms 189

early life experiences 188–189

environmental factors 189–190

food insecurity 188

glucose regulation 185

health and wellbeing 10–11

housing 189–190

infrastructure 190

sanitation 190

social exclusion 187–188

sociocultural factors 186–189

socioeconomic status (SES) 186

unemployment 186

water 190

Aboriginal Road to Good Health 378

accessible health system 327–328

acidification 546, 572

acquired immune deficiency syndrome

(AIDS) 444, 493, 596–598

deaths 2000 and 2019 597

deaths and illness 596–598

epidemic 598

adolescent 591

adult mortality and

morbidity 445–454

age-based discount 314

age-standardised death rates 302

for chronic obstructive pulmonary disease 305

for injury and poisoning 306

for lung cancer 336

from infectious and parasitic diseases 303

of respiratory system 305

age-standardised rates 69–76

aid 686

air pollution 618

alcohol 109, 616

and Australian Burden of Disease Study 111–114

and cancer 110

and high body mass index 110

and injuries 110

and liver disease 110

and mental health issues 110

and prenatal/infant health outcomes 111

burden of disease 617

consumption 172

impact on burden of disease 112

impact on health status 113

alcoholism 109

allied health services 301, 334

anaemia 145, 145–146, 150

low intake of iron and 145

antenatal 310, 347

antenatal care 591

antioxidants 123, 151

antiretroviral drugs (ART) 596

anti-smoking health promotion

campaigns 276, 346

anxiety 18

aquifers 545, 572

arthritis, high body mass index 118

asphyxia 72, 95

assistive technology 307, 334

asthma 82, 244–245

high body mass index and 118

housing and 176, 208

smoking and 105

asylum-seekers 553, 572

atherosclerosis 104, 116, 135, 151

Australia

burden of disease in 85–87

patterns in morbidity and mortality in 221

Australian aid 700–702

bilateral aid 687

emergency or humanitarian

aid 687

features of 694

multilateral aid 696

non-government organisations 690

partnerships 695–696

Red Cross 717

types of 686

World Vision 712

Australian Burden of Disease Study

alcohol and 111–114

high body mass index and 119–122

high intake of fat and 135–136

smoking and 105–108

underconsumption of dairy and 130–131

underconsumption of fruit and 127

underconsumption of vegetables and 125

Australian Dietary

Guidelines 383–392

Australian Government's aid

agriculture, fisheries and water 708–710

building resilience 705

education 703

effective governance 706

empowering women and girls 704

gender equality 310

health 703

infrastructure 701

international competitiveness 702

trade facilitation 702

Australian Guide to Healthy

Eating 54

Australian Red Cross 717

disasters, impact 719

health and wellbeing 720

meeting humanitarian needs, crises 719

Australia's health system

access and equity 327–330

discovery of vaccines 251–252

funding and sustainability 317

life expectancy 300–301

Medicare 298

National Disability Insurance

Scheme 307

old public health 249–253

patterns of mortality 302–307

Pharmaceutical Benefits

Scheme 304–305

private health insurance 311

shift to health promotion 253

B

balanced ecosystem 42

band aid approach 315

behavioural factors 321

beliefs 19

Better Health Channel 8

biodiversity 512–513, 534, 544, 547, 572

biological factors 160, 228

- for Aboriginal and Torres Strait Islander peoples 185–186
- for Australia's people living outside major cities 214
- for male and female population groups 195–196
- for socioeconomic status population groups 203
- biomedical approach to health 255–259
- advances in medical technology 256
- advantages and disadvantages of 256–258
- diseases of cardiovascular system 256
- dominance of medical science 256
- lung cancer 277–278
- role in diagnosing, treating and curing illness and disease 320
- strengths and limitations of 343
- birth asphyxia 592
- birth weight 164
 - of Aboriginal and Torres Strait Islander peoples 186
 - of Australia's people living outside major cities 214
 - of socioeconomic status population groups 203
- Black Spot program 361
- blood cells 146
- blood cholesterol 162
 - of Australia's people living outside major cities 214
- blood pressure 161–162
 - of Aboriginal and Torres Strait Islander peoples 185
 - of Australia's people living outside major cities 214
 - of male and female population groups 195
 - of socioeconomic status population groups 203
- body mass index (BMI) 115, 151
- body weight 161
 - of Aboriginal and Torres Strait Islander Peoples 185
 - of Australia's people living outside major cities 214
 - of male and female population groups 195
 - of socioeconomic status population groups 203
- BowelScreen Australia logo* 323
- boycott 53–55
- bubonic plague 250, 287
- bulk billing 299, 334
- burden of disease 83, 95, 447–450, 549
 - attributed to tobacco 106
 - equation for calculating 83
 - impact of alcohol on 113
 - impact of high body mass index on 120
 - impact of high intake of fat on 137
 - impact of high intake of salt on 139
 - impact of low intake of fibre on 145
 - impact of low intake of iron on 148
 - impact of smoking on 107
 - impact of underconsumption of dairy on 130
 - impact of underconsumption of fruit on 127
 - impact of underconsumption of vegetables on 126
 - in Australia 85–87
 - inequality and discrimination 468–476
 - trends in 87–88
 - years lost due to disability 84–85
 - years of life lost 84
- C**
- caesarean section 591
- cancer 304
 - alcohol and 110
 - high body mass index and 116
 - smoking and 104
 - underconsumption of fruit and 127
 - underconsumption of vegetables and 124
- carbon dioxide emissions 440–441
- cardiovascular disease 549
 - high body mass index and 116
 - high intake of fat and 135
 - high intake of salt and 138
 - low intake of fibre and 144
 - smoking and 104
 - underconsumption of dairy and 129
 - underconsumption of fruit and 127
 - underconsumption of vegetables and 124
- cardiovascular diseases 301, 304
- cardiovascular system diseases 256
- child mortality rates 73
- children
 - deaths of 302
 - end preventable deaths 592–595, 594–595
- health and wellbeing 593
 - mortality and morbidity 444–447
- cholesterol 116, 151, 162
- chromosomal abnormalities 72
- chronic condition 9, 55
- chronic obstructive pulmonary disease (COPD) 105
- civic participation 31, 55
- civil society 744
- climate 180
 - of Australia's people living outside major cities 216
- climate change 181
 - environmental sustainability 515
 - extreme weather events 542
 - health and wellbeing 542
 - of Australia's people living outside major cities 216
 - rising sea levels 543–544
 - weather patterns, extreme weather events 547–550
- Closing the Gap 35
- collateral 759
- colorectal cancer
 - high intake of fat and 135
 - low intake of fibre and 144
 - underconsumption of dairy and 129
- communicable diseases 31, 55, 444, 493
 - AIDS 596–598
 - hepatitis 606–608
 - malaria 598–600
 - neglected tropical diseases 603–606
 - tuberculosis 601–602
- confidence 18
- conflict 552–553
- congenital malformations 72, 95
- cooperatives 756, 813
- countries
 - economic characteristics 432–434
 - high-, middle- and low-income countries 431–434
- COVID-19
 - digital technologies 564
 - Human Development Index 527
 - impact on people's livelihoods 33
 - tourism 560
- crowdfunding campaign 57
- CT scans 338, 347
- cultural norms 172
 - for Aboriginal and Torres Strait Islander peoples 189
 - for male and female population groups 197

- D**
- dairy, underconsumption of 129
 - and Australian Burden of Disease Study 130–131
 - and cardiovascular disease 129
 - and colorectal cancer 129
 - and dental caries 130
 - and osteoporosis 129
 - and type 2 diabetes 129
 - impact on health status and burden of disease 130
 - Deadly Choices initiative 36–37
 - degradation 583
 - dental caries 130, 151
 - high intake of sugar and 140–141
 - underconsumption of dairy and 130
 - dental disease, high intake of sugar 140–141
 - Department of Foreign Affairs and Trade (DFAT) 694
 - dermatologists 32, 82
 - desalination 545, 572
 - dietary change, challenges
 - attitudes and beliefs 405–406
 - cooking skills 69
 - education, nutrition knowledge 409
 - family, culture, society and religion 410
 - food marketing and media 410–412
 - food security 407
 - health and wellbeing factors 412
 - personal preference 405
 - time constraints and convenience 407
 - dietary improvements, Australia 418
 - digital technologies
 - challenges 566
 - health and wellbeing 564
 - reduce the gender gap 639–641
 - dimensions of health and wellbeing 13, 55
 - emotional health and wellbeing 15–17
 - interrelationships between 23, 50
 - mental health and wellbeing 17–18
 - physical health and wellbeing 13
 - social health and wellbeing 14–15
 - spiritual health and wellbeing 19–21
 - disability-adjusted life year (DALY) 83, 95, 603
 - discrimination 468, 493
 - disease 6, 11, 55
 - disease burden 549
 - displaced people 552, 572
 - double burden of disease 493
 - Driver Reviver program 361
 - dynamic 8, 55
- E**
- early life experiences 173
 - of Aboriginal and Torres Strait Islander peoples 188–189
 - of Australia's people living outside major cities 215
 - of socioeconomic status population groups 206
 - economic country classification 430–431
 - economic sustainability 502–503, 534
 - economic growth 505
 - innovation and diversity, industries 504
 - job creation 505
 - trade 505–506
 - ecosystems 512, 534, 546, 572, 583
 - stable 41–42
 - education 37, 169
 - socioeconomic status population groups 204–205
 - educational resources, nutrition Australia 399
 - Healthy Eating Pyramid 400–403
 - nutrition seminars and workshops 400
 - publication of recipes 400
 - electricity 180
 - emotional health and wellbeing 15–17, 55
 - vs. mental health and wellbeing 18–21
 - end hunger 627–630
 - energy balance 45
 - energy dense 124, 151
 - environmental characteristics
 - adequate housing 439
 - adequate infrastructure 439
 - carbon dioxide emissions 440–441
 - food security 439
 - high-income countries 444, 494
 - low-income countries 432, 433, 438, 488
 - middle-income countries 432, 435, 439
 - safe water and sanitation 439
 - environmental factors 176, 228
 - for Aboriginal and Torres Strait Islander peoples 189–190
 - for Australia's people living outside major cities 215–217
 - for male and female population groups 197–198
 - for socioeconomic status population groups 206–207
 - environmental pollution 619–620
 - environmental sustainability 512, 534
 - biodiversity 512–513
 - climate change 515
 - natural resources 513–514
 - three dimensions 515–516
 - waste removal and pollution 514–515
 - equality vs. equity 45–46
 - equilibrium 6, 55
 - equity 45, 329–332
 - vs. equality 45–46
 - essential medicines 586
 - external air pollution 619
 - extreme poverty 433, 493, 583, 623
 - extremism 583
- F**
- fatal vs. non-fatal burden
 - burden attributable to alcohol use 111
 - burden attributable to high body mass 120
 - burden attributable to high cholesterol by 136
 - burden attributable to low vegetable intake 125
 - burden attributable to tobacco use 105
 - burden attributable to underconsumption of fruit 128
 - fat, high intake of 133
 - and Australian Burden of Disease Study 135–136
 - and cardiovascular disease 135
 - and colorectal cancer 135
 - and high body mass index 135
 - and type 2 diabetes 135
 - impact on health status and burden of disease 137
 - types of 134
 - Feedin' the Mob 379
 - female genital mutilation (FGM) 473–479
 - fertilisation 165, 228
 - fertility rates 301, 347

- fibre, low intake of 143
 - and cardiovascular disease 144
 - and colorectal cancer 144
 - and high body mass index 143
 - and type 2 diabetes 144
 - impact on health status and burden of disease 145
 - types of 142
 - first trimester 600
 - fisheries 44, 707
 - Fitzroy Stars Football Club (FSFC) 379
 - foetal alcohol spectrum disorder 189, 228
 - food 37–38
 - food insecurity 172, 228
 - of Aboriginal and Torres Strait Islander peoples 188
 - food marketing and media 410–412
 - food security 37, 67, 172–173, 228, 628
 - of Australia’s people living outside major cities 215
 - of socioeconomic status population groups 205
 - forests 44
 - fortified 129, 151
 - free radicals 124, 151
 - fruit, underconsumption of 126
 - and Australian Burden of Disease Study 127
 - and cardiovascular disease, cancers and neural tube defects 127
 - and high body mass index 127
 - impact on health status and burden of disease 127
 - funding 317–320, 321
 - G**
 - gender equality 437, 493, 508
 - gender identity, health status 475–476
 - gender stereotypes 172, 197
 - general practitioners (GPs) 79
 - genetic predisposition 161, 228
 - genetics
 - male and female population groups 196
 - geographic location
 - of Australia’s people living outside major cities 215–216
 - of socioeconomic status population groups 206–207
 - glaciers 542, 572
 - global goals 582
 - globalisation 478, 493, 542, 572
 - alcohol 480–481
 - health status and 480–481
 - processed foods 481–482
 - tobacco 478–479
 - global trends 568
 - glucose 162
 - glucose regulation 162–164
 - of Aboriginal and Torres Strait Islander peoples 185
 - of Australia’s people living outside major cities 214
 - of male and female population groups 195
 - of socioeconomic status population groups 203
 - greenhouse gases 542, 572
 - Gross Domestic Product (GDP) 434, 493
 - Gross National Income (GNI) 430, 493, 505, 517
- H**
- health
 - data show improvements in 340
 - health-adjusted life expectancy (HALE) 64–66, 95, 443
 - health and wellbeing 6, 30, 31, 32, 33, 55, 584
 - Aboriginal and Torres Strait Islander peoples’ perspectives on 10–11
 - climate change 542
 - conflict 552–553
 - digital technologies 564
 - dimensions of 7, 13
 - dynamic and subjective nature of 9, 48
 - global context 531
 - healthy lives, wellbeing 586–590
 - impact on 552–553
 - Indigenous 76
 - mass migration 553–556
 - particular global trends 568
 - sea level rise 544–547
 - tourism 559
 - weather patterns and extreme weather 548
 - world trade 557–558
 - healthcare 40
 - access to 174, 322
 - health expenditure 319
 - health indicators 62, 95
 - health literacy 169, 228
 - health promotion 313, 326
 - lung cancer 336–337
 - shift to 313
 - health promotion programs 323
 - health-related aids 301
 - health status 62, 95
 - biological factors, variations in 160
 - differences in 183–184
 - environmental factors, variations in 176
 - impact of alcohol on 113
 - impact of high body mass index on 120
 - impact of high intake of fat on 137
 - impact of high intake of salt on 139
 - impact of low intake of fibre on 145
 - impact of low intake of iron on 148
 - impact of smoking on 107
 - impact of underconsumption of dairy on 130
 - impact of underconsumption of fruit on 127
 - impact of underconsumption of vegetables on 126
 - improvements in 343
 - indicators 62, 91
 - of Australians, data to describe and evaluate 91
 - of Australia’s people living outside major cities 212–214, 217
 - of male and female population groups 194–195, 198–199
 - of socioeconomic status population groups 201–202, 209
 - sociocultural factors, variations in 168
 - using social and biomedical approaches to health 335–338
 - variations between population groups, health information 223
 - health system and workforce 321–322
 - Healthy Eating Advisory Service 397
 - Healthy Eating Pyramid 400–403
 - Healthy Lunchbox Week 399–400
 - hepatitis 606–608
 - epidemic of 607–608
 - prevention 607
 - types of 606
 - hepatitis A and E 606
 - hepatitis B and C 606
 - high body mass index 115
 - alcohol and 110
 - and arthritis and osteoporosis 118
 - and asthma 118
 - and Australian Burden of Disease Study 119–122

- high body mass index (*Continued*)
 and cancer 116
 and cardiovascular disease 116
 and kidney disease 117
 and maternal health conditions 119
 and mental health issues 118
 and type 2 diabetes 118
 high intake of fat and 135
 high intake of sugar and 139
 impact on burden of disease 120
 impact on health status 121
 low intake of fibre and 143
 underconsumption of fruit and 127
 underconsumption of vegetables and 124
- high-density lipoprotein (HDL) 135
- high-income countries
 characteristics of 431–434
 environmental characteristics *see* environmental characteristics
 social characteristics *see* social characteristics
- homelessness 549
- hormones 165–166
- hospitals 79, 320
- hospital separation 79, 95
 causes of 80
- housing 176–177
 for Aboriginal and Torres Strait Islander peoples 189–190
 for socioeconomic status population groups 208–209
- human development 517, 534
 case study 520–521
 elements critical to 520
- Human Development Index (HDI) 523, 534
 advantages 525
- human immunodeficiency virus (HIV) 444, 493, 596
 deaths and illness 596–598
 infections, 2000 and 2019 597
- human rights 444, 470, 474, 495
- hunger 549, 583
- hygienic birthing practices 250
- hypertension 116, 151, 161
 high intake of salt and 138
- I**
- illicit drugs 617
 burden of disease 617
- illness 11–12, 55
 as continuum 11
 dynamic and subjective nature of 48
- Immunise Australia Program 323
- impaired glucose regulation 162
- incentives
 private health insurance 313–314
- incidence 76, 95
- income 40–41, 169
 of socioeconomic status population groups 204–205
- income test 313, 334
- Indigenous Australians 183, 228
- Indigenous health and wellbeing 76
- indivisible 584
- indoor air pollution 618–619
- infant mortality rate 71, 71–72, 95
- infant welfare services 310
- infectious diseases 302–303, 347, 549
 free testing for 322
 smoking and 105
- infirmity 6, 55
- information and communication technologies 180
- infrastructure 41, 178–179, 179–180, 228
 for Aboriginal and Torres Strait Islander peoples 190
 of Australia's people living outside major cities 215
- in-hospital expenses 300
- injuries 306–307
 and alcohol 110
- interdependent 584
- intersectoral collaboration 321–322, 347
- iodine, deficiencies 629
- iron, deficiencies 629
- iron, low intake of
 and anaemia 145
 impact on health status and burden of disease 148
- K**
- kidney disease, high body mass index 117
- L**
- latrine 458, 495
- Learn Earn Legend! 377
- legislation 5, 19, 82
- life expectancy 64–66, 95, 300–301, 309, 347, 442–443
- Lifetime Health Cover 313–314
- liver disease, alcohol 110
- long-term unemployment 169
- low birth weight 164, 228
- low-density lipoprotein (LDL) 135
- low-income countries
 characteristics of 431–434
 environmental characteristics *see* environmental characteristics
 social characteristics *see* social characteristics
- lung cancer
 biomedical approach to 277–278
 decline in smoking rates 277
 diagnosis and treatment of 277–278
 health promotion and social model of health 276–277
- M**
- malaria 444, 493, 598–600
 epidemic 600
 improvements 599–600
- male and female population groups
 health status of 194–195
- malignant 366, 422
- malnutrition 549
- marketing, tobacco 478, 493
- mass migration 553–556
- maternal health conditions, high body mass index 119
- maternal mortality 74, 95, 586, 590–592
 improvements in 590
 rates 591, 592
- maternal mortality rate 74–75
- maternal mortality ratio 71, 95, 590
- medical science, dominance 316
- medical technology, advances 316
- Medicare 298
 advantages and disadvantages of 301
 funded 302
 in-hospital expenses 300
 Medicare Safety Net 300
 out-of-hospital expenses 298–300
 services not covered by 300–301
- Medicare Benefits Schedule 299
- Medicare levy surcharge 314
- Medicare Safety Net 300
- menopause 165, 228
- mental disorders 17, 614
- mental health and wellbeing 17–18, 55, 613–615
 vs. emotional health and wellbeing 18–21
 promote 614–615
- mental health issues
 alcohol and 110
 high body mass index and 118
- metastasis 26, 82

microfinance 702
 middle-income countries
 characteristics of 431–434
 environmental characteristics
 see environmental characteristics
 social characteristics *see* social characteristics
 Millennium Development Goals (MDGs) 583
 mnemonics 53, 55
 modern contraceptive methods 591
 monounsaturated fats 135
 morbidity 76, 95
 patterns in Australia 221
 requiring care 79–81
 mortality 68, 95
 infant mortality rates 71–72
 maternal mortality rate 74–75
 patterns in Australia 221
 patterns of 302–307
 rate 68
 under-five mortality rate 73–74
 Mountain Ash ecosystem 42–43
 My Health Record 322

N

National Disability Insurance Scheme (NDIS) 307–309
 National Health and Medical Research Council (NHMRC) 323
 National Nutrition Week
 campaign 399
 National Skin Cancer Action Week 372
 National Tobacco Campaigns 346–348
 natural resources 513–514
 neglected tropical diseases (NTDs) 586, 603–606
 epidemic of 605–606
 improvements 605
 prevention 604
 neonatal period 592
 neoplasms 242, 244
 neural tube defects 123, 151
 underconsumption of fruit and 127
 underconsumption of vegetables and 125
 newborns
 end preventable deaths of 592–595
 health and wellbeing 593
 new public health 259–261
 non-communicable diseases (NCDs) 445, 493, 610–613
 drug and alcohol misuse 616–617

hazardous chemicals 617–620
 mental health and wellbeing 613–615
 premature mortality from 611–613
 road traffic accidents 615–616
 non-government organisations (NGOs) 690–691
 aid 690
 health and wellbeing and human development 732
 Oxfam Australia 721–726
 Red Cross 717–720
 volunteers 698
 World Vision 711–714
 non-renewable natural resource 513, 534
 nutrient dense 123, 151
 Nutrition Australia 396–404
 educational resources 399
 Healthy Eating Advisory Service 397
 Healthy Lunchbox Week 399–400
 national Nutrition Week campaign 399

O

obesity, trends 81
 obstetric fistula 475, 764, 806
 obstetric haemorrhage 74, 95
 occupation 169
 oestrogen 165
 Official Development Assistance (ODA) 686, 694
 old public health 249–254
 policies and practices associated with 250–251
 optimal health and wellbeing 29
 as resource 28
 global benefits of 52
 osteoporosis
 high body mass index and 118
 high intake of salt and 138
 proportion of males and females with 130
 underconsumption of dairy and 129
 Ottawa Charter for Health Promotion 266–273
 My health for life 271–272
 action areas of 269–270
 WHO's health promotion logo 268
 out-of-hospital expenses 298–300
 outreach 764, 801
 overweight 81
 Oxfam Australia 721–726
 health and wellbeing and human development 724
 importance of 725

P

Paleo diet 406, 422
 palliative care 338, 347
 pandemic 31, 55, 304, 347
 parasitic diseases 302–303
 pathogens 38, 55
 patient co-payments 299, 334
 peace 36
 periodontitis 140, 151
 personal preference 65
 PET scan 278, 287
 Pharmaceutical Benefits Advisory Committee (PBAC) 305
 Pharmaceutical Benefits Scheme (PBS) 304–305
 physical health and wellbeing 13, 56
 poisoning 306–307
 polyunsaturated fats 135
 poor health and wellbeing 17, 32, 33
 poverty 461, 583, 623
 clean water and sanitation 463
 education 463–464
 government services 462–463
 healthcare 464–465
 housing 465–473
 nutritious food 463
 social protection, infrastructure 462–463
 premium 311, 334
 prenatal/infant health outcomes
 alcohol and 111
 smoking and 104
 prevalence 76, 95
 Prevent Alcohol and Risk-related Trauma in Youth (P.A.R.T.Y.) 361–322
 primary healthcare 320
 primary production 430, 493
 private health insurance 302, 311
 advantages and disadvantages of 315, 315–316
 incentives 313–314
 private sector 694
 productivity 30, 56
 Protected Special Category visa 307, 334
 public cancer screening 322
 public health 259–261
 campaigns 250
 warning 206
 public housing 41
 public transport systems 179

Q

quality education 633–636
 quarantine laws 310, 347

- quick-fix approach 315
 Quit campaigns 348–352
- R**
- racial discrimination 469
 Red Cross 717–720
 referred medical services 320
 regulation 321
 renewable natural resource 513, 534
 resources, geographical location
 of 178–179
 respiratory diseases 244–245
 respiratory disease, smoking 105
 road safety health promotion
 Black Spot program 361
 Driver Reviver program 361
 effectiveness of 357–359
 government laws and
 policies 359
 Prevent Alcohol and Risk-related
 Trauma in Youth 361–362
 road safety education, Victoria 360
 target 354–357
 Transport Accident Commission
 (TAC) 360
 road traffic accidents 615–616
 burden of disease from 616
 Royal Flying Doctor Service 328
- S**
- safe water 454–456
 salt, high intake of 137
 and cardiovascular disease 138
 and hypertension 138
 and osteoporosis 138
 impact on health status and burden
 of disease 139
 sanitation 177, 180, 228, 310, 347,
 456–459
 for Aboriginal and Torres Strait
 Islander peoples 190
 saturated fats 135
 schedule fee 299, 334
 schistosomiasis 604, 675
 sea level rise
 biodiversity 547
 food availability 546–547
 fresh water availability 545–546
 health and wellbeing 544–547
 people living in coastal areas 545
 self-assessed health status 63–64, 95
 self-esteem 17, 26
 sex 165
 sex, health status 470–474
 female genital mutilation 473–479
 forced marriage 473
 sexual orientation 474
 shelter 36–37
 sisters 378, 422
 skin cancer health promotion
 effectiveness of 367
 government laws 368–369
 National Skin Cancer Action
 Week 372
 non-melanoma 365
 policies 369
 SunSmart 369–372
 UV Daily 372–374
 smoking 102–103
 and asthma 105
 and Australian Burden of Disease
 Study 105–108
 and cancer 104
 and cardiovascular disease 104
 and infectious disease 105
 and prenatal/infant health
 outcomes 104
 and respiratory disease 105
 impact on burden of
 disease 107
 impact on health status 107
 rates and risk factors of 103–108
 smoking rates, decline 337
 smoking-related health promotion
 effectiveness of 344–345
 government laws and
 policies 345–346
 National Tobacco
 Campaigns 346–348
 Quit campaigns 348–352
 target 344
 social characteristics
 access to technology 438
 birth and population rates 437
 education and employment
 levels 437
 gender equality 437
 health systems 438
 high-income countries 436
 legal systems 438
 low-income countries 432, 433,
 438, 488
 middle-income countries 432,
 435, 439
 social security systems 438
 social connections 171
 social exclusion 171, 228
 of Aboriginal and Torres Strait
 Islander peoples 187–188
 of socioeconomic status population
 groups 205
 social health and wellbeing
 14–15, 56
 social inequities 262
 social isolation 171, 228
 of Australia's people living outside
 major cities 215
 social justice 44, 56
 social model of health 319, 347
 advantages of 321, 322–324
 disadvantages of 322–324, 323
 lung cancer 336–337
 principles of 321
 strengths and limitations of 343
 social participation 31
 social protection 468
 measures 625
 systems 507–508
 social security 41
 social sustainability 507, 534
 gender equality 508
 peace and security 510–511
 political and legal rights
 509–510
 safe, decent working
 conditions 508–509
 social protection systems
 507–508
 Society for Family Health
 (SFH) 591
 sociocultural factors 168, 228
 for Aboriginal and Torres Strait
 Islander peoples 186–189
 for Australia's people living outside
 major cities 214–215
 for male and female population
 groups 196–197
 for socioeconomic status population
 groups 204–206
 socioeconomic status (SES)
 of Aboriginal and Torres Strait
 Islander peoples 186
 of Australia's people living outside
 major cities 214
 of male and female population
 groups 196
 health status of 201–202
 solariums 366, 368, 422
 spiritual health and wellbeing
 19–21, 56
 stable ecosystem 41–42
 stakeholders 583
 stateless 553, 572
 stillbirths 591
 stress 18, 19
 subjective 3, 48–53
 subsistence 425, 488, 744
 subsistence farming 430, 493
 sudden infant death syndrome
 (SIDS) 72
 sugar, high intake of 139

- and dental caries and dental disease 140–141
 - and high body mass index 139
 - SunSmart 369–372
 - sustainability 43, 320, 502, 534
 - disease prevention and early intervention 322–323
 - economic dimension 502
 - environmental dimension 512
 - funding and regulation 321
 - health system and workforce 321–322
 - importance in 531
 - research and monitoring 323–328
 - social dimension 507
 - three dimensions of 515–516
 - sustainable agriculture 627
 - sustainable development 583
 - Sustainable Development Goal 1 (SDG 1) 623–624
 - vs. SDG 3 630
 - Sustainable Development Goal 2 (SDG 2) 628–630
 - vs. SDG 3 627
 - end hunger 627–630
 - zero hunger 627–630
 - Sustainable Development Goal 3 (SDG 3) 582–583
 - vs. SDG 1 621
 - vs. SDG 2 630
 - vs. SDG 4 636
 - vs. SDG 5 641
 - vs. SDG 6 645
 - vs. SDG 13 649
 - child health and wellbeing 590
 - communicable diseases 596
 - features of 587
 - good health and wellbeing 584
 - humanity and planet 582
 - interconnection 584
 - non-communicable diseases 610
 - objectives 583–584
 - rationale for 583
 - reduce maternal mortality 590–592
 - Sustainable Development Goal 4 (SDG 4) 634–636
 - vs. SDG 3 636
 - education and girls 635
 - quality education 635–636
 - Sustainable Development Goal 5 (SDG 5) 639
 - vs. SDG 3 641
 - Sustainable Development Goal 6 (SDG 6) 644–646
 - vs. SDG 3 645
- Sustainable Development Goal 13 (SDG 13) 649**
- vs. SDG 3 650
- sustainable resources 43–45
- Syndrome X 185, 228
- syphilis 302, 347
- T**
- Tackling Indigenous Smoking (TIS) 378
- telehealth 565
- testosterone 166
- tourism 559
 - challenges of 560–561
 - health and wellbeing 559–560
 - important 559–560
- trachoma 604, 675
- trans fats 135
- transnational fund 689
- Transport Accident Commission (TAC) 360
- trend 63, 95
- tropical diseases 586
- tuberculosis (TB) 601–602
 - epidemic 602
 - improvements 601–602
 - mortality rates, 2000–17 602
- type 2 diabetes
 - high body mass index and 118
 - high intake of fat and 135
 - low intake of fibre and 144
 - underconsumption of dairy and 129
- U**
- underconsumption of vegetables 123
- under-five mortality rate (U5MR) 71, 73–74, 95, 444, 594
- unemployment 169–171
 - of Aboriginal and Torres Strait Islander peoples 186
 - of Australia’s people living outside major cities 215
 - of male and female population groups 196
 - of socioeconomic status population groups 205
- universal health coverage 658
- UN’s Sustainable Development Goals objectives 667
 - SDG 3 668
 - World Health Organization 655
- urban design 178–179
- urban slums 439, 493
- UV Daily 372–374
- UV index 370, 422
- V**
- vaccines, discovery 251–252
- values 19
- vector control 598
 - malaria 598
- vectors 31, 56
- vegetables, underconsumption of and Australian Burden of Disease Study 125
 - and cardiovascular disease and cancer 124
 - and high body mass index 124
 - and neural tube defects 125
 - impact on health status and burden of disease 126
- venereal diseases 242, 287
- Victoria, road safety education 360
- vitamin A deficiencies 629
- W**
- waste removal and pollution 514–515
- water 180
 - Aboriginal and Torres Strait Islander peoples 190
 - pollution 619
- work environment 177–178
 - of Australia’s people living outside major cities 217
 - of socioeconomic status population groups 209
- workforce, health system 321–322
- Workforce Incentive Program 328
- work-related accidents 306
- World Health Organization (WHO) 654
 - global fund 670
 - main functions 656
 - priorities 657
 - UN’s Sustainable Development Goals 655
- world trade 118
- World Vision 711–714
 - health and wellbeing and human development 713–714
- Y**
- years lost due to disability (YLD) 83, 84–85, 95
- years of life lost (YLL) 83, 84, 95, 447
- Z**
- zero hunger 627–630

