

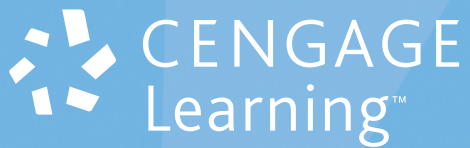


VCE Units
3 & 4

Nelson
**Health & Human
Development**

Katherine Jones
Andrew Keating
Ashley Mills
Nicole Parker





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Nelson Health and Human Development VCE Units 3 & 4**1st Edition****Katherine Jones****Andrew Keating****Ashley Mills****Nicole Parker**

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Contents

About this book	vi
About the authors	x

Unit 3: Australia's health in a globalised world

1

Area of Study 1: Understanding health and wellbeing

Chapter 1 Understanding health and wellbeing	2
Understanding health and wellbeing	3
The importance of health and wellbeing	13
Prerequisites for health	16
Chapter 2 Measuring health status	31
Understanding health status	32
Indicators of health status	39
Health status in Australia	45
Chapter 3 Health status in Australia	57
Sociocultural factors	58
Biological factors	62
Environmental factors	69
Health status of different population groups	74
Factors that contribute to Australia's health status	86

Area of Study 2: Promoting health and wellbeing

Chapter 4 Australia's health system	98
Improvements in Australia's health status over 100 years	99
Australia's health system	108
Chapter 5 Health promotion in Australia	121
Improving population health through health promotion campaigns	122
Improving Indigenous health through health promotion programs	139
Chapter 6 Healthy eating in Australia	151
Eating patterns in Australia	152
Initiatives for healthy eating	154
Challenges in bringing about dietary change	165

Unit 4: Health and human development in a global context

177

Area of Study 1: Health and wellbeing in a global context

Chapter 7 Health in a global context	178
Characteristics of high-, middle- and low-income countries	179
Comparison of health status and burden of disease	185
Reasons for similarities and differences in burden of disease	192
Chapter 8 Sustainability and human development	221
The concept of human development	222
Measuring human development: the Human Development Index	228
Sustainability and health and wellbeing	238
Chapter 9 Implications of global trends for health and wellbeing	246
Implications of climate change	247
Implications of conflict and mass migration	252
Implications of increased world trade	259
Implications of increased world tourism	260
Implications of digital technologies	263

Area of Study 2: Health and Sustainable Development Goals

Chapter 10 The UN's Sustainable Development Goals 278

Origin of the Sustainable Development Goals	279
Goal 3: Good health and wellbeing	284
Relationships between SDG 3 and SDGs 1, 2, 4, 5, 6 and 13	288
Collaboration between the health sector and other sectors	311

Chapter 11 WHO and Australian aid 317

Priorities and work of the World Health Organization	318
Types of aid	330
Australia's aid program	335
Australian aid priorities	338
Australian aid partnerships	349

Chapter 12 NGOs and effective aid programs 353

Non-government organisations that promote health and wellbeing, and human development	354
Effective aid programs	367
Effective aid programs that address the SDGs	370
Social action and health and wellbeing	374

Glossary	378
Additional references	381
Index	388

About this book

In each chapter

This first edition of *Nelson Health and Human Development VCE Units 3 & 4* matches the new Health and Human Development Study Design 2018–2022.

The first page of each chapter lists the relevant parts of the Study Design (Key knowledge and Key skills), and has a list of key terms, and table of contents for the main headings in the chapter.

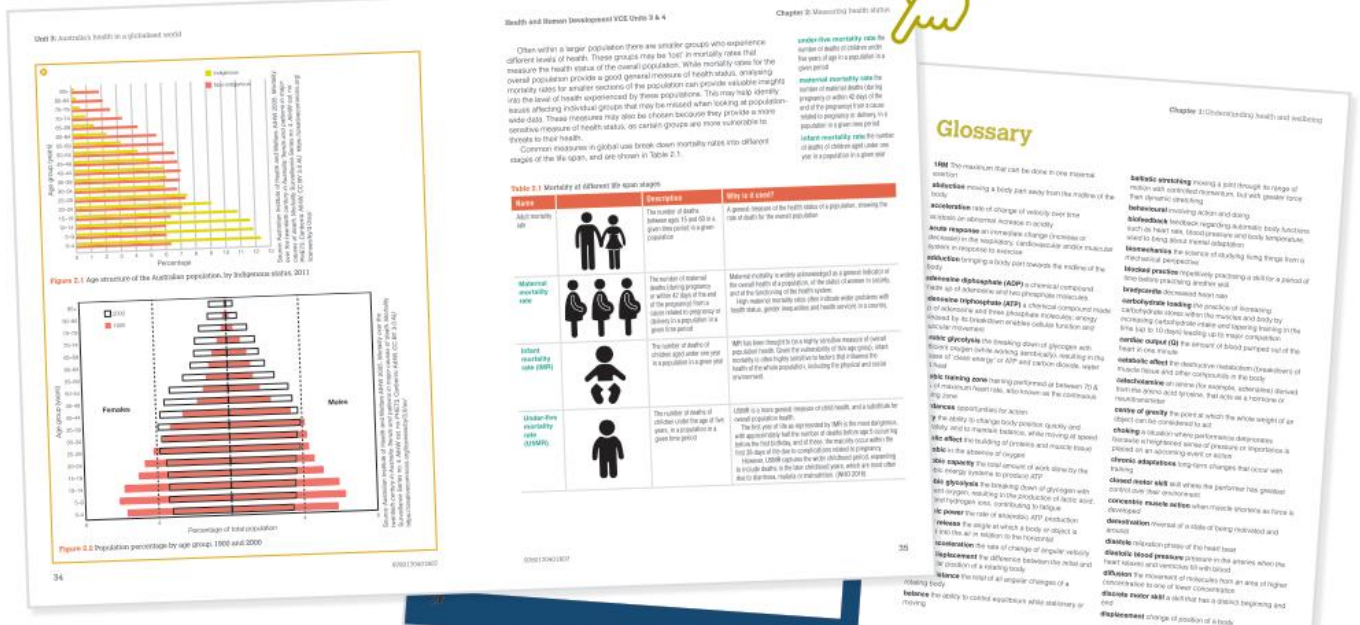
There are many opportunities for you to study and interpret data, using graphs and tables.

Activities

Throughout the chapter, there are interesting activities to build on what has been covered in the text.

At the end of each section, **Review and reflect** questions help you to remember and understand the essential content.

- Glossary terms are highlighted in bold blue throughout the text, with the definitions in the margin and at the back of the book. If you are using the NelsonNetBook, then there is a button at the top of each page to see the glossary terms as you read.



- The weblink icon flags a helpful website. Most weblinks can also be accessed directly through <http://hhdvce3and4.nelsonnet.com.au>.

Unit 4: Health and human development in a global context

The concept of human development

The United Nations Development Programme (UNDP) is a branch of the United Nations (UN) that works in approximately 170 countries to promote development. This work includes the reduction of poverty, and supporting countries in implementing programs and policies, such as the Sustainable Development Goals. The UNDP releases an annual Human Development Report, which analyses a range of factors across countries to determine the extent to which a country is fostering human development. Therefore, it makes sense to look to this organisation in order to get a sense of what **human development** means. In 1990 the UNDP stated that human development is about:

- ...creating an environment in which people can develop to their full potential and lead productive, creative lives in accord with 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...

When we examine this definition, we can see that human development is about:

- creating an environment where people can develop to their full potential
- creating an environment where people can live productive, creative lives in accordance with their interests and needs, which includes:
 - enhancing people's capabilities
 - people having access to knowledge
 - people having access to health and a decent standard of living
 - people participating in the life of the community
 - people participating in decisions that affect their lives.



Figure 8.1 Human development is about expanding choices and having access to knowledge.

Health and Human Development VCE Units 3 & 4

Chapter 8: Sustainability and human development

In 2015, 25 years after the first Human Development Report, the UNDP explained that the human development approach is about expanding the richness of human life, rather than simply the richness of the economy in which human beings live. This approach is focused on creating fair opportunities and choices for all people. The UNDP explains that these ideas are focused on three areas (UNDP 2016):

- **People:** the human development approach focuses on improving the three people lead rather than assuming that economic growth will lead, automatically to greater opportunities for all. Income growth is an important means to development, rather than an end in itself.
- **Opportunities:** human development is about giving people more freedom and opportunities to live lives they value. In effect this means developing people's abilities and giving them a chance to use them. For example, educating a girl would build her skills, but it is of little use if she is denied access to jobs, or does not have the skills for the local labour market. (Figure 8.2) looks at aspects of human development that are foundational (that is they are a fundamental part of human development); and aspects that are more contextual (that is they help to create the conditions that allow people to flourish). Three foundations for human development are to live a healthy and creative life, to be knowledgeable, and to have access to resources needed for a decent standard of living. Many other aspects are important too, especially in helping to create the right conditions for human development, such as **environmental sustainability** or equality between men and women.
- **Choices:** human development is, fundamentally about more choice. It is about providing people with opportunities, not insisting that they make use of them. No one can guarantee human happiness, and the choices people make are their own concern. The process of development – human development – should at least create an environment for people, individually and collectively to develop to their full potential and to have a reasonable chance of leading productive and creative lives that they value.

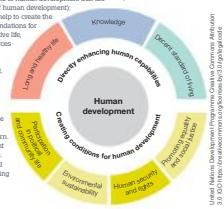


Figure 8.2 Human development

Influencing human development

A wide range of factors can influence whether or not an environment is created that will enhance or prevent individuals and populations from attaining high levels of human development. Data from the Human Development Report 2015 (outlined in Figure 8.3) shows the many barriers that still exist for millions of people around the world, restricting individuals and populations and preventing them from achieving optimal levels of human development (UNDP 2015).

We will discuss five of the range of factors that can either promote or hinder the achievement of optimal levels of human development:

- access to education
- access to work
- lack of access to health care
- lack of access to safe water and sanitation
- peace

Each chapter finishes with a summary of the key content, and some more difficult questions. Answers are on your student website, and require you to log in using the code at the back of your book.

At the end of each chapter

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Unit 3

Australia's health in a globalised world

Area of Study 1: Understanding health and wellbeing

Chapter 1: Understanding health and wellbeing	2
Chapter 2: Measuring health status	31
Chapter 3: Health status in Australia	57

Area of Study 2: Promoting health and wellbeing

Chapter 4: Australia's health system	98
Chapter 5: Health promotion in Australia	121
Chapter 6: Healthy eating in Australia	151

Chapter 1: Understanding health and wellbeing

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 eco-system, sustainable resources, social justice and equity

Key skills

- explain the dynamic and subjective nature of the concepts of health and wellbeing and illness
- describe the 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

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Key terms

- physical health and wellbeing
- social health and wellbeing
- emotional health and wellbeing
- mental health and wellbeing
- spiritual health and wellbeing
- prerequisites for health

In this chapter

Understanding health and wellbeing	page 3
Defining health, wellbeing and illness	page 4
Dimensions of health and wellbeing	page 6
The importance of health and wellbeing	page 13
Health and wellbeing as a resource	page 13

Prerequisites for health.....	page 16
Peace	page 17
Shelter	page 20
Education	page 21
Food	page 21
Income	page 23
Stable ecosystem	page 24
Sustainable resources	page 25
Social justice and equity	page 26

Understanding health and wellbeing

Hi. How are you?

Coucou. Ca va? (French: *Hi. How are you?*)

Ciao. Come stai? (Italian: *How is it going?*)

These are common informal ways of greeting each other in many Western countries. They show that one of the first things we do when we see someone is to inquire about their health and wellbeing. The way we greet each other is a social custom, and social customs reflect what we hold to be important. Few would disagree that we place a high value on our health and wellbeing. Everyone wants to be healthy, but what does this mean?

'Being healthy' is subjective; it means different things to different people. It is influenced by when and where we live. What was considered healthy 100 years ago would not necessarily be considered healthy today; what is considered healthy in one country may be viewed differently in another. Individuals each have a different subjective understanding of their health and wellbeing, and these views are relative to their experience. For example, someone who suffers from chronic asthma might consider themselves healthy if their condition is managed, and someone who is elderly might consider themselves healthy if they are able to live free from pain.

Many people base their judgment of how healthy they are on the presence or absence of an illness: we are healthy if we do not suffer from illness, we are unhealthy if we do. Yet health and wellbeing is a complex concept, and goes far beyond this simple way of thinking. There are many ways in which people might be considered healthy or unhealthy.



Figure 1.1 How healthy are these people? What is it about them that makes you think they are 'healthy' or 'unhealthy'?

Activity 1: A picture of health and wellbeing

- 1 Draw your idea of a healthy person. Annotate this drawing, writing all the different ways in which this person is healthy. For example, they may be tall or short, doing an activity, interacting with other people, or thinking something (as shown by a thought bubble).
- 2 Compare your drawing with others in your class. What do your drawings have in common? What differences are there between your drawing and others?
- 3 Based on your discussions, add more annotations to your picture as needed to create an image of what being healthy means to you.

Defining health, wellbeing and illness

Health, wellbeing and illness are closely connected concepts that need to be understood in relation to each other. They are difficult concepts to define, given that they are subjective and closely related to the time and place in which we live. However, developing agreed definitions allows us to make judgments about the levels of health and wellbeing and illness experienced by individuals and groups. Without shared definitions, we cannot make comparisons or have a framework for a shared discussion about health and wellbeing and illness. These definitions also provide the beginning of a framework that determines how we might go about improving health and wellbeing.

Health has been defined in various ways, and these definitions are always under debate as our understanding evolves. The most widely accepted definition of health currently in use was provided by the World Health Organization (WHO). WHO was established in 1948 by the United Nations as a global organisation to provide leadership on matters of health. One of its first acts was to define health, and this definition appeared in the preamble to its constitution:

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

World Health Organization, Preamble to the 1948 constitution, <http://www.who.int/about/mission/en/>

This way of understanding health has a number of important elements.

- It moves beyond physical health, to include mental and social dimensions of health.
- It moves away from a negative aspect of health, where health is seen as the absence of disease, towards a positive aspect. In order to be healthy, it is no longer enough to be 'not ill'.
- Health is a dynamic 'state' – it can change. Health is a continuum, with optimal health at one end and illness or death at the other end, and an individual's health can move to any point along the scale at any time. There are degrees of good health and ill-health, as opposed to being either healthy or not.

Ill health ←————→ Optimal health

Figure 1.2 There are degrees of good health and ill-health.

wellbeing 'a complex combination of all dimensions of health, characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged'

This definition also contains the concept of **wellbeing**, which has become increasingly intertwined with health. Wellbeing is now understood to be an implicit part of health, meaning that it is closely related to and cannot be separated from health. Wellbeing recognises the importance of balance in the different aspects of health, and is a state in which an individual feels happy, healthy, capable and

engaged. For example, wellbeing might include life satisfaction, work-life balance, and the extent to which an individual is able to work towards their potential or achieve their goals. Wellbeing is in some ways the individual's *experience* of health, or how you feel about yourself and your life. Health and wellbeing are now often referred to together as the single concept of 'health and wellbeing'.

Despite its popularity, the WHO definition has weaknesses and has been criticised. For example, it is considered by some to be vague and difficult to measure, and a state of 'complete health' is considered impossible for many people to achieve. Despite these criticisms, the WHO definition of health remains in common use.

While the definition itself hasn't changed since its inception, it has undergone some clarification as our understanding of health has continued to change. Importantly, the term **optimal health and wellbeing** has come to be used more frequently than 'complete wellbeing'. Optimal health and wellbeing is the best possible health an individual can achieve given their potential, and requires a balance between the different dimensions of health and wellbeing.

The dimensions of health and wellbeing will be covered in the next section.

At the other end of the continuum of health and wellbeing is someone experiencing **illness**. When an individual experiences disease or injury, there is a disturbance to normal healthy functioning in any area of health that might cause symptoms such as pain or distress. For example, a broken arm, diabetes mellitus and depression are all examples of injuries or diseases that cause disturbances to healthy functioning. Illness is closely related, but is a broader concept that includes the personal experience of the disease or injury (AIHW 2014). As with health and wellbeing, illness is closely related to when and where an individual is living, and depends on the individual's view of health and wellbeing.

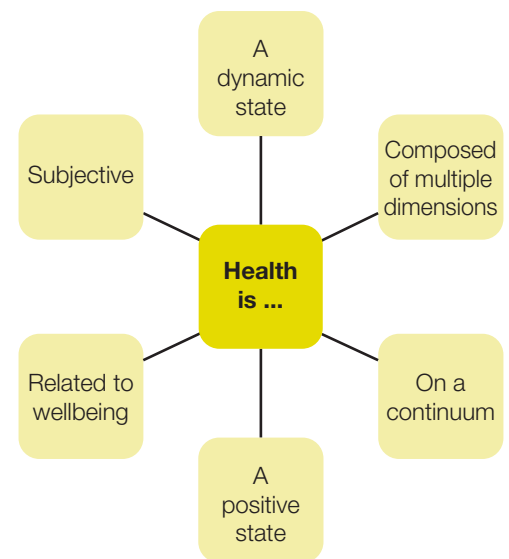


Figure 1.3 The concept of health

optimal health and wellbeing the highest level of health an individual can achieve given their potential, including a balance between all dimensions of health

illness the experience of being in a state of poor health, usually due to the presence of a disease or injury

Activity 2: Vox pop

- 1 Ask five people to try to define health and write these definitions down. Finally, add your own definition of health, and list them all below the WHO definition of health.

WHO definition	<i>Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.</i>
Person 1	
Person 2	
Person 3	
Person 4	
Person 5	
My definition	

- 2 Try to identify common themes among the definitions of health that people have provided. In what ways are they similar? What common themes run through all definitions? In what ways are they different? What elements appear in only one or two of the definitions?
- 3 Did the definitions provided include reference to the concept of wellbeing? If so, how was it described as part of the definitions of health? If it was missing, why do you think this is?



Figure 1.4 The five dimensions of health and wellbeing

Dimensions of health and wellbeing

The WHO definition of health refers to three aspects of health and wellbeing: physical, mental and social. These are referred to as dimensions, and are the separate parts that make up the whole of health and wellbeing. There are now five recognised dimensions making up our overall health and wellbeing: physical, mental, social, emotional and spiritual. Of all these dimensions, physical is most often referred to when discussing health and wellbeing, but it is only part of the picture. Each dimension can be anywhere along the spectrum, but the dimensions are also interrelated: the level of health and wellbeing in one dimension will often affect the level experienced in other dimensions. It is the complex combination of these dimensions that determines our level of health and wellbeing.

The physical dimension of health and wellbeing

Included in physical health is how the body and its systems function. Important in this dimension is the ability of the body to perform daily activities. Physical health is the most visible of all dimensions of health, and therefore often receives more attention.



Figure 1.5 Physical health involves the body and its systems, and includes the physical capacity to perform tasks such as exercise.

The elements that make up physical health include:

- physical capacity (strength, energy, coordination) to do physical tasks
- immune functioning and resistance to disease
- level of body fat
- level of physical fitness
- nutritional status – the ability to take in and use nutrients required by the body
- presence or absence of a disease, illness or injury.

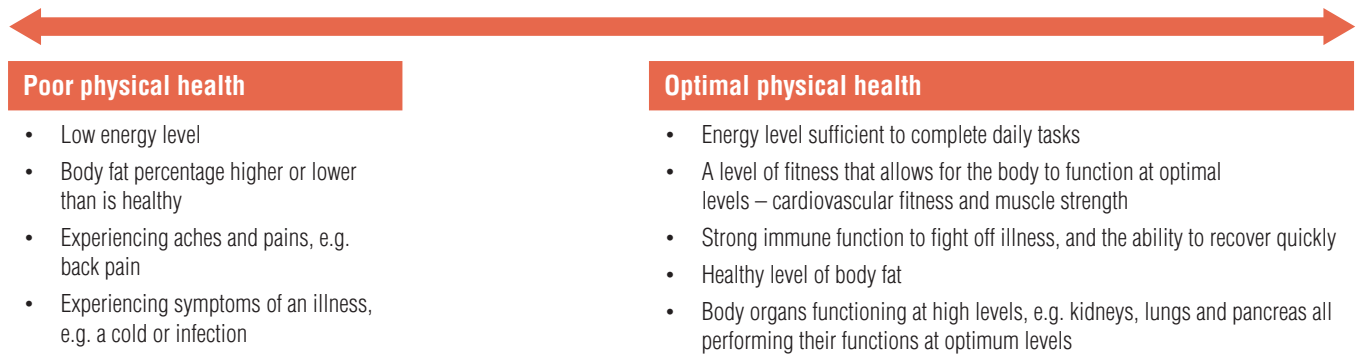
Optimal physical health goes beyond the absence of illness, injury or disability. To be in optimal health, the body needs to be functioning at the highest level possible for that individual, which often takes effort to achieve.

Physical health can be supported by making choices that support the functioning and structure of the body. Examples of behaviour that might improve

physical health 'relates to the functioning of the body and its systems, it includes the physical capacity to perform daily activities or tasks'

physical health are: not smoking, not taking drugs, brushing teeth, drinking no more than the recommended amount of alcohol, eating nutritious food in the correct proportions, drinking enough water, getting enough sleep, wearing a helmet when riding a bike, and exercising.

The scale below shows examples of physical health at different parts of a continuum.



The social dimension of health and wellbeing

People are naturally social beings, and it is well known that positive interactions with others are vital to our overall health and wellbeing. The social dimension refers to how well we interact with others and take part in our community, both independently and with others.



Figure 1.6 Positive interactions with others are vital to our overall health.

Elements that make up **social health** include:

- forming and maintaining meaningful and satisfying relationships
- positive and effective communication
- the ability to understand and apply social norms in order to engage in appropriate behaviour
- participation in and contribution to the community.

The ability to form and maintain different types of relationships is an integral part of social health. While having a large number of relationships is not important, it is important to have a variety of relationships that can provide enough support to ensure that every person has an opportunity to function as a contributing member of society. These can include family, friends, acquaintances, colleagues, teachers

social health 'relates to the ability to form meaningful and satisfying relationships with others and the ability to manage or adapt appropriately to different social situations.'

and many others. When a person has a social circle that is varied, accepting, well-functioning and provides adequate support, their social health is optimal. For example, their social circle may include a close and supportive family, a circle of friends, professional relationships at work, and an intimate relationship that is functioning well. Lack of social relationships or a severely limited number, or relationships that are in conflict, are indicative of poorer social health. Our ability to communicate is a key factor in social health that can influence these relationships.

Important in this dimension is the ability to understand and apply social norms, so we can engage in appropriate behaviour in different settings and fulfil accepted roles in society. For example, standing to the left on an escalator, not talking on a mobile phone during a movie, and waiting in line are all social norms in Australia. Understanding and applying these social norms enables us to function alongside others.



Poor social health

- Social isolation
- Inability to communicate effectively
- Relationships plagued by disputes, conflict or violence
- Behaving in an inappropriate manner
- Social situations cause high levels of stress and anxiety

Optimal social health

- Contributes to the community
- Has a varied social support network
- High-level communication skills
- Able to resolve disputes
- Able to behave in an appropriate manner in different situations
- Able to cooperate with others and work effectively as part of a team
- Confident interactions with others

Case study

Social media making millennials less social: Study

It's something everyone suspected, but now it's official: The under-30 crowd is addicted to their cell phones.

Those are the findings of a new survey, which showed that as millennials spend more time engaged on social media platforms, it's causing them to be less social in real life. The study, conducted by Flashgap, a photo-sharing application with more than 150 000 users, found that 87 per cent of millennials admitted to missing out on a conversation because they were distracted by their phone. Meanwhile, 54 per cent said they experience a fear of missing out if not checking social networks.

Nearly 3000 participants were asked about how they felt about social media in social settings, and found that the guiltiest culprits are often females. The study found 76 per cent of females check social media platforms at least 10 times when out with friends, compared with 54 per cent of males.

Julian Kabab, co-founder of Flashgap said that people are too focused on looking at social media when they're out at events, and it may be costing them in social interaction. 'People miss out on parties because they want to see what's going on, on social networks, take beautiful selfies and add filters to their pictures,' he told CNBC.

It especially becomes a problem when there is alcohol involved and regrets the next morning. The survey found that 71 per cent of users regret posting a picture on a social network after more than three drinks.

Courtesy of CNBC

The rapid increase in the use of social media has implications for social health. Social media is designed to facilitate social interaction, and therefore in theory it should be beneficial for our health and wellbeing. However, research has shown that it can also pose a significant risk to social health and wellbeing.

Case study questions

Based on the information presented in the case study and considering the different elements that make up social health:

- 1 How do you think use of social media can lead to increased social health and wellbeing?
- 2 How do you think use of social media can lead to decreased social health and wellbeing?
- 3 What factors do you think can influence whether the overall effect of social media is positive or negative?

The emotional dimension of health and wellbeing

The emotional dimension relates to emotional functioning – how an individual feels and how they react to a stimulus in their life, whether positive or negative.

Emotional health is not the absence of emotion, such as never feeling sad, but it is the ability to experience and understand a variety of emotions, both positive and negative. It is experiencing happiness, love, joy and excitement at appropriate times. It is also being able to experience and overcome grief, sadness and anger.

emotional health 'relates to the ability to express feelings in a positive way. Emotional health is about the positive management and expression of emotional actions and reactions as well as the ability to display resilience.'



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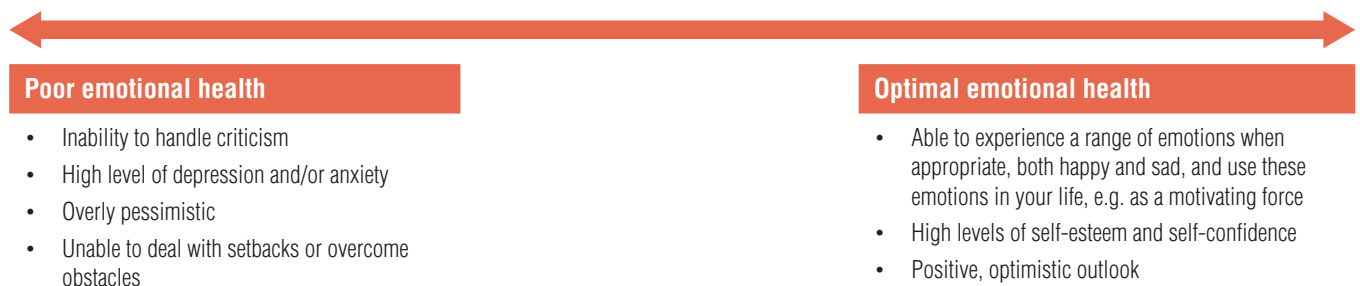
Figure 1.7 Emotional health is the ability to experience and understand a variety of emotions, both positive and negative, such as happiness and anger.

Elements that make up emotional health include:

- managing levels of stress and anxiety
- feeling emotionally secure and relaxed in everyday life
- self-esteem and self-confidence
- resilience in dealing with difficult situations and life changes
- the ability to experience and understand a variety of feelings.

Someone who is emotionally healthy will demonstrate resilience, being able to face challenges in their lives and overcome obstacles. Someone who is emotionally unhealthy may not be able to control their emotions, lashing out in anger or frustration. Or they may have a persistently negative thought pattern.

Like all dimensions of health and wellbeing, optimal emotional health takes effort to achieve. Some examples of practices that may improve emotional health are journal writing to encourage reflection, developing a set of coping skills to help you manage setbacks, and taking time to do activities that bring you joy.



The mental dimension of health and wellbeing

Humans are faced with huge amounts of information, which we need to receive, process and analyse quickly and then use as the basis for making judgments. Our ability to do this makes up the mental dimension of health and wellbeing, which is the cognitive, or intellectual, aspect of health and wellbeing that relates to the functioning of the mind and brain.

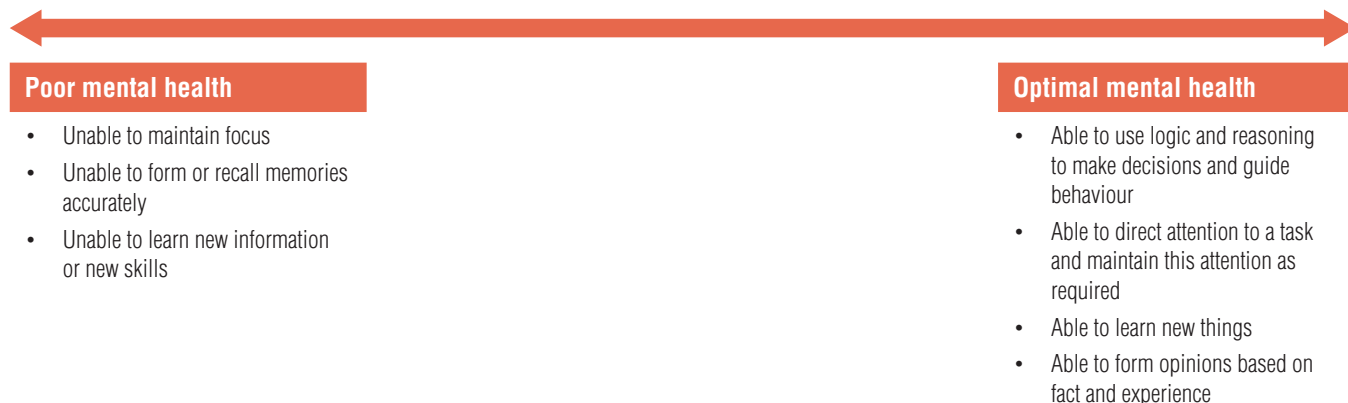
Included within the mental dimension of health and wellbeing is:

- the ability to maintain focus
- how we process and comprehend information
- storing information as memories and recalling it as needed
- logical thinking using reason and deduction
- setting goals, making decisions and taking action.

mental health 'the current state of well-being relating to the mind or brain and it relates to the ability to think and process information.'

Someone who demonstrates optimal **mental health** is able to learn and understand new information, use logic and reasoning to help make reasonable decisions, and form opinions that help to guide their actions. They are able to form memories and recall these as necessary to help them in their everyday life.

Some examples of poor mental health include cognitive disorders such as dementia, which have symptoms that may disrupt a person's ability to maintain focus, control their impulses, reason and recall memories.



Mental health and emotional health were for a long time considered together; it is only recently that they have come to be considered separate dimensions of health. They have similarities, but there are important differences between them. In simple terms, they are distinguished by the difference between 'thinking' and 'feeling'. It is also important to distinguish between the definition of the mental dimension of health and wellbeing in VCE Health and Human Development Units 3 & 4, and the way it is generally understood. 'Mental health' is often used in general terms to refer to the presence of a mental illness, such as depression or anxiety. In Health and Human Development, the mental dimension of health is not concerned with emotions, but rather with intellect and cognition and the wellness of the mind (VCAA Advice to Teachers 2017).

The spiritual dimension of health and wellbeing

Spirituality was not included in the 1948 WHO definition of health. However, since then, research has increasingly highlighted the importance of spirituality and this dimension has become more understood. Adding **spiritual health** as a dimension of health and wellbeing was discussed by WHO as far back as 1983, and although the official definition has never been amended, since 1984 WHO has recommended that spiritual health be recognised as a dimension of health and wellbeing and be incorporated into health promotion programs globally.

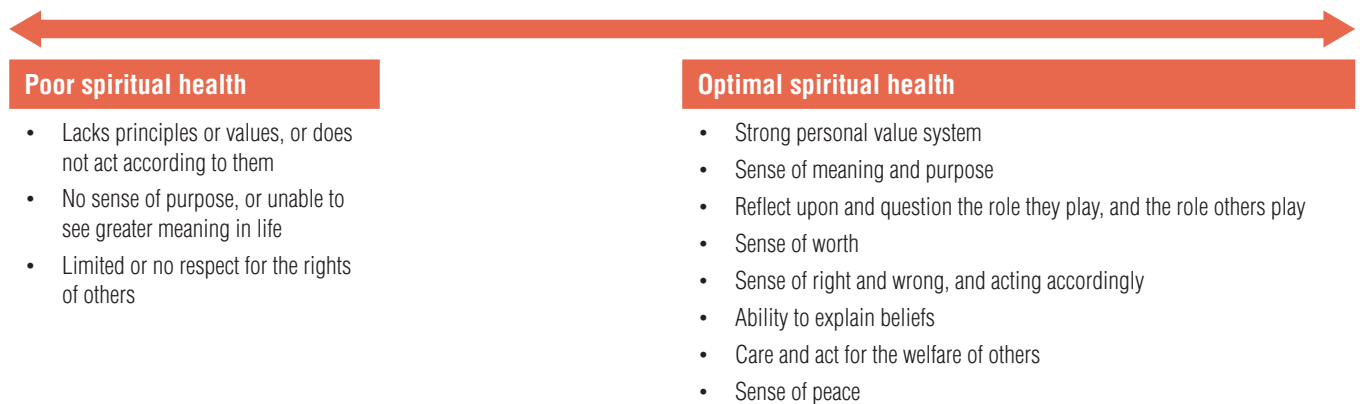
Spirituality refers to your sense of who you are, where you came from, where you are going and why – in short, your sense of meaning and purpose. Someone who is spiritually healthy may have a sense that life is meaningful and that they have found their place in it. Spiritual health also has to do with our sense of right and wrong. It incorporates the values and beliefs that guide the way we live our lives, our ethics and morals, and harmony between individuals and the world around them.

Elements that make up the spiritual dimension of health and wellbeing include:

- our sense of meaning and purpose in life
- morality – a sense of right and wrong
- the values and beliefs that guide the way we live our lives, and the way we act
- harmony between individuals and the world around them, with a balance of inner needs and the welfare of the world around them.

Many people think spirituality is related to a religion, and that religion and spirituality are the same thing, but they are in fact quite different. A person can be an atheist and still be spiritually healthy. Spirituality is not specifically linked to any particular religion or way of thinking. Some people may find a world view, belief system and values as part of a structured religion, belief or faith system, while others create their own or find them in other contexts, such as family.

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



As with other dimensions, there are behaviours that can increase spiritual health, such as:

- volunteering or making a contribution to society
- reflection, for example through journal writing or meditation
- engaging in meaningful discussions with others
- prayer
- physical practices such as yoga.

Interactions between dimensions of health and wellbeing

The dimensions of health and wellbeing are separate, yet connected. While each dimension needs to be considered a separate element of our total health and wellbeing, it also needs to be considered in the context of the other dimensions. The level of health and wellbeing in one dimension has an impact upon all the others; it is rare for one to become better or worse without affecting the other dimensions. This is why the dimensions are said to be interrelated.

If one dimension of health and wellbeing is suffering, then the impact upon other dimensions needs to be addressed. It also means that working to improve one dimension of health and wellbeing can improve other dimensions as well.

The following are examples of how the dimensions of health and wellbeing are interrelated.

- Someone who suffers a physical injury is experiencing poor physical health. This injury can lead to higher levels of stress, which may be poorly managed (emotional). Higher levels of stress can lead to self-medication with alcohol, drugs or gambling, which can interfere with decision-making and focus (mental). This can lead to a breakdown in relationships (social), which can lead to lower self-esteem (emotional).
- People who are experiencing emotional distress, such as feelings of depression, often have physical symptoms such as constipation, lack of appetite, insomnia or lethargy. Strategies to increase emotional health often focus on physical activities. For example, exercising can increase emotional health because it can reduce feelings of anxiety and depression.
- Participating in sport can increase physical health by raising fitness levels through exercise, which can lead to feelings of confidence and higher self-esteem (emotional). It can also increase social health by broadening the person's social network if it is a team sport. This expanded social network provides an opportunity for the individual to participate in discussions and observe others and reflect on their values (spiritual).
- Someone who contributes to the welfare of their community through volunteering (spiritual health) is likely to make new friends and increase their social circle (social). This can lead to feelings of happiness, increase self-esteem, and increase confidence (emotional).

Case study

Oscar's health

Oscar is a 6-year-old boy who is currently in Grade 1 at school. He has struggled socially at school, forming only one close friendship. His social skills are poor, and he struggles to understand what is happening when he interacts with others at school. He finds recess and lunchtime very stressful. As a result, he often spends lunchtime in the library, where the environment is controlled, rather than playing sport outside with other children. In the library he reads books, and while doing this he is content.

He enjoys learning, and is well above the rest of the class in most areas. His reading, writing, maths and science are advanced, and he enjoys tasks that are clearly defined and involve organising and categorising. His abilities are a source

of pride for him. The teacher has not always been able to provide work at his level, however, and this has caused him to become frustrated and quite rude at times.

Task

Construct a mind map showing how Oscar's level of functioning in certain dimensions of health are impacting upon the other dimensions. For example, his lack of social relationships is affecting his physical health – because of his lack of friends, he is amusing himself indoors rather than playing physical games outside. His high level of ability in reading and writing (mental health) is leading to a positive sense of wellbeing (emotional health). The example shown in Figure 1.8 is a guide to help you get started.

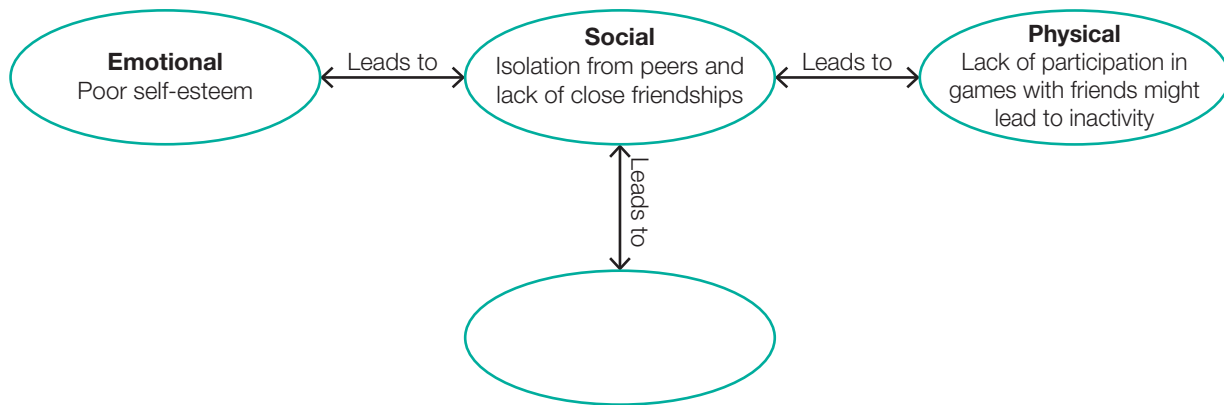


Figure 1.8 Mind map

Review and reflect

- 1 **a** How does the WHO define health?
- b** What are the limitations of this definition?
- c** Explain why it is so difficult, if not impossible, to provide a single definition of health.
- 2 Describe 'wellbeing'.
- 3 Explain why the concept of health has been replaced by 'health and wellbeing'.
- 4 What does it mean to say that health is 'subjective'?
- 5 Explain how health is 'dynamic'.
- 6 List the five dimensions of health and wellbeing, and provide a short description of each.
- 7 Create case studies that show someone who is healthy and unhealthy in each dimension of health and wellbeing. For example, write a description of how someone who is emotionally healthy may act or appear, compared with someone who is emotionally unhealthy.
- 8 What does it mean to say that the dimensions of health and wellbeing are interrelated? Explain, giving three examples of how different dimensions of health and wellbeing interact.

The importance of health and wellbeing

Health and wellbeing as a resource

Health and wellbeing has long been valued for its own sake – we want to be healthy because being healthy is a good thing. This view is represented in the WHO definition of health. However, in 1986 at the first International Conference on Health Promotion, a shift occurred. This conference resulted in the *Ottawa Charter for Health Promotion*, an important document that will be covered in detail in later chapters. In the Ottawa Charter, the definition of health was clarified from the original WHO definition by stating that health is:

...a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities... Good health is a major resource for social, economic and personal development and is an important dimension of quality of life.

Extract from WHO 2017, Health promotion. 'The Ottawa Charter for Health Promotion', <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>

The Ottawa Charter description of health indicates that health is important because of *what it allows us to do*. It is a means to an end, rather than an end

in itself. Health and wellbeing is a resource that we can use in our everyday lives to achieve our goals and aspirations, or to satisfy our needs. Being healthy allows us to achieve our aspirations and goals; being in ill-health prevents us from being able to achieve our goals.

The individual and collective importance of health and wellbeing

Health and wellbeing can be viewed in a similar way to money. Money is valued not so much for its intrinsic value, but because it allows us to buy material items such as clothes or a house, or experiences such as holidays. Similarly, health and wellbeing can be considered a resource by thinking about what it allows individuals to achieve. For example, health and wellbeing enables a father to play backyard cricket with his kids, and teenagers to go to school and learn, increasing their chances of achieving their career goals.

Case study

Spoon theory

Following is a story by Christine Miserandino, who came up with the 'spoon theory' to explain how energy, an element of physical health, is a resource that she has to use wisely in her life. Suffering from the condition lupus has meant that for her, health and wellbeing is a limited resource and needs to be used wisely.

My best friend and I were in the diner ... when she asked me out of the blue what it felt like to have Lupus and be sick ... I started to ramble on about pills, and aches and pains, but she kept pursuing, and didn't seem satisfied with my answers ... As I tried to gain my composure, I glanced around the table for help or guidance ... At that moment, the spoon theory was born. I quickly grabbed every spoon on the table ... I looked at her in the eyes and said 'Here you go, you have Lupus' ...

I explained that the difference in being sick and being healthy is having to make choices or to consciously think about things when the rest of the world doesn't have to ... Most people start the day with unlimited amount of possibilities, and energy to do whatever they desire, especially young people. For the most part, they do not need to worry about the effects of their actions. So for my explanation, I used spoons to convey this point ...

I asked her to count her spoons. She asked why, and I explained that when you are healthy you expect to have a never-ending supply of 'spoons'. But when you have to now plan your day, you need to know exactly how many 'spoons' you are starting with... She counted out 12 spoons ... I asked her to list off the tasks of her day, including the most simple. As, she rattled off daily chores, or just fun things to do; I explained how each one would cost her a spoon ... Showering cost her spoon, just for washing her hair and shaving her legs ... Getting dressed was worth another spoon. I then explained to her that she needed

to choose the rest of her day wisely, since when your 'spoons' are gone, they are gone ... We went through the rest of the day, and ... she was forced to make choices and think about things differently. Hypothetically, she had to choose not to run errands, so that she could eat dinner that night. When we got to the end of her pretend day, she said she was hungry. I summarised that she had to eat dinner but she only had one spoon left. If she cooked, she wouldn't have enough energy to clean the pots. If she went out for dinner, she might be too tired to drive home safely. So she decided to make soup, it was easy. I then said it is only 7pm, you have the rest of the night but maybe end up with one spoon, so you can do something fun, or clean your apartment, or do chores, but you can't do it all.

Case study questions

- 1 Explain how 'spoon theory' captures the idea of health and wellbeing as a resource.
- 2 Is there a way that Christine could have increased the number of 'spoons' available to her?
- 3 Think of a time in your life when your level of health and wellbeing prevented you from achieving a goal. Describe how this happened.
- 4
 - a Pick a goal or responsibility you currently have in your life. For example, you want to achieve a high ATAR, or you need to work to pay for a holiday, or you are a carer for a family member.
 - b For each dimension of health and wellbeing, provide one element that allows you to achieve this goal. Describe one way that poor health in this dimension might hinder your ability to achieve this goal.
 - c Do you think you would be able to achieve this goal if one of the dimensions was in poor health?

Health and wellbeing is a resource that is also important on a national level. An individual who is healthy is able to meet their needs, which enables them to pursue their goals and aspirations. This individual is also better able to provide care for family members and friends, volunteer and contribute to their community. Being healthy also increases productivity, as the person is able to work longer and pay taxes, increasing economic development. The health and wellbeing of individuals also benefits their community, both locally and nationally. When people are healthy, it limits the demands placed on community and societal resources.

Health and wellbeing is also important as a resource as it can contribute to the social development of a country. It can also increase the ability of people to exercise their human rights. For example, countries in which there is a high level of health and wellbeing are more likely to be able to access education and have increased political participation. Higher levels of health and wellbeing are also associated with increased political stability and security, and therefore many view health and wellbeing as a resource that can be used to increase levels of peace within countries.

Global benefits of optimal health and wellbeing

When considering the importance of health and wellbeing as a resource, we also need to look beyond ourselves and our local environment. While Australia is somewhat isolated by virtue of being an island nation, the world seems far smaller today than it did 100 years ago. With increasing international travel, the internet enhancing communication, and a globalised economy with strengthened international trade, countries are more closely connected than ever before. The health and wellbeing of one country cannot be isolated, and so health and wellbeing needs to be considered in a global context. The recognition of the global importance of health and wellbeing is what led to the development of the World Health Organization. For these reasons, it is now recognised that investing in health and wellbeing has global benefits.

Some global benefits of pursuing optimal health and wellbeing include:

- flow-on effects between countries. Increasingly, health in one country can affect other countries. For example, preventing outbreaks of serious illness in one country can in turn stop it spreading to other countries.
- increases in social and economic development, such as a better standard of living and higher employment rates. Ensuring children are healthy can increase the likelihood that they will receive an education and find employment when they get older. Ensuring adults are healthy can increase the likelihood that they will be employed, therefore increasing their standard of living and contributing to eliminating the cycle of poverty. The global benefits of increases in a country's social and economic development include a lower reliance on international aid, and increased possibility of trade.
- increased security and freedom, including access to human rights. High rates of illness have a destabilising effect on countries, and pose security risks. They can also decrease the ability of individuals to access their human rights. In the era of increased globalisation, local security threats often have regional and global implications.

When the WHO was founded in 1948 it was decided that, from 1950 onwards, 7 April each year would be celebrated as World Health Day. This was a way for the organisation to draw worldwide attention to a different global health issue each year. Examples of health issues that have been a focus are depression, diabetes, food safety and blood pressure. Events such as World Health Day help us to remember that health and wellbeing is not just an individual issue, but also a national and global issue.

Review and reflect

- 1 What clarification did the Ottawa Charter offer to the WHO definition of health?
- 2 Describe what it means when health and wellbeing is said to be a resource.
- 3 Provide two examples of how health has allowed you to meet your needs, or to achieve your goals or aspirations.
- 4 Provide two examples of how health and wellbeing has prevented you from meeting your needs, or from achieving your goals or aspirations.
- 5 Give two reasons why health is important:
 - a individually
 - b nationally.
- 6 Describe three global benefits of promoting optimal health and wellbeing.

Prerequisites for health

In order to improve health and wellbeing, we need to understand the conditions necessary for health and wellbeing to exist. It would seem obvious that the actions taken by individuals are the key factor that determines their level of health and wellbeing. Research has shown, however, that of all the factors that influence health and wellbeing, many exist in the individual's environment and are beyond their control. The benefits of good health and wellbeing are experienced individually, nationally and globally, and likewise, the responsibility should also be shared.

One of the important achievements of the *Ottawa Charter for Health Promotion* was that it emphasised the impact of the environment on the health and wellbeing of individuals and populations, and established prerequisites for health. The Ottawa Charter proposed that the prerequisites for health are:

- peace
- shelter
- education
- food
- income
- stable ecosystem
- sustainable resources
- social justice and equity.

These prerequisites form the basis of how we work to improve health and wellbeing. Importantly, rather than relying upon changing the behaviour of individuals to lead to healthy outcomes, they focus on creating an environment in which it is possible for health and wellbeing to exist. This broad range of factors extends beyond the individual or the health sector alone, and requires action from a range of sectors to achieve. Despite extensive and continuing work over the past 30 years, many people around the world still lack access to these basic prerequisites for health.

Peace

Peace as a prerequisite for health refers to the absence of violence or conflict, such as civil or international war, political or social unrest, or riots. Peace is closely linked with health outcomes, because without peace, health cannot exist. Increased peace is associated with better health outcomes.



Fairfax Syndication/Andrew Meares

Figure 1.9 The Cronulla riots took place in Australia in 2005.

Measures such as the Global Peace Index (GPI) have been developed to attempt to measure the level of peace experienced by different countries around the world. GPI is calculated annually, and show that the level of global peace has been declining steadily for the past decade.

Declining levels of peace are important given the close association between peace and health outcomes. Some examples of the impact of conflict on health outcomes are:

- the violence associated with conflict – for example, fights, bullets and explosions can affect physical health due to the increased risk of injury
- the psychological distress often associated with the trauma of conflict – for example, high levels of anxiety, post-traumatic stress disorder (PTSD) and depression are found in those who have experienced conflict
- the damage often caused to health care infrastructure during conflict – doctors may have fled or been killed, hospitals and other medical facilities may have been damaged, and pharmaceuticals might no longer be available. This leads to people not being treated for medical conditions, leading to poorer health outcomes
- the diversion of economic resources to military forces or policing – this can lead to a lack of resources in the health sector, resulting in reduced access to treatment for health conditions. Increasing peace can shift the balance back to health care.
- social impact of displacement – people being forced to flee their homes and everything that is familiar to them can cause social isolation, as well as economic instability and hardship. Between 2007 and 2015, approximately 60 million people were forced to flee their homes due to conflict.

RANK	COUNTRY	SCORE	RANK	COUNTRY	SCORE	RANK	COUNTRY	SCORE	RANK	COUNTRY	SCORE
1	Iceland	1.192	11	Finland	1.429	21	Netherlands	1.541	31	Romania	1.649
2	Denmark	1.246	12	Ireland	1.433	22	Poland	1.557	32	Latvia	1.680
3	Austria	1.278	13	Bhutan	1.445	23	Mauritius	1.559	33	Costa Rica	1.699
4	New Zealand	1.287	14	Sweden	1.461	24	Slovakia	1.603	34	Qatar	1.716
5	Portugal	1.356	15	Australia	1.465	25	Spain	1.604	35	Uruguay	1.726
6	Czech Republic	1.360	16	Germany	1.486	26	Croatia	1.633	36	Estonia	1.732
7	Switzerland	1.370	17	Norway	1.500	27	Chile	1.635	37	Lithuania	1.735
8	Canada	1.388	18	Belgium	1.528	28	Botswana	1.639	38	Madagascar	1.763
9	Japan	1.395	19	Hungary	1.534	29	Bulgaria	1.646	39	Italy	1.774
10	Slovenia	1.408	20	Singapore	1.535	30	Malaysia	1.648	40	Zambia	1.783

THE STATE OF PEACE



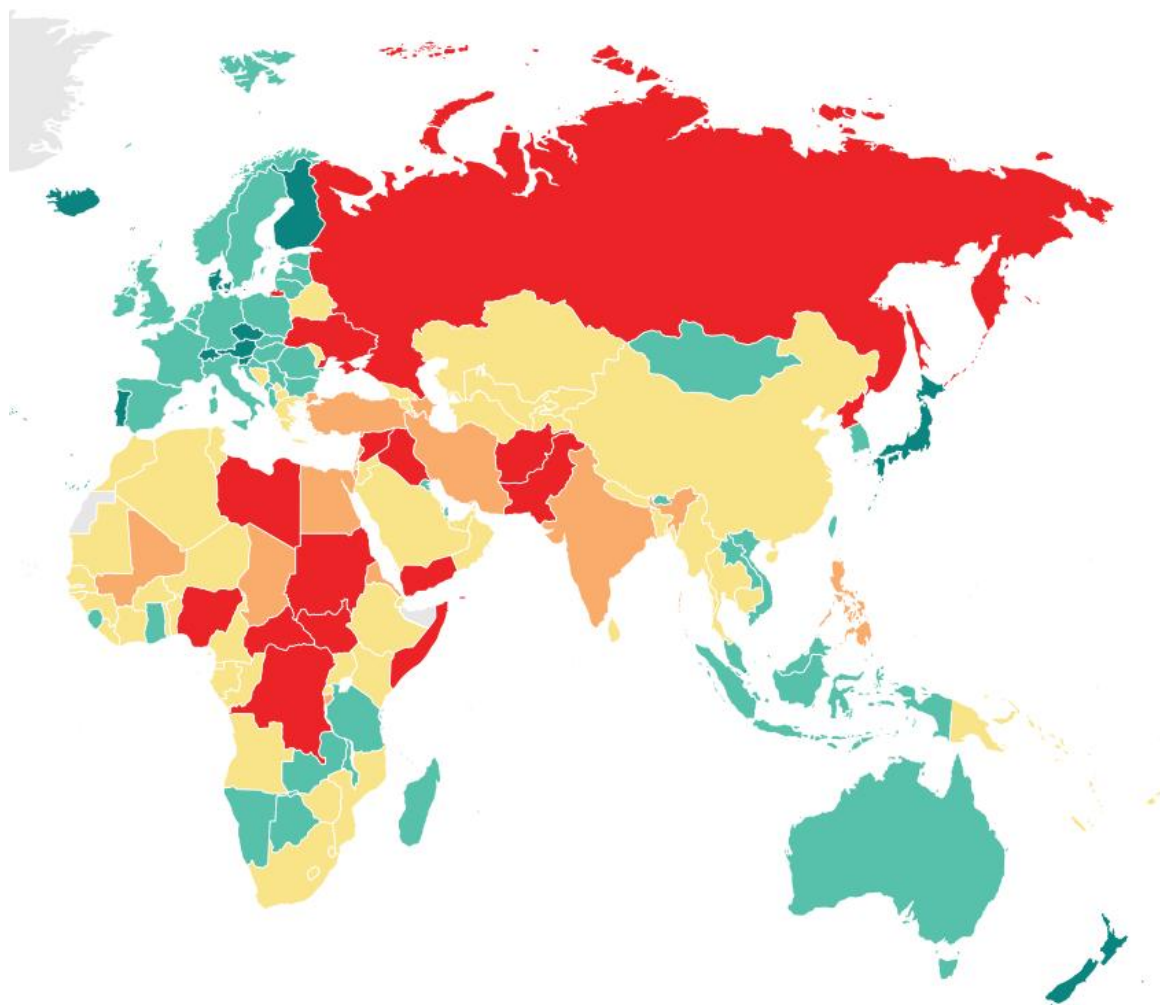
2016 GLOBAL PEACE INDEX

A SNAPSHOT OF THE GLOBAL STATE OF PEACE

RANK	COUNTRY	SCORE	RANK	COUNTRY	SCORE	RANK	COUNTRY	SCORE	RANK	COUNTRY	SCORE
79	Gabon	2.033	90	Swaziland	2.074	101	Uganda	2.148	111	Honduras	2.237
80	Paraguay	2.037	91	Morocco	2.086	101	Guinea	2.148	111	El Salvador	2.237
81	Bolivia	2.038	92	The Gambia	2.091	103	United States of America	2.154	113	Niger	2.239
82	Greece	2.044	92	Jamaica	2.091	104	Cambodia	2.161	114	Republic of the Congo	2.249
83	Bangladesh	2.045	94	Macedonia (FYR)	2.092	105	Brazil	2.176	115	Myanmar	2.256
84	Trinidad and Tobago	2.056	95	Guyana	2.105	106	Belarus	2.202	116	Guinea-Bissau	2.264
85	Georgia	2.057	96	Jordan	2.127	106	Turkmenistan	2.202	117	Guatemala	2.270
85	Cuba	2.057	97	Sri Lanka	2.133	108	Algeria	2.213	118	Cote d' Ivoire	2.279
85	Peru	2.057	98	Angola	2.140	109	Uzbekistan	2.216	119	Ethiopia	2.284
88	Burkina Faso	2.063	99	Papua New Guinea	2.143	110	Armenia	2.218	120	China	2.288
89	Haiti	2.066	99	Dominican Republic	2.143						

Figure 1.10 Extract from the Global Peace Index report, showing levels of peace around the world

41	Taiwan	1.787	51	Kuwait	1.842	60	Bosnia and Herzegovina	1.915	69	Nicaragua	1.975
42	Indonesia	1.799	52	Laos	1.852	61	United Arab Emirates	1.931	70	Senegal	1.978
43	Sierra Leone	1.805	53	South Korea	1.858	62	Equatorial Guinea	1.940	71	Cyprus	1.994
44	Ghana	1.809	54	Albania	1.867	63	Lesotho	1.941	72	Benin	1.998
45	Malawi	1.817	55	Namibia	1.873	64	Tunisia	1.949	73	Liberia	1.998
46	France	1.829	56	Timor-Leste	1.879	65	Moldova	1.953	74	Oman	2.016
47	United Kingdom	1.830	57	Montenegro	1.884	66	Togo	1.954	75	Kazakhstan	2.019
48	Serbia	1.834	58	Tanzania	1.899	67	Argentina	1.957	76	Ecuador	2.020
49	Panama	1.837	59	Vietnam	1.906	68	Mozambique	1.963	77	Kosovo	2.022
50	Mongolia	1.838							78	Nepal	2.026



121	Djibouti	2.292	132	Bahrain	2.398	143	Venezuela	2.651	154	Libya	3.200
122	Tajikistan	2.293	133	Iran	2.411	144	Israel	2.656	155	Sudan	3.269
123	Mauritania	2.295	134	Azerbaijan	2.450	145	Turkey	2.710	156	Ukraine	3.287
124	Kyrgyz Republic	2.297	135	Eritrea	2.460	146	Lebanon	2.752	157	Central African Republic	3.354
125	Thailand	2.312	136	Chad	2.464	147	Colombia	2.764	158	Yemen	3.399
126	South Africa	2.316	137	Mali	2.489	148	Palestine	2.832	159	Somalia	3.414
127	Zimbabwe	2.322	138	Burundi	2.500	149	Nigeria	2.877	160	Afghanistan	3.538
128	Rwanda	2.323	139	Philippines	2.511	150	North Korea	2.944	161	Iraq	3.570
129	Saudi Arabia	2.338	140	Mexico	2.557	151	Russia	3.079	162	South Sudan	3.593
130	Cameroon	2.356	141	India	2.566	152	Democratic Republic of the Congo	3.112	163	Syria	3.806
131	Kenya	2.379	142	Egypt	2.574	153	Pakistan	3.145			

Shelter

A shelter is a structure that protects people from the elements and provides a place to live, either temporarily or long term. Adequate housing is a fundamental human right, and access to affordable and adequate housing is essential to achieving health. For shelter to be adequate and enable health, it should:

- provide protection from the environment, including elements such as rain, wind and extreme temperatures
- be safe, with minimal chance of injury – for example, it should be free of trip hazards and toxins such as asbestos, lead and pollutants
- be sanitary, to prevent the spread of disease or illness, with working toilets, removal of rubbish and appropriate ventilation
- house an appropriate number of people, so it is not overcrowded.



Figure 1.11 Adequate shelter is a fundamental human right to which all people are entitled, and access to affordable housing is essential to achieving health.

There are numerous documented links between shelter and health outcomes.

- For people who are homeless, common chronic conditions such as high blood pressure, diabetes and asthma can become worse because there is nowhere to store medications and equipment such as syringes.
- Those who lack shelter are more at risk of violence, due to a lack of security. This poses risks not only to physical health but also to emotional health due to stress and anxiety.
- Chronic conditions such as asthma can become more serious in houses where there are cockroaches, mice and mould. These factors are common in poor shelter, and can lead to more hospitalisations for asthma, indicating a decrease in physical health.
- The highly stressful situations faced by those who lack shelter can lead to poor emotional health, including anxiety, depression and substance abuse.
- Overcrowding, or having a large number of people in a small shelter, can lead to an increase in contagious illness. It can also lead to poorer emotional health outcomes as people struggle to find their own space. In 2006, individuals reporting the worst physical and emotional health (the bottom 20%) were twice as likely to live in poor conditions or an overcrowded dwelling (AIHW 2016).

Affordability of housing is related to health outcomes – if housing is not affordable and accessible, huge stresses are placed on individuals, who are forced to choose between needs, such as healthy food, health care and housing. This can have a flow-on impact on health outcomes. It also causes emotional strain and stress, which can contribute to the development of mental illness, and can cause problems in families, leading to social health issues.

Increasing an individual's access to shelter can empower them and increase their ability to manage other aspects of their lives that affect their health.

Education

The link between education and health outcomes is well established, being observed in many countries around the world over different time periods. Education is linked to a variety of health outcomes, and is known to have large and persistent effects that are often intergenerational. Increased access to education is often associated with increased health outcomes.

Education can be linked to increased health outcomes indirectly through other prerequisites – education means people are more likely to achieve stable employment and therefore a stable income, which increases their access to shelter and nutritious food.

Education also has direct impacts on health outcomes. For example:

- education can be associated with higher levels of self-esteem and self-efficacy, leading to greater emotional health
- educated individuals have greater access to health information than those without education. The skills and knowledge gained through schooling can help people absorb health information and demonstrate health-seeking behaviours such as avoiding or reducing smoking, eating nutritious food and exercising, leading to improved health outcomes.
- education can nurture academic and cognitive skills by encouraging curiosity and problem solving. These academic skills are an element of mental health.
- educational attainment is associated with higher levels of social support and therefore with improved social health outcomes.

Women with six or more years of education are more likely to seek prenatal and postnatal care, have an assisted childbirth, and have lower fertility rates. All these factors can lead to positive health outcomes by reducing the health risks associated with pregnancy and childbirth. Educated mothers are also more likely to immunise their children than mothers with no schooling. This increase in resistance to disease promotes positive physical health.

Food

Food allows our body to function; we cannot survive without it. Beyond this basic survival, people need consistent access to affordable, safe and nutritious food in order to achieve optimal health. The types and amount of foods we have access to play a significant role in determining the level of health we experience.

Some of the ways in which food can affect health outcomes are described below.

- Consumption of contaminated food prevents many people from achieving health, with the World Health Organization estimating that almost one in 10 people fall ill each year as a result of eating contaminated food. The impact on health can include short-term symptoms such as vomiting and diarrhoea, as well as long-term complications for health, such as cancer, kidney and liver failure, and brain and neural disorders.

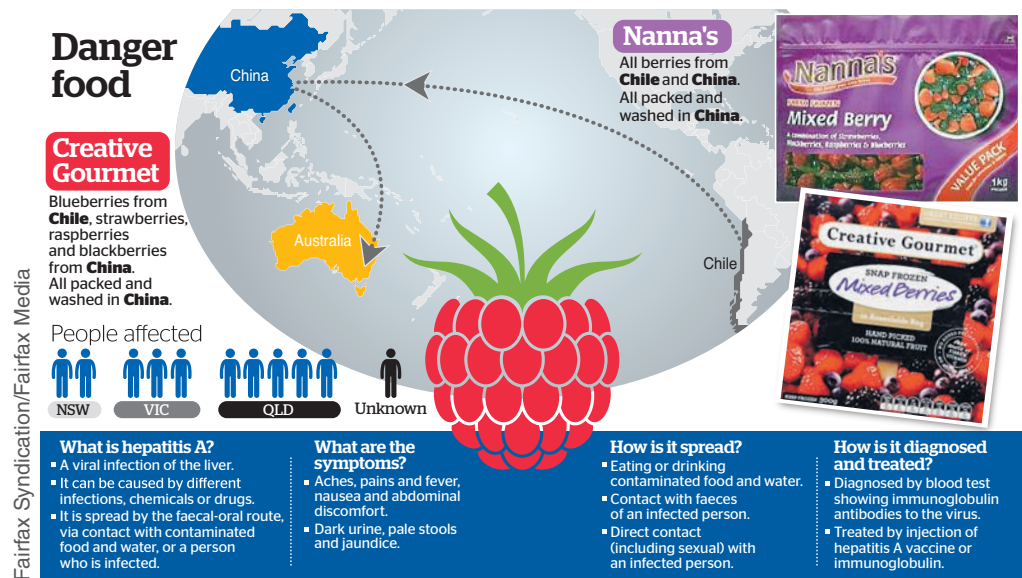


Figure 1.12 Contaminated frozen berries were recalled in Australia in 2015. The berries had been imported from countries including Chile and China, and sold in Australia, leading some customers to contract hepatitis A.



Figure 1.13 This child is suffering from malnutrition as a result of chronic hunger.

- The United Nations Food and Agriculture Organization (UNFAO) estimates that from 2014 to 2016, around one in nine people globally experienced chronic hunger (FAO, IFAD and WFP 2015). People who experience chronic hunger are likely to suffer malnutrition, meaning they do not receive sufficient nutrients from food. Malnutrition has a number of impacts on health, including:
 - reduced immune functioning, which can lead to increased rates of disease
 - iodine deficiency: iodine is an important nutrient, and iodine deficiency is a leading cause of intellectual disability.
- Over-nutrition is the consumption of more nutrients and energy than the body requires, leading to weight gain, which puts individuals at risk of obesity. Globally, approximately 1.9 billion adults are overweight, and over 600 million are obese (WHO 2016). Obesity is the excessive accumulation of fat. It can affect health through its association with a number of conditions including diabetes, cardiovascular disease and some cancers. Obesity has also been linked to increased discrimination, isolation and bullying (social health), and lower self-esteem and depression (emotional health). Obesity and food security are closely linked. The increasing availability of cheap, energy-dense and nutrient-poor food, as well as decreased access to affordable, nutritious food, is associated with increased rates of obesity globally.
- Food is an important aspect of culture, and sharing food can promote social health. This is particularly important for families, where consuming a family meal together has important benefits.
- Food is related to spiritual traditions throughout the world. For example, fasting, avoiding certain foods and praying at mealtimes can have an important place in people's beliefs and value systems, and can be associated with spiritual health.

Income

Income as a prerequisite for health refers to having a living income that is above the poverty line. Income is necessary to ensure access to resources that we need in order to live, and it is closely associated with health outcomes. Higher levels of income are generally associated with more positive health outcomes, while lack of income, which is a major factor in experiencing poverty, is associated with poorer health outcomes. Given that approximately 1.3 billion people globally live in extreme poverty (on less than US\$1 per day), and nearly 3 billion live on less than US\$2.50 a day, this prerequisite has a profound impact on health.



Shutterstock.com/De Visu

Figure 1.14 An income is necessary to ensure access to resources that people need in order to live, and is closely associated with health outcomes.

Having an income affects our health indirectly by enabling us to access other prerequisites such as adequate shelter and nutritious food, which in turn allow us to achieve a basic level of health. Examples of ways in which income can affect our health more directly are described below.

- Lower levels of income are associated with increased feelings of stress, depression and anxiety, which signals a decrease in emotional health. Large-scale studies of health (e.g. Sareen et al. 2011) have shown that lower income is associated with higher levels of mood disorders such as depression.
- An income can increase a person's access to health care (e.g. through health insurance, private providers). Having an income also provides access to lifestyle factors that can increase one's enjoyment of life or otherwise promote health (e.g. attending gym, buying a bike, playing sport).
- A population that earns an income is paying more money in taxes, so more money is available to be spent on health promotion, health care systems and infrastructure (e.g. parks, exercise facilities and green areas). This leads to increased health outcomes for the population.
- Those with low levels of income are more likely to have low levels of social support and higher rates of social isolation, indicating poorer social health.
- For an individual, working can provide positive social interactions, increase self-esteem and confidence through achievements in the workplace, and provide a positive sense of identity.

Stable ecosystem

Humans do not live in isolation. We are in a complex network with other organisms such as animals and plants, and the environment around us, which together make up a stable system. An ecosystem includes a delicate balance between organisms that act as producers, and those that act as consumers or decomposers. Decomposers recycle important elements in our environment, such as oxygen, water and carbon. It is essential that consumption, production and decomposition are balanced, or the system could collapse. An ecosystem can only recover from disruptions and return to stability if the disruptions are not too extreme or long lasting. Human activities such as deforestation, building dams or diverting water, and increasing agriculture are placing a significant strain on the earth's ecosystems, to the extent that many are now in decline.



Figure 1.15 While ecosystems can recover from disruptions, if a disruption is too extreme or long lasting, it can be very hard to correct and return to a stable system. Disruptions to the ecosystem can mean that it struggles to regulate air quality, which impacts on physical health.

The WHO has acknowledged the importance of natural ecosystems, stating that they are 'indispensable to the well-being of people throughout the world' (WHO 2005, p.12). An ecosystem provides important benefits, known as ecosystem services, which are essential for our health and wellbeing. A stable ecosystem is important for health in a number of ways, including the reasons listed below.

- A stable ecosystem purifies and replenishes water supplies. Increasing demand for water, and disruptions to the water cycle within an ecosystem by constructing dams or diverting the flow of water, for example, have reduced the availability of clean water for approximately 1–2 billion people worldwide.
- The ecosystem helps regulate air quality. Poor air quality is a major environmental risk to health, as it causes a range of impacts on physical health, including cardiovascular disease, some types of cancer (e.g. lung cancer), lower respiratory infections (e.g. pneumonia and bronchitis) and chronic respiratory diseases (e.g. chronic obstructive pulmonary disease, COPD).
- The environment is closely linked to spiritual health: our local environment is linked to our sense of place and cultural identity, either generally or through sacred places. This may be particularly the case with Indigenous populations who have close spiritual connections to the land. Loss of this land can have a negative impact upon the spiritual health of individuals.

- Loss of land associated with ecosystem decline can force migration of people who depend upon the land for their livelihood, such as farmers. This can cause disruption and lead to poorer social health outcomes.
- The environment is linked to our emotional health. Engaging with the natural environment through our senses is important for our emotional wellbeing and is linked to lower levels of stress and depression, and higher levels of self-confidence and self-esteem.
- Changes to an ecosystem can result in an environment that is more favourable for disease. For example, deforestation in the Amazon has led to environmental conditions that have increased numbers of mosquitos. This has led to more cases of mosquito-borne diseases such as malaria, leading to poorer health outcomes.

Sustainable resources

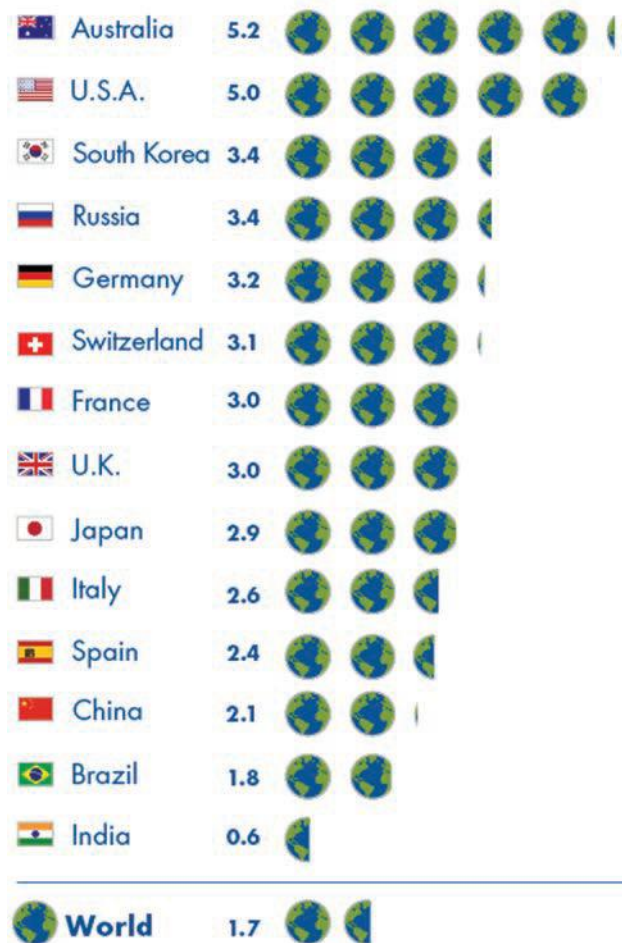
Natural resources such as water, soil, energy, minerals and metals are central to our lives. These resources feed and shelter us, and provide our material needs over the course of our lives. Humans need natural resources to survive, and we need to ensure that these resources continue to be available for future generations.

With the global population at more than 7 billion, and living with wasteful consumption, the earth's natural resources are under greater pressure than ever before. To continue to sustain the human population, the earth's resources need to be managed carefully, through reduced consumption and greater efficiency. We currently use more of the earth's resources than is sustainable, and there is a real risk that these resources will no longer be available in the future. The concept of an ecological 'footprint' has been developed to attempt to estimate how much of the global resources individuals use to sustain their way of life. Australia currently has one of the biggest ecological footprints per capita in the world. Globally, if we compare our ecological footprint to the biocapacity of the earth (the amount of resources it can produce to sustain humans) it is clear that we are in 'overshoot' – consuming more than is sustainable.

Below is a list of the ways that sustainable resources contribute to health outcomes.

- Clean water is an essential resource. Poor management of water resources has meant many people around the world have a contaminated water supply. This is associated with poorer health outcomes, including preventable illnesses such as cholera, dysentery and typhoid, and parasite infestation. It is estimated that 800 000 people die every year from diarrhoeal diseases caused by unsafe water. Ensuring access to a sustainable supply of water can reduce the impact on health outcomes.

How many Earths do we need if the world's population lived like...



Source: Global Footprint Network National Footprint Accounts 2017

- Health depends on food being a sustainable resource. Food is a living and renewable resource; however, current unsustainable practices and exploitation are putting significant demands on this resource. For example, overfishing has pushed some fish stocks to well below sustainable levels.
- Using sustainable resources such as wind, solar or water for electricity generation is associated with positive health benefits. Electricity underpins modern life, and without it we would lose many health services such as respirators, MRIs and hospitals. We currently rely heavily on non-renewable fossil fuels, which are subject to depletion. Moving from fossil fuels to more sustainable energy resources such as wind or solar power, and becoming more efficient in how we use electricity, will also have positive health outcomes as emissions from burning fossil fuels are linked to respiratory and cardiovascular disease.
- Depletion of resources is associated with social inequity, as it leads to increased competition for resources. This competition can in turn develop into social unrest and conflict, which impacts negatively upon health outcomes.

Social justice and equity

Social justice and equity as a prerequisite for health refers to the need for all people to be valued and receive fair treatment. It means the rights of all people in our community are to be considered in a fair and equitable manner, with freedom from discrimination or oppression, and that they are given the freedom to exercise their human rights. Without social justice and equity, it is not possible to achieve optimal health.

A common way of measuring the level of social justice and equity in a society is to look at the distribution of wealth, and in recent years this has become increasingly unbalanced. It is estimated that the richest 1% of people have a combined wealth that is greater than the rest of the world (Oxfam 2017). A large gap between rich and poor represents poor social justice and is associated with poorer health outcomes overall.

Some examples of the ways in which social justice and equity may impact on health outcomes are described below.

- Discrimination is associated with poorer health outcomes. Social exclusion and isolation can result when people are marginalised or face discrimination, and discrimination is also associated with decreased immune, reproductive and cardiovascular health. It also has well-established links to higher rates of anxiety and depression.
- Societies in which social justice is absent are more prone to corruption. Corruption has a negative impact on health outcomes. For example, high levels of corruption mean government money may be diverted away from health spending, leading to a reduced ability to detect and treat illness.
- Social justice entails access to health care. By having in place systems that enable everyone to access a range of health care services regardless of their income, education level, race or any other form of discrimination, health outcomes can be improved. Illnesses can be detected earlier and treatments received.

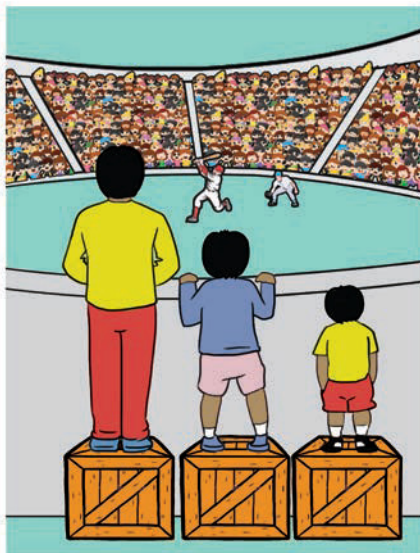
Learning tip: Equality versus equity

It is important to understand the difference between equity and equality, two terms that you will encounter throughout this study.

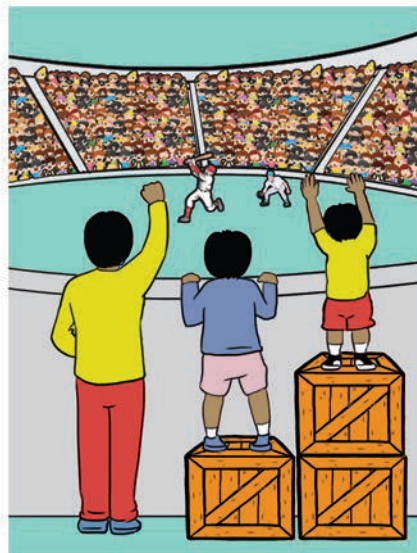
Equality means that everyone is given the same 'helping hand', or has access to the same *inputs*, regardless of need. Everyone is given access to the same opportunity or resource.

Equity means everyone is given the assistance or resources that are needed so that everyone can achieve the same *outcomes*.

Equality is focused on equal provision of resources or assistance, while equity focuses on equal outcomes. The terms are not interchangeable, and it is important to think about which term is correct in the context being discussed.



Equality



Equity

Review and reflect

- 1 Describe what is meant by 'prerequisites for health'.
- 2 List the prerequisites for health that were identified in the Ottawa Charter. For each prerequisite, provide a brief description.
- 3 For each prerequisite, identify two examples of how it impacts on health outcomes.
- 4
 - a Rank the prerequisites of health in order from most to least important with regards to their impact on health outcomes.
 - b Justify why you think that the prerequisite placed in the first position has the greatest impact on health outcomes.

Chapter summary

- There have been many definitions of health and wellbeing. As it is subjective, and dependent on the time and place in which it is defined, there is no complete definition of health and wellbeing.
- Health and wellbeing are closely related. In this study, wellbeing is considered to be an implicit part of health, and so health and wellbeing are combined as a single concept.
- Wellbeing relates closely to health but is more holistic, capturing a person's subjective and objective experience of their health.
- Illness is an individual experience of poor levels of health.
- There are five dimensions of health and wellbeing: physical, emotional, social, mental and spiritual. These dimensions interrelate and influence each other in complex ways.
- The 1986 *Ottawa Charter for Health Promotion* viewed health as a resource. Health is not simply valued for its own sake; it allows us to achieve our goals and aspirations, leading to increased development.
- Optimal health has benefits beyond the individual, and is important to the local community, nationally and globally. Globalisation now means global health is vital. For example, increasing travel means that communicable diseases in one country can quickly spread.
- The prerequisites for sustaining health are peace, shelter, education, food, income, a stable ecosystem, sustainable resources, and social justice and equity. These prerequisites improve health outcomes but need cooperation of individuals, governments and organisations to be achieved.
- Peace is the lack of violence or conflict such as civil or international war, political or social unrest, or riots.
- Shelter provides escape from the weather, a safe place to store food and medicine, and security.
- The higher the levels of education achieved, the better the health outcomes. For example, individuals who can read are better able to access health messages.
- Safe, nutritious and affordable food is essential. Adequate nutritional intake allows our body to function optimally.
- Income (a living income above the poverty line) ensures access to resources that we need to live, and higher levels of income are associated with more positive health outcomes. Lack of income, a major factor in experiencing poverty, is associated with poorer health outcomes.
- A stable ecosystem is vital for our health. For example, a stable ecosystem provides access to clean water and air.
- Social justice and equity refers to the need for all people to be valued and receive fair treatment. It means freedom from discrimination or oppression, and to exercise human rights.

Exam-style questions with sample answers

- 1** Describe the following dimensions of health and wellbeing: **(2 marks)**
- a** spiritual **b** physical

Sample answers:

- a** The physical dimension of health and wellbeing relates to the functioning of the body and it's systems, including the physical capacity to perform daily activities or tasks. Examples of this dimension include maintaining a healthy weight, energy levels and physical fitness.
- b** The spiritual dimension of health and wellbeing relates to ideas, beliefs, values and ethics that arise in the minds and conscience of human beings. This dimension includes the sense of meaning and purpose that an individual has, their morals and beliefs which guide their actions.

Important points:

In previous exams, similar questions have been worth 1 or 2 marks. The study design does not state that you will be required to know definitions, so it is expected that you will need to know descriptions of these terms rather than definitions. The number of key points in the past have been related to the number of marks; for example, a description worth 2 marks has often required two key points in the description.

- 2** Using an example, explain how the dimensions of health and wellbeing are interrelated. **(2 marks)**

Sample answers:

The dimensions of health and wellbeing are interrelated because the status of one dimension can affect all the others. A change in any one dimension of health and wellbeing can affect all dimensions. For example, someone who undertakes physical activity will increase their level of physical fitness, but they will also likely experience an increase in the emotional dimension as exercise can promote feelings of satisfaction and confidence. These feelings may lead to greater confidence in social situations and an increase in social engagement.

Important points:

If the question states that an example is needed, your answer should provide a suitable example. It is likely that no marks could be awarded for an answer that doesn't provide an example as requested. The example should show how at least two dimensions of health and wellbeing are interrelated.

- 3** Compare and contrast the mental and emotional dimensions of health and wellbeing. (2 marks)

Sample answers:

The mental and emotional dimensions of health are similar because they are both related to the mind and brain; e.g. thinking (mental) and feeling (emotional). They are different because they relate to different functions. The mental dimension is our ability to think logically and rationally, while the emotional dimension is our ability to feel and understand a range of feelings (emotions).

Important points:

For questions of this type, you need to provide one way in which these dimensions are similar, and one way that they differ. You would need to show that you understand both of the key terms in your answer.

Questions for you to practise

- 1
 - a How does the WHO define health?
 - b List one strength and one limitation of this definition.
- 2 Where did the 'prerequisites for health' originate?
- 3 Describe actions an individual might take to increase their level of health and wellbeing in each of these dimensions:
 - a physical
 - b social
 - c emotional
 - d mental
 - e spiritual
- 4 Describe the importance of the 'prerequisites for health'.
- 5 Using your knowledge about the prerequisites for health, evaluate whether the following examples of programs might lead to improved health outcomes. Ensure you identify at least one prerequisite for health in your answer:
 - a increasing access to homeless shelters across Melbourne
 - b a disability awareness campaign to in schools to help students understand disability and promote inclusion
 - c a government subsidy to provide financial assistance, encouraging people to install solar panels and generate their own electricity.
- 6 Predict what may happen to health outcomes if the level of peace experienced by a country increased. Explain your reasoning.
- 7 What is the relationship between a stable ecosystem and health outcomes?
- 8 Food is a prerequisite for health. Describe how both under- and over-consumption of food is related to health outcomes.

Chapter 2: Measuring health status

Key knowledge

- indicators used to measure and understand health status, including 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

Key skills

- 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

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Key terms

- burden of disease
- disability-adjusted life year (DALY)
- health-adjusted life expectancy (HALE)
- health indicators
- health status
- incidence
- infant mortality rate
- life expectancy
- maternal mortality rate
- morbidity
- mortality rate
- prevalence
- self-assessed health status
- under-5 mortality rate (U5MR)

In this chapter

Introduction	page 32
Understanding health status	page 32
Mortality rate (MR).....	page 33
Life expectancy.....	page 36
Morbidity, incidence and prevalence.....	page 39
Self-assessed health status	page 40
Combined indicators.....	page 41
Health-adjusted life expectancy	page 41
Burden of disease.....	page 42
DALY	page 42

Health status in Australia.....	page 45
Life expectancy.....	page 46
Mortality.....	page 47
Burden of disease.....	page 51

Introduction

In the previous chapter, you developed your understanding of health and wellbeing and why it is important individually, locally and globally. With increasing recognition of the importance of health and wellbeing, governments and non-government organisations need to find reliable and accurate ways of measuring the level of health and wellbeing experienced by individuals and populations. This chapter looks at ways of measuring health and wellbeing, and how this information can be used.

Understanding health status

How healthy are we?

Do some people experience better or worse health than others?

Is our health improving or getting worse?

What are the biggest threats to our health?

These questions all relate to the level of health we are experiencing as individuals or groups, which is called our **health status**. An individual's health status is usually measured by a health professional, such as a doctor, and might involve tests such as blood pressure, weight according to a scale, or blood tests.

For populations we need to combine data from large groups of people to get an overall picture of how healthy they are. Populations are groups of people who share a particular characteristic of interest, such as teenagers (aged 13–19), older age groups (age 65+), males or females. Data is collected for members of the population and is presented as a set of measurements, or **health indicators**, which are a statistical representation of the health of the population.

Globally, governments and non-government organisations collect and analyse a large amount of data to monitor the health status of different populations. This data is then used for many purposes, including:

- tracking trends in health status over time
- identifying groups who have greater or poorer health than the general population
- identifying areas of health that can be targeted for intervention
- evaluating interventions that have been implemented to improve health.

A range of indicators of health status are available, and each indicator provides a particular type of information. The choice of which indicator to use depends on what kind of information you are trying to find out, such as: How many people are dying, and from what cause? How many people are suffering, and what are they suffering from? What health problems appear more or less often than others? Often a number of indicators are used together to provide a better overall picture of health status.

Three broad categories of indicators are covered in this chapter:

- indicators relating to the level of death in a population
- indicators relating to the level of ill-health in a population
- combined indicators.

health status the level of health experienced by an individual or a population at a particular time

health indicator a statistical measure used to provide information about a particular aspect of the health status of a population

Review and reflect

- 1 Define 'health status'.
- 2 Why do you think it is important to collect information about health status?
- 3 **a** What types of organisations are interested in collecting information about the health status of populations?
- b** Describe two ways that information about health status can be used.
- 4 Describe what a health status 'indicator' is.
- 5 Which dimension(s) of health are likely to be most commonly measured by health status indicators? Why do you think this is?

The first category of health status indicators relates to the level of death in a population. These indicators are mortality rate (MR) and life expectancy.

Mortality rate (MR)

Mortality rate is one of the most widely used measures of population health, because registration of deaths is required in most countries. This makes it an easy and reliable statistic to gather for a population where little or no other information is available.

Mortality rates are presented as the number of deaths per number of people. For example, the mortality rate for cancer in Australia in 2013 was 197.7 per 100 000 (AIHW 2017, Table 1.3.1). This means that, in 2013, for every 100 000 people in Australia, 197.7 died from cancer. It is important to understand that mortality rate is different from the total number of deaths.

mortality rate 'the number of deaths in a population in a given period'

Source: Australian Institute of Health and Welfare. AIHW 2016CC BY 3.0 AU <https://creativecommons.org/licenses/by/3.0/au/>

Learning tip: What is the difference between a rate and a total number?

Sometimes you will see mortality information presented as a total number rather than as a rate.

For example, in Australia in 2013 the mortality rate for cancer was 197.7 per 100 000. Given a population size for Australia of approximately 23.13 million in 2013, this means the total number of people who died from cancer in Australia was 45 728.

For comparison, in the USA it is estimated that 580 350 deaths occurred from cancer (American Cancer Society 2013). With a population size of 306.5 million, this means there is an estimated mortality rate of 189.2 per 100 000.

The mortality rates of the two countries are similar, but the total number who died is very different.

A rate is the number of times a specific event occurred relative to the size of the population. Converting a number to a rate is important, as it allows the numbers to be compared between populations of

	Total number of deaths	Mortality rate (per 100 000)
Australia	45 728	197.7
USA	580 350	189.2

different sizes. Comparing total numbers may not give an accurate indication of the relative levels of mortality in the different populations.

Sometimes you will see 'age-standardised rate'. This means the rate has been calculated taking into account the age distribution of different populations. The graphs in Figures 2.1 and 2.2 show the significant difference between the age structures for Indigenous and non-Indigenous Australians, and for the entire population in 1900 and 2000. It is important to account for this difference, as the risk of dying varies greatly with age. Without taking age structure into account, you wouldn't be able to tell whether a difference in mortality rates is due to age or other factors.



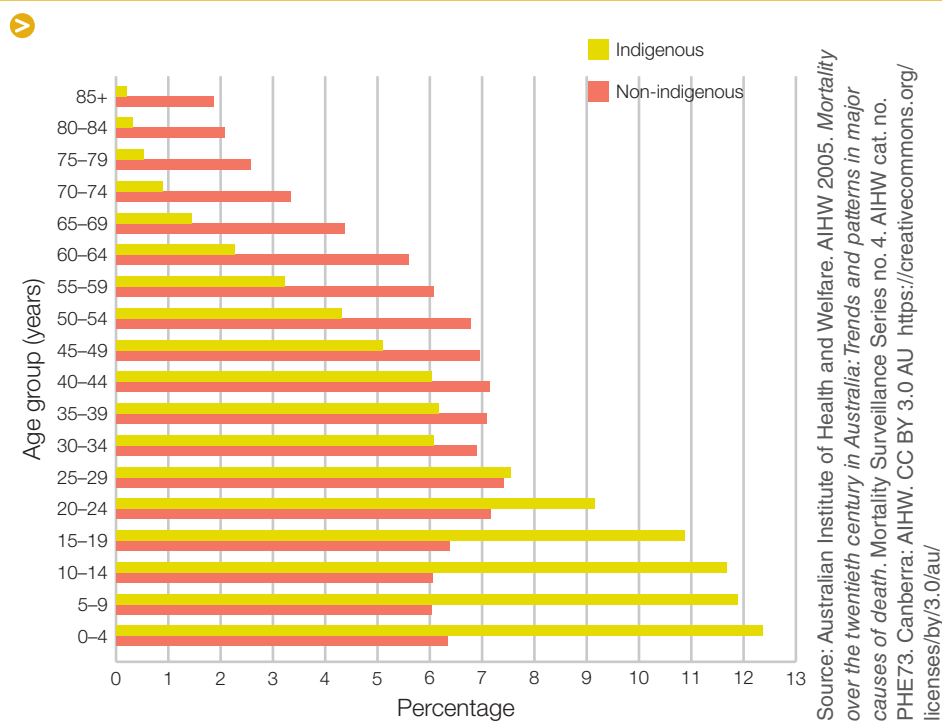


Figure 2.1 Age structure of the Australian population, by Indigenous status, 2011

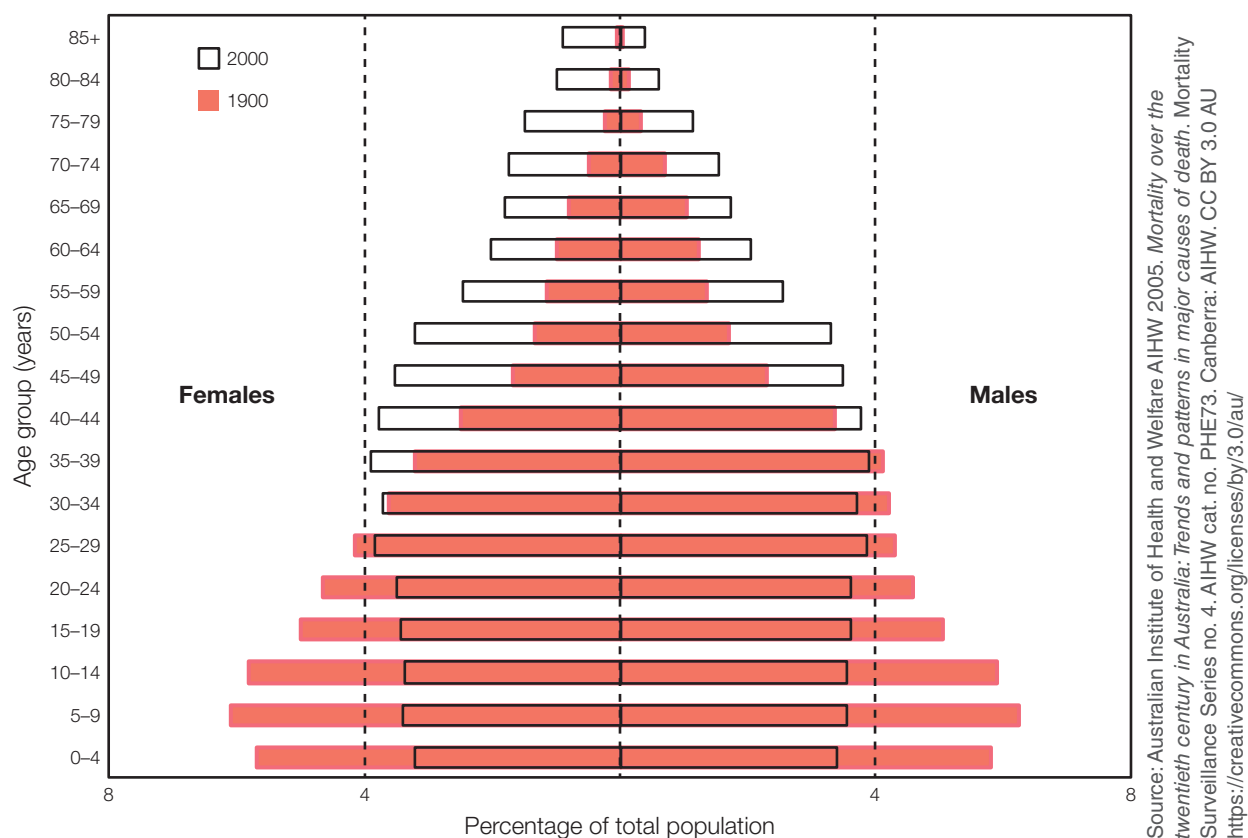


Figure 2.2 Population percentage by age group, 1900 and 2000

Often within a larger population there are smaller groups who experience different levels of health. These groups may be 'lost' in mortality rates that measure the health status of the overall population. While mortality rates for the overall population provide a good general measure of health status, analysing mortality rates for smaller sections of the population can provide valuable insights into the level of health experienced by these populations. This may help identify issues affecting individual groups that may be missed when looking at population-wide data. These measures may also be chosen because they provide a more sensitive measure of health status, as certain groups are more vulnerable to threats to their health.

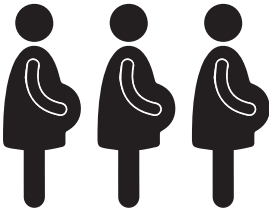
Common measures in global use break down mortality rates into different stages of the life span, and are shown in Table 2.1.

under-five mortality rate the number of deaths of children under five years of age in a population in a given period

maternal mortality rate the number of maternal deaths (during pregnancy or within 42 days of the end of the pregnancy) from a cause related to pregnancy or delivery, in a population in a given time period

infant mortality rate the number of deaths of children aged under one year in a population in a given year

Table 2.1 Mortality at different life span stages

Name		Description	Why is it used?
Adult mortality rate		The number of deaths between ages 15 and 60 in a given time period in a given population	A general measure of the health status of a population, showing the rate of death for the overall population
Maternal mortality rate		The number of maternal deaths (during pregnancy or within 42 days of the end of the pregnancy) from a cause related to pregnancy or delivery in a population in a given time period	Maternal mortality is widely acknowledged as a general indicator of the overall health of a population, of the status of women in society, and of the functioning of the health system. High maternal mortality rates often indicate wider problems with health status, gender inequalities and health services in a country.
Infant mortality rate (IMR)		The number of deaths of children aged under one year in a population in a given year	IMR has been thought to be a highly sensitive measure of overall population health. Given the vulnerability of this age group, infant mortality is often highly sensitive to factors that influence the health of the whole population, including the physical and social environment.
Under-five mortality rate (U5MR)		The number of deaths of children under the age of five years, in a population in a given time period	U5MR is a more general measure of child health, and a substitute for overall population health. The first year of life as represented by IMR is the most dangerous, with approximately half the number of deaths before age 5 occurring before the first birthday, and of these, the majority occur within the first 28 days of life due to complications related to pregnancy. However, U5MR captures the wider childhood period, expanding to include deaths in the later childhood years, which are most often due to diarrhoea, malaria or malnutrition. (WHO 2016)

Analysing mortality rates can provide useful information about trends in health status over time. Mortality rates can be used to show the relative number of deaths that occurred due to specific causes within the population. This can help to determine whether particular conditions are affecting the population to a lesser or greater degree.

Life expectancy

life expectancy an indication of how long a person can expect to live; the number of years of life remaining to a person at a particular age if death rates do not change

Life expectancy illustrates the level of mortality in a population in a simple way, and indicates how long a person can expect to live, or the number of years of life remaining to a person at a particular age if death rates do not change (VCAA 2013). Life expectancy is inversely related to mortality rate: when the mortality rate is lower, people are expected to live longer, and vice versa.

Life expectancy is commonly used because it is easy to understand. It is often used to communicate information about health status to those with little knowledge of health status indicators. Because of its simplicity, it enables quick judgements to be made about the overall level of health experienced by a population.

Life expectancy is generally reported as 'life expectancy at birth', which is the total number of years of life expected, based on current mortality rates, estimated from when you are born. Life expectancy can also be calculated at any stage in the life span. For example, 'life expectancy at 65' is the expected number of years left to an individual who is currently aged 65, or the age to which they are expected to live based on current mortality rates of people aged 65 or over. Life expectancy varies based on the age at which it is measured.

Table 2.2 Life expectancy of Australians, 2013–15

Age (years)	Life expectancy, 2013–15 (years)	
	Males	Females
0 (birth)	80.4	84.5
25	81.1	85.1
45	82.1	85.6
65	84.5	87.3
85	91.2	92.2
95	98.0	98.3

(source: adapted from ABS 2016a, Table 1.9)

Your life expectancy as it is measured throughout your life span generally gets higher at each increasing age bracket, because you have successfully passed risks that occur at each stage. With each risk that passes, your chance of living to an older age increases. For example, someone who is still alive at age 65 has passed many risks that only affect younger stages of the life span (e.g. for females, the risks related to bearing children). This means life expectancy as measured throughout the life span is a more accurate estimation of the life span from that point in time.

Is there a maximum lifespan?

Figure 2.3 shows life expectancy in the UK over the past 168 years, measured from a range of ages.

This graph highlights the changes in life expectancy from different ages over time. It can be seen that the largest change in life expectancy between 1843 and 2011 is in 'life expectancy at birth' and life expectancy measured at a young age, with smaller changes in life expectancy at older ages. This indicates that the gains in global life expectancy are largely due to a reduction in infant and under-five mortality.

Data like this has led scientists to believe there may be a maximum life span that is possible for humans, beyond which we cannot live.

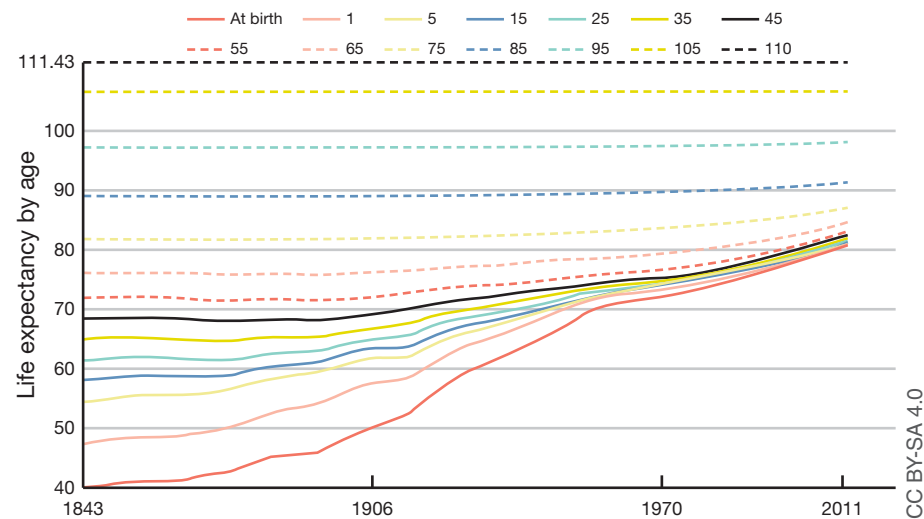


Figure 2.3 Total life expectancy in the UK by age, 1843–2011

Case study

Living to 100: Centenarians surprisingly healthy 'thanks to resilience and toughness'

By Norman Hermant, 14 January 2017

There are more people than ever aged 100 years of age and older in Australia, and a new study has found that as a group they need less home care than seniors who are approaching their 100th birthdays.

'They seem to go into old age much healthier,' said Colette Browning, director of the Royal District Nursing Service (RDNS) Institute. 'Even though they do have a number of chronic illnesses, they seem to be able to manage better.'

The RDNS Institute is part of RSL Care and RDNS, which supports more than 110 000 seniors in their homes and in residential aged care. The institute analysed the health

records of 123 centenarians, and more than 1000 'near centenarians' aged 95 to 99.

It found once seniors reached 100 years of age, their required home visits actually declined to an average of 58 home visits per client over two years. Near centenarians required an average of 72 home visits over two years.

The question is – why?

Ms Browning has some theories. Good genetics are important, and so are good habits regarding food and drink. But Ms Browning believes life experience also plays a role. 'We need to think about who these people are in terms of their life course,' she said. 'They were teenagers in the Great Depression. They were middle-aged during the '60s ... they seem to have a way of coping with stress, an attitude to life that's maybe a bit more positive.' ...





There are more ... centenarians than ever before in Australia – 4400. And that number is set to grow. The proportion of the population aged over 85 nearly doubled in the past two decades.

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Case study review

- 1 Outline the key findings of the article relating to the health of those aged over 100 versus those approaching 100.
- 2 What might be the causes of this difference?
- 3 If you were to measure the life expectancy of those aged 100 versus life expectancy at birth, which do you think would be higher? Justify your answer.
- 4 The number of centenarians in Australia is increasing. What might be the reasons behind this increase?



Getty Images/Koichi Kamoshida

Figure 2.4 People who reach their 100s need less home care than younger seniors.

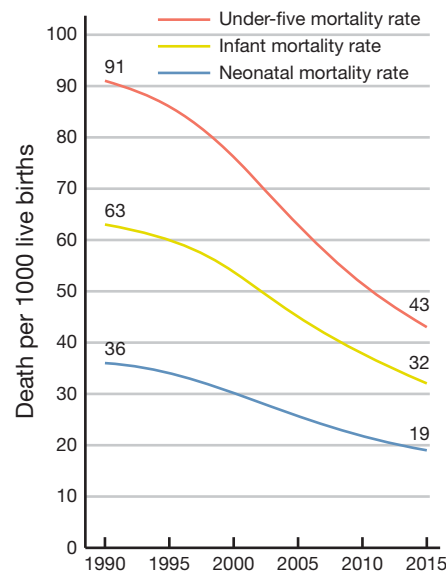
Review and reflect

- 1 Describe the following terms:
 - a mortality
 - b U5MR
 - c maternal mortality rate
 - d mortality rate
 - e infant mortality rate
 - f life expectancy at birth.
- 2 List a similarity and a difference between mortality rate and life expectancy as a measure of health status.
- 3 What is the relationship between mortality rate and life expectancy?
- 4 What is an 'age-standardised' mortality rate, and why is it used?
- 5 Provide one reason each why mortality rate and life expectancy rate are used as common measures of overall health status.
- 6 What information about health status is *not* provided by mortality rate and life expectancy?
- 7 Why does life expectancy increase as individuals get older?

Figure 2.5 Global infant mortality rates 1990–2015. ('Neonatal mortality rate' refers to deaths that occur in the first 28 days of life.)

Apply

- 8 Figure 2.5 shows global infant mortality rates and U5MR from 1990 to 2015. Referring only to the U5MR and infant mortality rates shown in the graph:
 - a Describe one trend.
 - b Explain possible reasons for the difference between infant mortality rates and U5MR.



- c Do you think the trend you identified in part a will continue? Why/why not?
- d Do you think all countries would have the same trend in mortality rates? Explain what differences might occur between countries, and why.
- 9 Consider Figure 2.6, which shows life expectancy at birth and at age 1 year by gender, for Canada, 1920–1922 to 2005–2007.
- Identify one trend shown in the graph.
 - Why would there be a difference in life expectancy between age 1 and birth?
 - Why would the gap between these numbers have changed between 1920–1922 and 2005–2007?

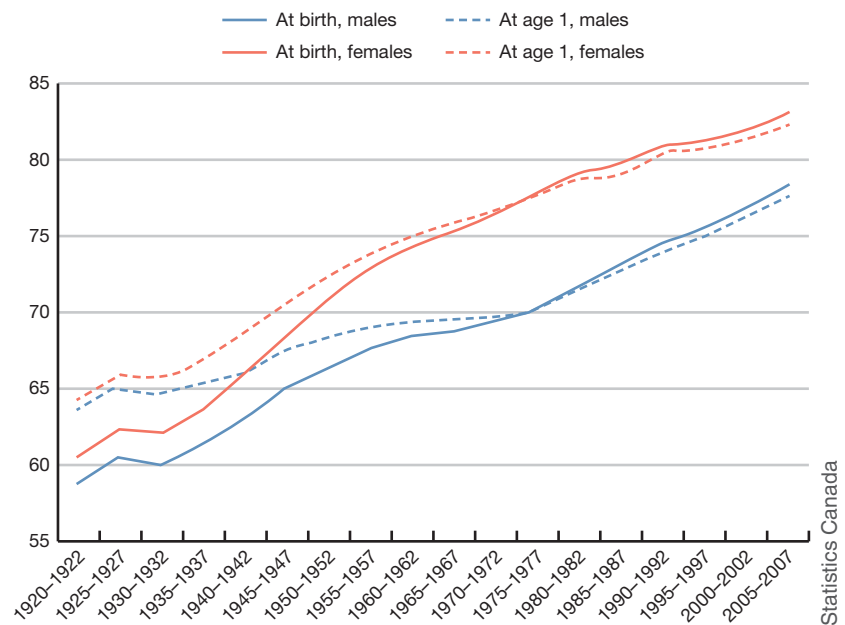


Figure 2.6 Life expectancy at birth and age 1 year

Statistics Canada

The level of death in a population is a vital measure of health status. However, when used alone it doesn't account for factors that may affect our health without resulting in death. It is important that health status indicators are also able to capture information about the level of ill-health experienced by a population.

Morbidity, incidence and prevalence

Morbidity refers to ill-health in an individual, and the levels of ill-health in a population or group (AIHW 2008). Morbidity is commonly measured using statistics known as incidence and prevalence. These two statistics are similar but have very important differences.

morbidity the level of ill-health in an individual or a population

Learning tip:

Incidence and prevalence

Incidence is the number of new cases of a disease or condition in a population in a specified period. **Prevalence** is the number or proportion of existing cases of a particular disease or condition in a population at a given time.

Figure 2.7 illustrates the difference between incidence and prevalence. Incidence (number of new cases) is like water pouring into a bath from a tap. The water that collects in the

bath is the total number of cases that exists currently (prevalence). Once in the bath, the water can either remain there, evaporate (recovery) or drain out through the plug (mortality). This means prevalence can increase when new cases emerge, and decrease when those who suffer from the condition recover or die.

Incidence and prevalence are both important because they provide different information.

Incidence helps us to understand the pattern of new cases emerging



incidence the number of new cases of a disease or condition in a population in a specified period

prevalence the number (or percentage) of cases of a particular disease or condition in a population at a particular time

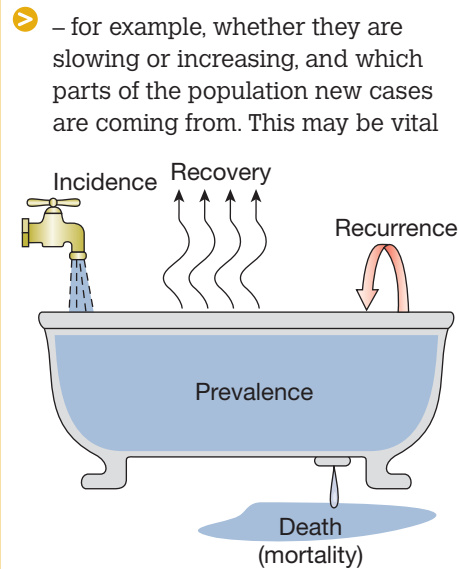


Figure 2.7 Incidence and prevalence

information in the case of epidemics, in which case incidence may be calculated for small periods such as weeks or months. Incidence can also tell us whether health promotion programs are working – for example, whether an intervention program to prevent melanoma (skin cancer) has been effective, as shown by a decreasing number of new cases.

Prevalence is important as it gives us an understanding of how widespread a condition is, and the proportion of the population affected. A condition that has a high prevalence could be of concern, because if higher proportions of people are suffering from a condition, this may place strain on the health care system.

Review and reflect

- 1 Describe:
 - a morbidity
 - b incidence
 - c prevalence.
- 2 What is the difference between:
 - a morbidity and mortality?
 - b incidence and prevalence?
- 3 Explain a situation in which:
 - a incidence would be more useful than prevalence
 - b prevalence would be more useful than incidence.
- 4 Why is collecting information about morbidity important? How might this information be used?

Self-assessed health status

Health and wellbeing is a complex concept that includes physical, social, mental, emotional and spiritual aspects. Therefore it is important that health status accurately captures information about this broad range of elements. It is also important that health status is not purely a measure of ill-health, such as morbidity and mortality, but encompasses measures that include positive health and wellbeing. The health indicators discussed so far have largely focused on physical health, with a limited capacity to capture information about other dimensions. Self-assessed health status is one way of providing this broad measure of health status.

Self-assessed health status provides an overall measure of a population's health status, based on individuals' personal perceptions of their own health and wellbeing. Self-assessments of health status can be done using a single question, such as, 'In general would you say that your health is excellent, very good, good, fair or poor?' as part of a national health survey. They can also be done using a more comprehensive health survey that collects information about different dimensions of health and wellbeing. To allow data to be collected, the survey is generally completed using a Likert Scale, which is a rating scale where the survey participant selects one option of several ranging from, for example, 'Very good' to 'Very poor'.

self-assessed health status
an overall measure of a population's health based on an individual's personal perceptions of their health

Self-assessments of health status are influenced by our subjective understanding of what 'health' means. When someone is asked, 'How healthy are you?' their answer is guided by what they understand their health to be. This means there may be inconsistencies in health status as measured through self-assessment, as opposed to objective measures such as incidence, prevalence, mortality and life expectancy, or individual assessments completed by medical professionals. What one person sees as a good state of health and wellbeing may be seen by another to be poor health and wellbeing, especially in the case of those suffering from a disability, or the elderly, where what constitutes being healthy can be relative.

Despite this possible inconsistency, self-assessment has been shown to be a strong predictor of morbidity and mortality, and to show similar findings to those of objective measures of health status. Therefore self-assessment has been increasingly reported as an indicator. It has the added benefit of being able to capture information about the subjective wellbeing of individuals, which is often missed by other measures. It can also be collected fairly cheaply and easily.

Review and reflect

1 Describe 'self-assessed health status'. 2 Do you think self-assessed health status provides a good measure of health? Explain your answer.	3 Provide one advantage and one disadvantage of using self-assessed health status as a health status indicator.

Combined indicators

In order to understand the overall impact of a range of conditions on health and wellbeing, it is important to understand the impact of both morbidity and mortality. Focusing on one or the other can make it more difficult to understand the full extent to which a condition is affecting the health and wellbeing of a population. For example, life expectancy can provide an idea of how long an individual is expected to live, but not how many of those years are spent in ill-health. Mortality and morbidity focus only on death or ill-health respectively. This problem has led to the development of health status indicators that use multiple data sources to indicate the fatal (mortality) and non-fatal (morbidity) burden of disease, to provide a summary measure of a population's health status. Two main measures are health-adjusted life expectancy (HALE), and burden of disease as measured by disability-adjusted life years (DALYs).

Health-adjusted life expectancy (HALE)

Health-adjusted life expectancy (HALE) is a measure of health status developed by the World Health Organization (WHO). It is based on life expectancy at birth, but aims to capture a more complete estimate of health. HALE estimates the number of years an individual is expected to live, adjusted to account for time spent in poor health due to any cause. HALE effectively provides a single measure of population health, capturing both morbidity and mortality.

HALE is often calculated at birth to give an estimation of length and quality of life. It can also be estimated at age 65, which provides a measurement of health status and quality of life for seniors, estimating the number of years remaining in full health. Given the ageing population, this is an important measure of the health status of older Australians.

health-adjusted life expectancy (HALE) the number of years in full health that a person can expect to live, based on current rates of ill-health and mortality

HALE can be helpful for tracking the proportion of the life span expected to be spent in good health, compared to the overall life expectancy. For example, governments might be interested if life expectancy is increasing faster than HALE, as this would indicate that more of the life span is being spent in poor health. This is a concern, as more people needing access to medical treatment would place increased demand on health services. Globally, HALE tends to show patterns that represent the level of health care available. In developed countries, the gap between life expectancy and HALE tends to be 8–12 years. This relatively long gap indicates a high quality of health care. In developing countries, the gap tends to be narrower.

Gaps that differ from those expected can be cause for concern. For example, a 2012 study published in *The Lancet* estimated that an 18-year-old female from Beijing had a life expectancy of 84 and a HALE of 56.06 (Zhou et al. 2015). This gap indicates that an 18-year-old female in Beijing can expect to spend 28 years, or roughly 41% of her life, in ill-health. Given the high level of health care available in China, this is far beyond what would be expected, and would likely trigger further investigation of the health status of this population and possible causes for this gap.

While HALE has many uses, it also has limitations. HALE cannot be used to measure the impact of specific conditions that cause ill-health. Instead, it works to represent the overall level of health or ill-health in a population. This limits its usefulness for some applications, as it cannot provide an understanding of which conditions are having the greatest impact on the health and wellbeing of a population.

Review and reflect

- 1 Describe 'health-adjusted life expectancy'.
- 2 Compare and contrast life expectancy and health-adjusted life expectancy as indicators of health status.
- 3 Why is it important to measure health-adjusted life expectancy at age 65? What additional information does it provide compared to health-adjusted life expectancy at birth?

Burden of disease

burden of disease the total fatal and non-fatal impact of a condition, measured by the unit disability-adjusted life year (DALY)

disability-adjusted life year (DALY) a measure of overall disease burden, expressed as the number of years lost to disability, ill-health or early death

years lost to disability (YLD) the number of years lost to disability or ill-health; a measure of the non-fatal burden of disease

Burden of disease combines the fatal and non-fatal impact of a disease into a single statistic, and is an invaluable measure of health status. It provides an indication of the burden that a particular disease places on populations, both in terms of how much time it causes populations to spend in ill-health, and how many years of life are lost to the condition.

DALY

To measure burden of disease, a unit called **disability-adjusted life year (DALY)** is used. DALY is calculated using the formula $DALY = YLL + YLD$.

YLD is the number of years lived with a disability, and indicates the non-fatal (morbidity) burden on a population. It is a measure of the proportion of healthy life that is lost due to living in ill-health in a particular year. YLD is influenced by the number of people living with a particular condition, how long they live with the effects of that condition, and the severity of those effects (AIHW 2016a).

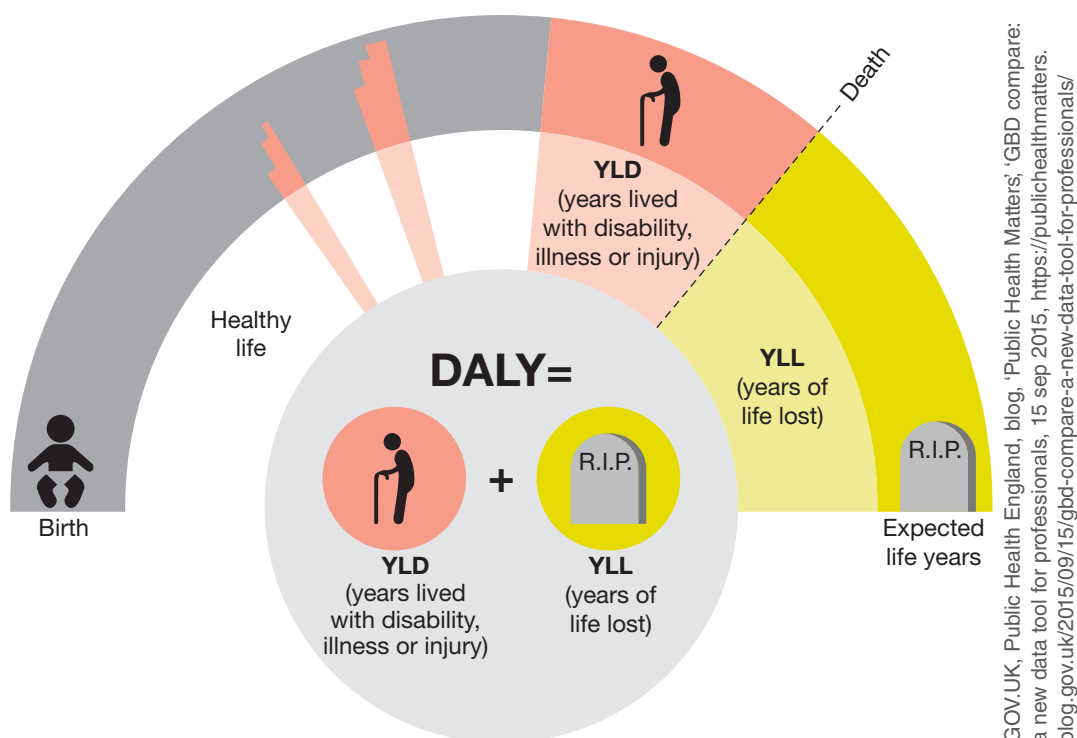


Figure 2.8 DALY is a measure of the burden of disease, measured in terms of years lost due to ill-health and/or death.

YLL is the number of years of life lost, and indicates the fatal (mortality) burden on a population. It is the number of years lost between the person's age when they died and the age they might have lived to, based on current life expectancy rates. YLL is influenced by the number of deaths, and the ages at which the deaths occur (AIHW 2016b).

One DALY is one year of 'healthy life' lost due to illness and/or death. The total of these DALYs across an entire population provides an indication of the gap between current health status and the ideal health situation, where the entire population lives to an advanced age, free of disease and disability. DALYs are calculated for many conditions, and can be added together to indicate the total disease burden for the population. (AIHW 2016b).

Burden of disease provides a large amount of information in one measure.

For example, it represents:

- the overall health of a population
- the impact of individual conditions, allowing them to be compared, whether their impact is fatal or non-fatal
- trends in health status over time
- both morbidity and mortality in a single statistic, to capture the full impact of a condition
- the proportional morbidity and mortality burden of each disease.

Information about burden of disease can be put to many uses. For example, often the money available to be spent on health services is limited. Burden of disease can help guide money towards treatment or prevention of conditions with the highest burden of disease. It can provide valuable information to help drive public policy decisions, and direct attention and health promotion messages to

years of life lost (YLL) years of life lost to premature mortality; a measure of the fatal burden of disease

where they are most needed. It highlights causes of concern, either by population group or by condition, and successes where the burden of disease has been reduced through interventions.

Burden of disease is currently used widely as a measure of global health by organisations such as WHO. It has the benefit of being a single statistic that can show the overall impact of conditions across the world, highlighting conditions of particular concern. However, it has limitations. For example:

- it requires a large amount of information to be collected and analysed. While some information such as mortality is widely available, statistics on YLD may not be as easily obtained. The large amount of information required makes it more difficult and time-consuming to calculate.
- to calculate YLD, disabilities are weighted according to the impact they have on people's lives. It can be argued that this impact cannot be accurately decided – is it a greater impact to lose sight or to lose a limb? Comparisons such as this are used to calculate YLD.
- YLL and YLD are often calculated using age weighting – that is, years lost early in the life span are sometimes given more weighting than those lost later in the life span. This can lead to a discussion of how lives are valued at different stages of the life span.

Case study

Global Burden of Disease Study (GBD)

The aims of the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) are simple. Everyone, all over the world, deserves to live a long life in full health. In order to achieve that goal, the world's decision-makers and development partners need to make the best possible decisions when determining how to allocate money, talent, and attention to combat health issues. And in order to do that, policymakers need accurate and accessible data on the relative harm health problems cause across time, geography, age, and sex. GBD 2015 provides exactly that.

A worldwide collaborative effort to measure the impact of health problems on people, GBD is coordinated by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington in Seattle. Data for the project are collected and analyzed by 1870 collaborators from 124 countries and three territories. GBD uncovers the toll of early death and disability at global, national and regional areas caused by more than 300 diseases and injuries in 195 countries and territories from 1990 to the present.

Institute for Health Metrics and Evaluation (IHME). Rethinking Development and Health: Findings from the Global Burden of Disease Study. Seattle, WA: IHME, 2016.

The data allows us to identify trends and compare populations. This enables us to understand the changing health challenges

facing people around the world, and to form a broad picture of two decades of changes in public health.

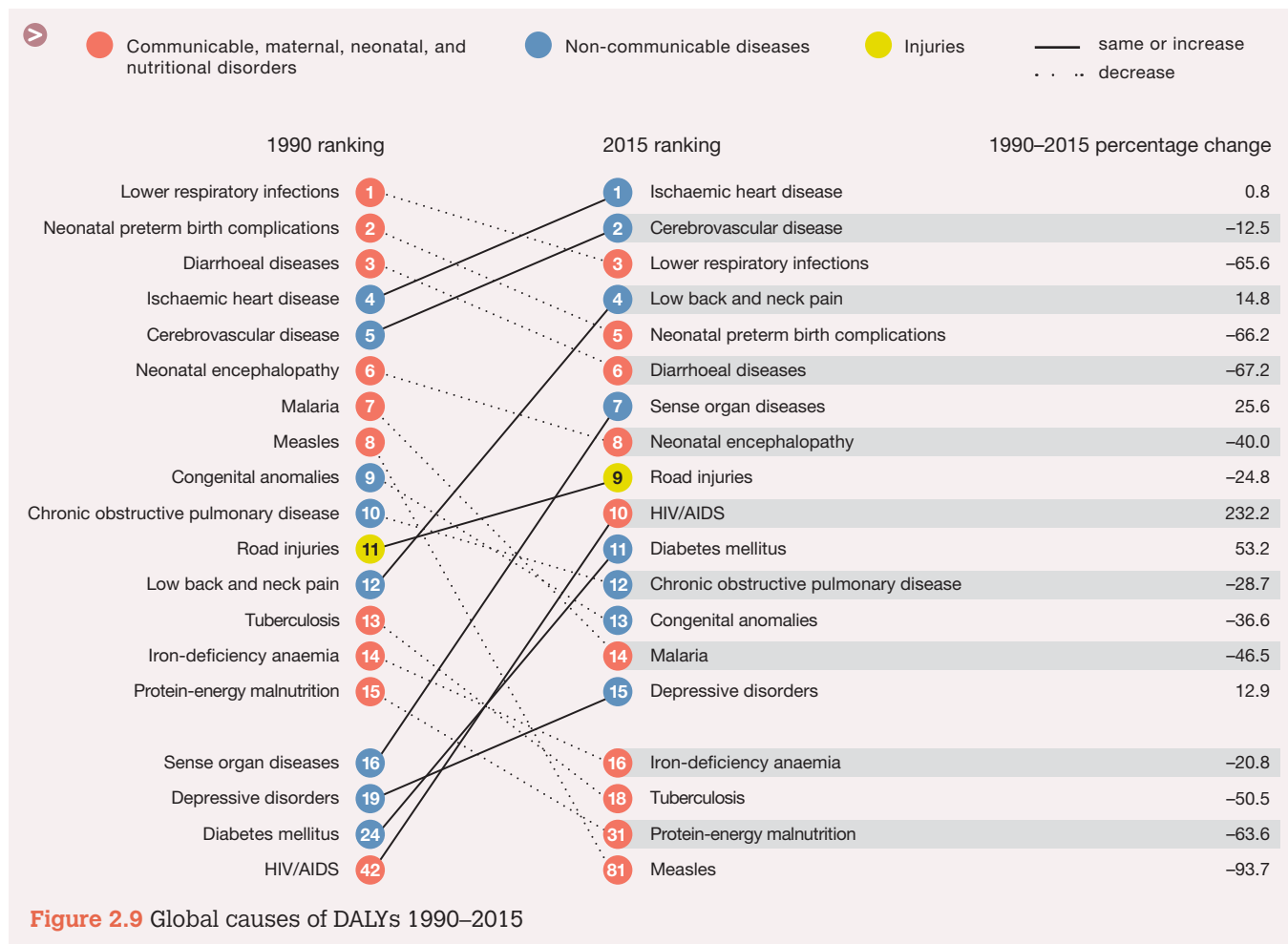
With this data we can begin to understand the effects of major global health promotion programs.

Some of the GBD's main findings are shown in Figure 2.9, and include:

- The world is in the midst of an epidemiological transition. As countries increase their levels of development, their communicable disease burdens are declining and their life expectancies are rising. ...
- ... While more developed countries tend to be healthier than less developed ones, some countries are much healthier than expected given their level of development, such as Ethiopia, China, and Spain. ...
- Exposure to poor sanitation, indoor air pollution, and childhood undernutrition has dropped, resulting in dramatic declines in the burden of diarrhoea and pneumonia in children.
- Exposure to several risk factors linked to development increased markedly ... These include obesity/overweight, high blood sugar, ambient air pollution, and drug use.

Institute for Health Metrics and Evaluation (IHME). Rethinking Development and Health: Findings from the Global Burden of Disease Study. Seattle, WA: IHME, 2016.





Review and reflect

- Describe 'burden of disease'.
- What unit is used to measure burden of disease, and how is it calculated?
- What is one DALY equal to?
- What is the difference between YLL and YLD?
- Provide one strength and one limitation of burden of disease as a measure of health status.
- Describe the Global Burden of Disease Study.
- What is the aim of the study?
- Describe some of the key findings of the study.
- Looking at Figure 2.9, describe the impact of the following conditions on the global population in 2015, compared with 1990:
 - malaria
 - low back and neck pain
 - ischaemic heart disease.
- Which three conditions would you recommend health funding be directed to? Justify your answer.

Apply

After reading the case study on the previous page, answer the following questions.

Health status in Australia

In this section the indicators are used to describe the health status of Australians, with a close look at aspects of particular interest. The health status of Australians can be evaluated by collecting and analysing this information.

Judgements can then be made about the level of health experienced. For example, we might compare groups to evaluate whether the level of health status described by the statistics is good or poor for those groups. Part of the evaluation might involve identifying areas in which health status is lagging and could be improved.

Learning tip: Where to find information about health in Australia

It is important that the data used for analysis is reputable. This means that it is obtained from sources that are known to follow strict procedures for collecting and analysing data, and are free from bias or inaccuracy. There are a number of places to find information about health status in Australia. For the organisations listed below, you can find their websites easily by searching the net, or link directly to their websites and see their Twitter accounts via our open access website at <http://hhdvce3and4.nelsonnet.com.au>.

- Australian Institute of Health and Welfare (AIHW) – established by the Australian Government to report to the nation on the state of its health
- Australian Bureau of Statistics (ABS) – the statistical agency of the Australian Government. It provides key statistics on a wide range of economic, population, environmental

and social issues, including health status

- Non-government organisations are reputable sources of information relating to specific conditions. Some examples are:
 - Cancer Council
 - Diabetes Victoria
 - Beyond Blue.
- International organisations are also reputable sources of global health information, including health in Australia:
 - World Health Organization (WHO)
 - Organisation for Economic Co-operation and Development (OECD)
 - United Nations (UN).

It is important to note the date of health status information. Because it takes time to collect and analyse comprehensive data, often the data is not available for several years. It is important to be aware of the year the data relates to, and to try to ensure that the data used is the most recent available.



Weblink

Life expectancy

Australians in general experience a very high life expectancy at birth, ranked 4th in the world. Both males and females have a life expectancy greater than 80 years (see Table 2.3).

Table 2.3 Life expectancy for Australians

	Life expectancy at birth (years)
Male	80.4
Female	84.5
Combined	82.4

(source: ABS 2016a, Table 1.9 'Life Tables, States, Territories and Australia, 2013–2015')

Life expectancy at birth in Australia has increased dramatically over the past three decades (Figure 2.10), which indicates an increase in health status in that time.

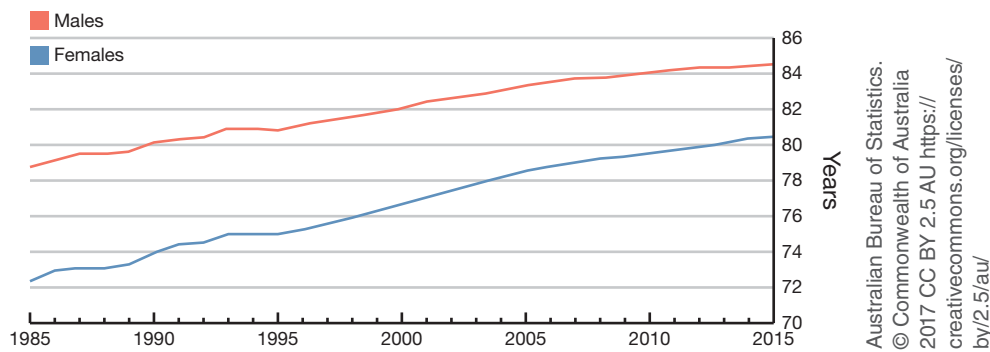


Figure 2.10 Life expectancy at birth, Australia, 1985 to 2015

Figure 2.11 shows the expected number of years to live at each age for males and females in Australia. At every age females have a higher life expectancy than males.

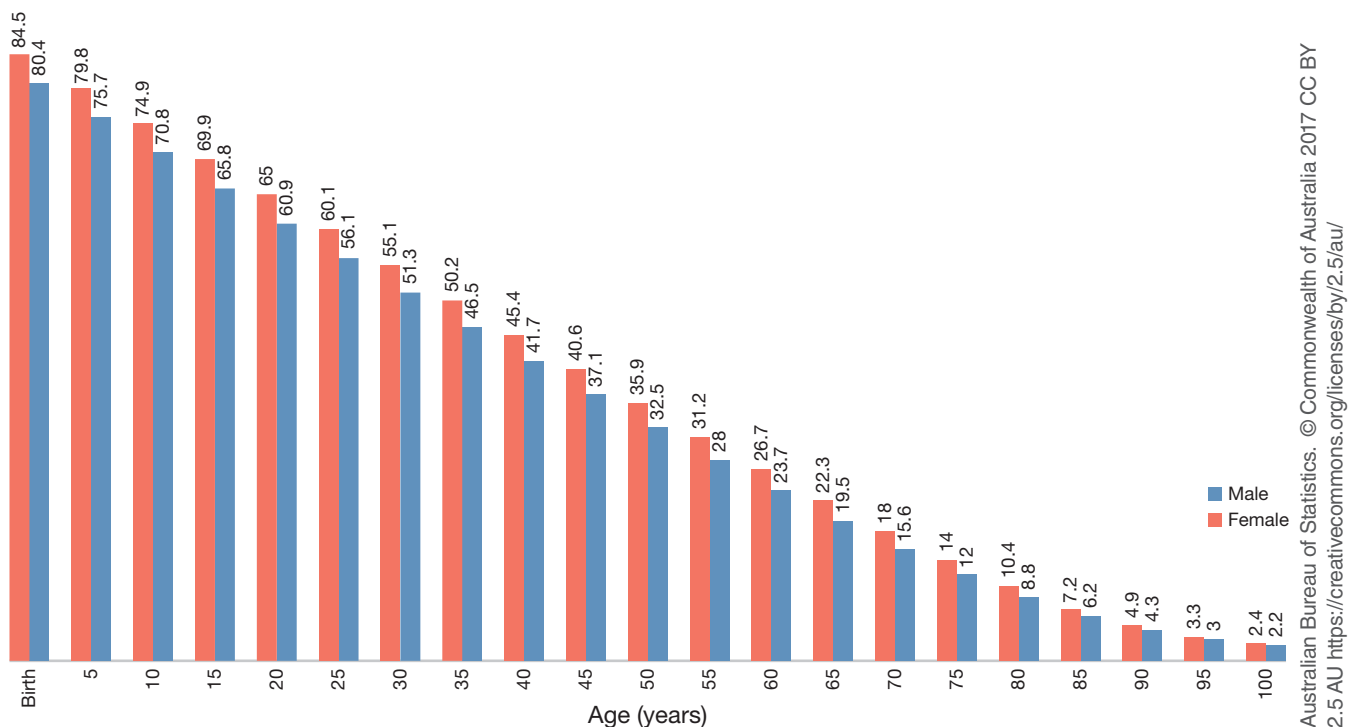


Figure 2.11 Expected number of years remaining at each age, for males and females in Australia

In Australia, the HALE at birth for both sexes combined is 71.9 years. This means that the average Australian is expected to live 82.8 years, with 71.9 years in good health and 10.9 in poor health.

Mortality

The mortality rate in Australia has declined steadily over the past century, falling by more than 70% for both males and females, as shown in Figure 2.12 (page 48). This trend indicates a dramatic increase in health status for Australians over that time. It can also be seen that males generally experience a higher mortality rate than females, although this gap is closing.

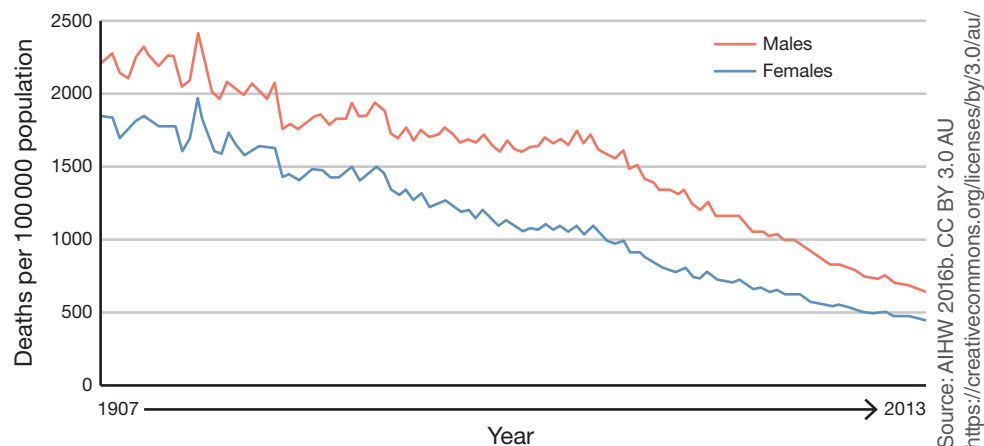


Figure 2.12 Age-standardised death rates by sex, Australia, 1907–2013

Learning tip: What is a trend?

A *trend* is a pattern or relationship in data. It can occur over time (e.g. mortality rates have decreased) or be an ongoing relationship between groups seen in the data (e.g. males

consistently have a higher mortality rate than females, although this gap is closing). A trend is present across the data, rather than at a specific point. An observation such as, 'The mortality rate for males in 2013 was higher than that of females' is not considered a trend, as it relates to a single point in time.

The types of conditions causing deaths in Australia, and the rate at which they cause death, has changed dramatically over time, as shown in Figure 2.13.

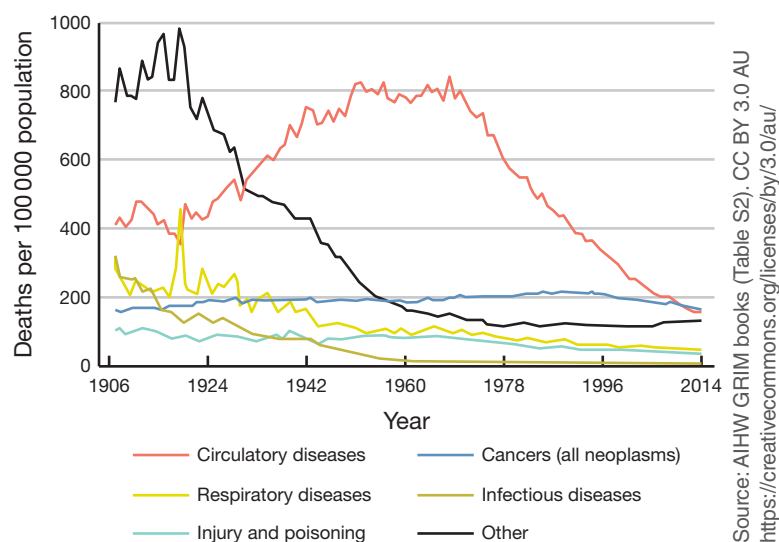


Figure 2.13 The rate at which different categories of illnesses cause deaths in Australia has changed dramatically over time

Figure 2.14 shows leading causes of death ranked in 2005 and 2015. It can be seen that while the top six causes of disease have remained in the same position, diabetes and chronic kidney disease have increased in ranking, and lower respiratory infections and prostate cancer have decreased. Also interesting is the percentage change over time. While the ranking for the top six has remained stable, ischaemic heart disease (narrowing of the blood vessels leading to reduced or blocked blood supply to the heart) and cerebrovascular disease (e.g. a stroke) have both decreased, while Alzheimer's disease has increased dramatically. We will take a closer look at each of these conditions later in this section.

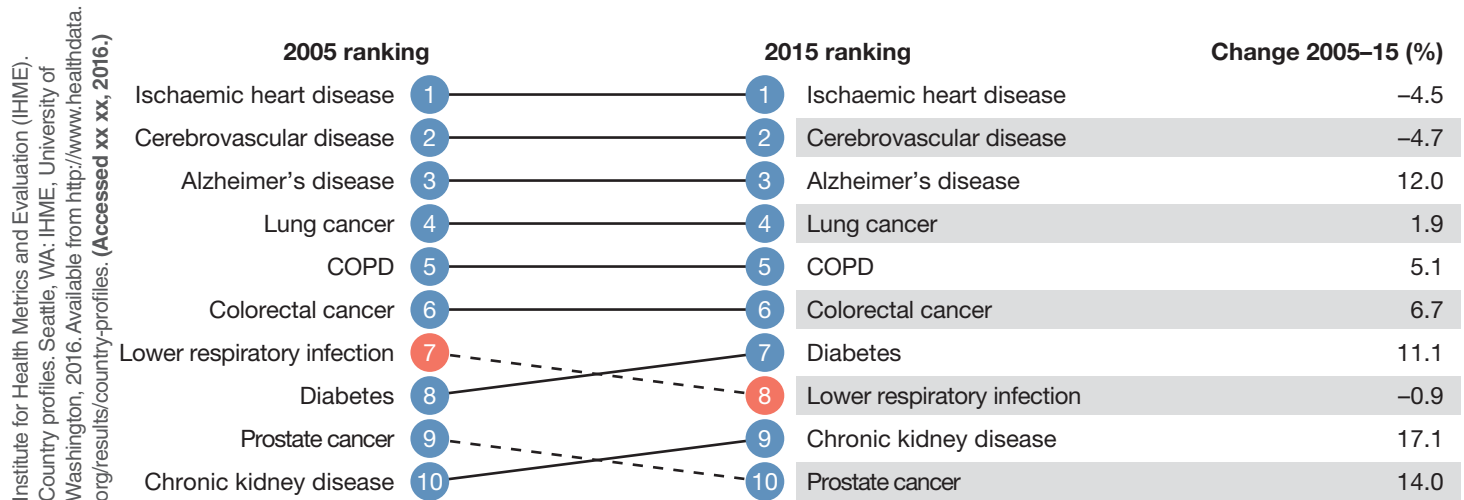


Figure 2.14 Top 10 causes of death, by rate in 2015 and percentage change 2005–15

Chronic illness

Mortality rates in Australia have fallen steadily over the past 100 years, and life expectancy has risen steadily. While these measures indicate a general increase in health status, indicators relating to morbidity show that this isn't the whole story.

Ill-health can be classified into different types. An illness may be *acute*, meaning it comes on sharply and is intense and brief, or it may be *chronic*, meaning it is long lasting, with persistent effects. Over the past century, chronic conditions have emerged as a leading cause of ill-health.

According to *Australia's Health 2016*, chronic conditions are becoming more common as a result of population growth and ageing. Half of Australians (more than 11 million) have at least one chronic disease, such as cancer, cardiovascular disease, arthritis, asthma, back pain, diabetes or a mental health condition (AIHW 2016a). One-quarter suffer from two or more chronic conditions. Given that these conditions are long lasting and persistent, their impact on individuals and populations is significant.

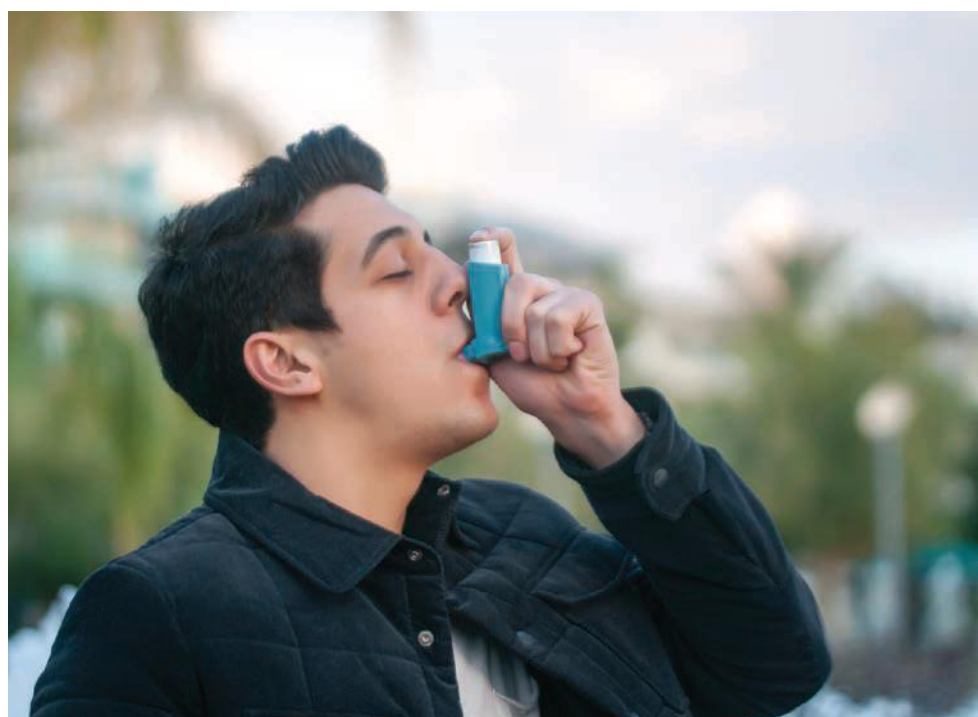
Table 2.4 (page 50) shows some common chronic conditions in Australia that affected different ages in 2014–2015. There are dramatic differences between the conditions affecting the different age groups and genders.

Chronic conditions have a large impact on the quality of life of individuals. The high prevalence of chronic conditions shows that while we are living longer, it is not necessarily always in better health.

Table 2.4 Most common (selected) chronic diseases, by age and gender, 2014–15

	Age group			Sex		
	0–44	45–64	64+	Males	Females	People
1	Mental health conditions	Cardiovascular disease	Cardiovascular disease	Cardiovascular disease	Mental health conditions	Cardiovascular disease
2	Asthma	Arthritis	Arthritis	Back pain and problems	Cardiovascular disease	Mental health conditions
3	Back pain and problems	Back pain and problems	Back pain and problems	Mental health conditions	Arthritis	Back pain and problems
4	Cardiovascular disease	Mental health conditions	Mental health conditions	Arthritis	Back pain and problems	Arthritis
5	Arthritis	Asthma	Diabetes	Asthma	Asthma	Asthma

ABS 2015, Table 19.1 Table S3.3.1



iStock.com/Mehmet Hilmi Barcin

Figure 2.15 Australians are living longer, but this may mean living with chronic health conditions such as diabetes or asthma.

Self-assessed health status

The 2014–2015 National Health Survey conducted by the Australian Bureau of Statistics (ABS) found that 85% of Australians aged 15 or over report their health as ‘good’ or better, 10.4% rated their health as ‘fair’, and 4.4% as ‘poor’. People perceive their level of health to change dramatically throughout their lifespan (Figure 2.16). While Australians in general rate their health as good, as we age we are less likely to rate our health as excellent or very good, and more likely to rate our health as fair or poor.

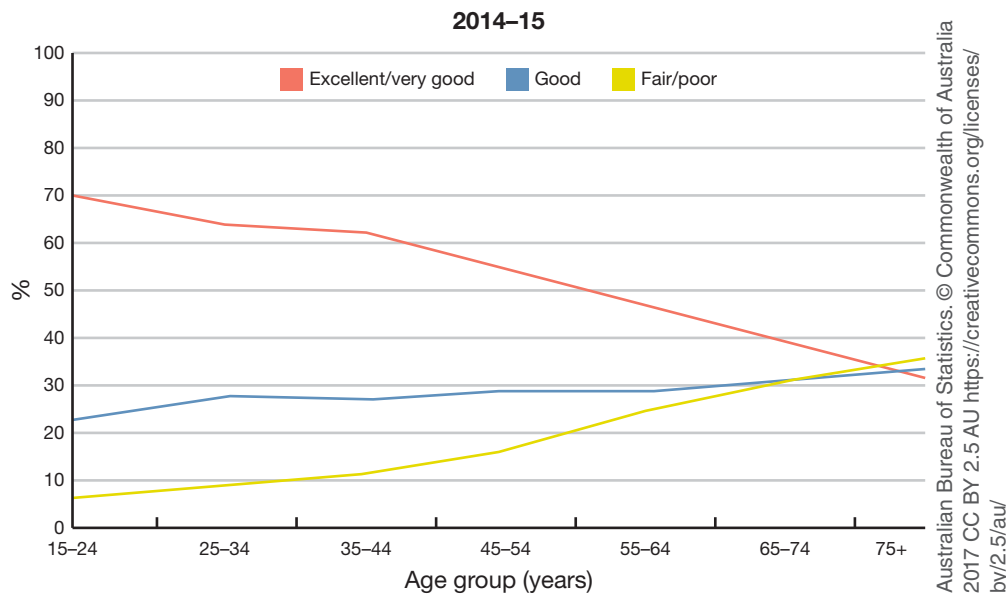


Figure 2.16 Self-assessed health status for people 15+ years, 2014-15

Internationally, Australia ranks highly in self-assessed health status: among 34 OECD countries it is ranked 4th, behind New Zealand (90%), Canada (89%) and the United States (88%) (OECD 2015).

Burden of disease in Australia

In Australia in 2011, the last time a large-scale study of burden of disease was undertaken, there were 4.5 million DALYs in total. This means that in Australia in 2011, an estimated 4.5 million years were lost for the population as a whole, through people living in poor health or premature deaths. This is equivalent to 201 years of healthy life lost for every 1000 people in Australia.

The results show that overall disease burden increases with age, indicating that as we age we are more likely to suffer from a range of conditions, although the proportion of YLD to YLL changes at different stages of the life span. In the very early and very late years, more of the burden is experienced as YLL, while in the middle years the burden is more likely to be due to YLD (Figure 2.17).

What is the OECD?

The Organisation for Economic Co-operation and Development (OECD) is a forum composed of 34 democratic governments with market economies, including Australia, that work together with the aim of promoting policies that will improve the social and economic wellbeing of people around the world. As part of this mission, they collect and analyse data on issues that affect the daily lives of individuals, including health status. The OECD is one source of reputable, up-to-date health status data regarding its member states.

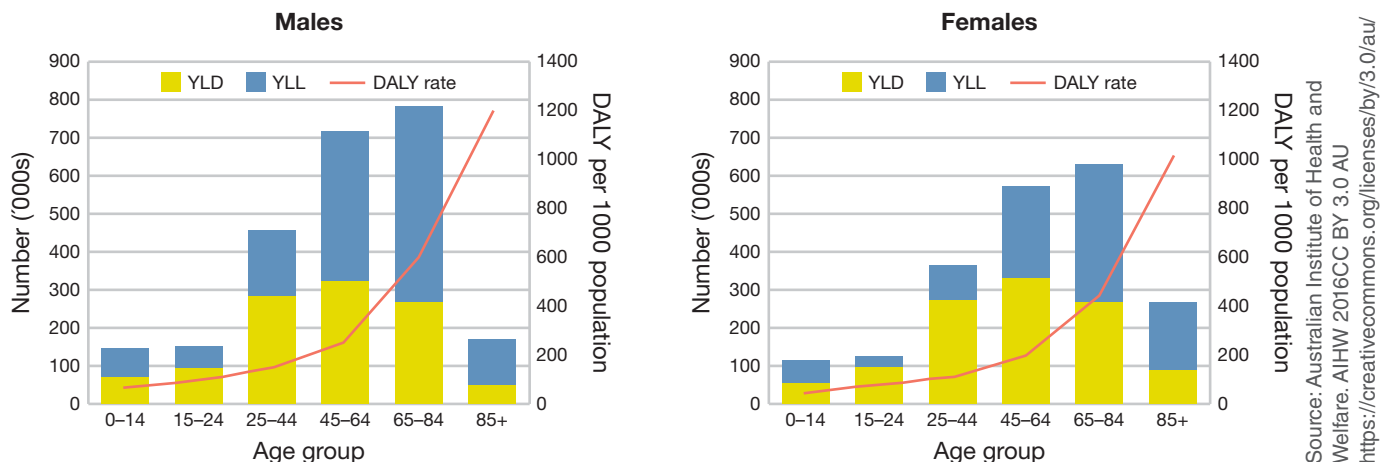


Figure 2.17 ABS burden of disease study

Learning tip

Note that in this case the 'DALY rate' is used in addition to DALY (number '000s). DALY rate (number of healthy years lost per 1000 population) is used because of the difference in size of the populations. The number of people aged over 85 is far fewer than the number in their middle ages. Therefore, looking at the number of years lost would underestimate the impact on this population.

Of the total DALY in 2011, 19% is attributed to cancer. This means that almost one in five of the healthy life years lost during this period, either through ill-health or through years of life lost, are due to cancer. Looking at the DALY for each condition, we can understand the relative burden of each on the health of the Australian population.

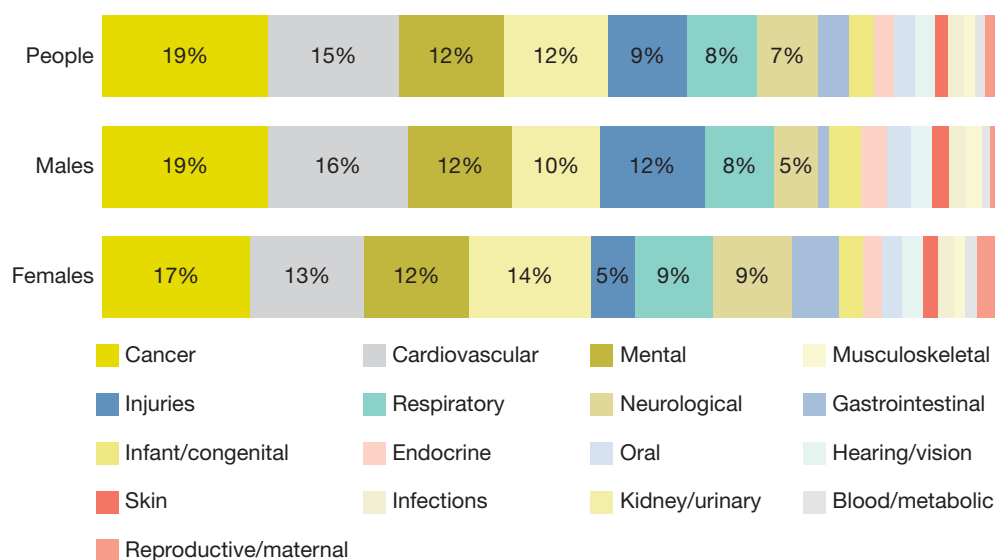


Figure 2.18 Burden of disease, by disease group and gender, 2011 (source: AIHW 2016)

The conditions that cause this burden change throughout the life span (see Table 2.5). For example, mental health issues including suicide and self-harm are a far greater concern in younger age groups, and cardiovascular disease is of concern in older age groups.

Table 2.5 Leading causes of total burden, by age and gender, 2011

Age group (males)								
	Under 5	5–14	15–24	25–44	45–64	65–74	75–84	85+
1	Pre-term/lbw complications	Asthma	Suicide/self-inflicted injuries	Suicide/self-inflicted injuries	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease
2	Birth trauma/asphyxia	Anxiety disorders	Alcohol use disorders	Back pain and problems	Lung cancer	Lung cancer	COPD	Dementia
3	Other disorders of infancy	Autism spectrum disorders	RTI/motor vehicle occupant	Alcohol use disorders	Other musculoskeletal	COPD	Dementia	Stroke
4	SIDS	Conduct disorder	Depressive disorders	Poisoning	Back pain and problems	Diabetes	Stroke	COPD
5	Other congenital conditions	Depressive disorders	Asthma	Depressive disorders	Suicide/self-inflicted injuries	Bowel cancer	Lung cancer	Prostate cancer

Age group (females)								
	Under 5	5–14	15–24	25–44	45–64	65–74	75–84	85+
1	Birth trauma/asphyxia	Anxiety disorders	Anxiety disorders	Anxiety disorders	Other musculoskeletal	Coronary heart disease	Coronary heart disease	Dementia
2	Pre-term/lbw complications	Asthma	Depressive disorders	Depressive disorders	Breast cancer	Lung cancer	Dementia	Coronary heart disease
3	Other disorders of infancy	Depressive disorders	Asthma	Back pain and problems	Back pain and problems	COPD	COPD	Stroke
4	SIDS	Dental caries	Suicide/self-inflicted injuries	Other musculoskeletal	Anxiety disorders	Other musculoskeletal	Stroke	COPD
5	Cardiovascular defects	Upper respiratory conditions	Bipolar affective disorder	Asthma	Lung cancer	Breast cancer	Lung cancer	Diabetes

Source: Australian Institute of Health and Welfare. AIHW 2016 CC BY 3.0 AU <https://creativecommons.org/licenses/by/3.0/au/>

Review and reflect

- What was the life expectancy of males and females in Australia for 2013–15?
- Describe the trend in life expectancy from 1985 to 2015.
- Compare the life expectancy of males and females throughout the lifespan in Australia.
- What is the health-adjusted life expectancy (HALE) for each sex in Australia?
- Comparing HALE and life expectancy, how many years are expected to be spent in:
 - full health?
 - ill-health?
- What were the leading causes of death in Australia in 2015?
- Which causes of death in Australia in 2015 have:
 - increased as a proportion of total cause of death?
 - decreased as a proportion of total cause of death?
- List two common chronic conditions affecting:
 - the younger age groups in Australia
 - the older age groups in Australia
 - Australian males
 - Australian females.
- Why are chronic conditions a major health concern in Australia?
- Based on the data presented in this section, evaluate the health status of Australians. Your answer should include a statement about whether Australians overall experience a high or low level of health. Provide data in support of your answer.



Worksheets

Chapter summary

- Health status: the level of health experienced by an individual/population at a given time
- A population is a group of people that share a particular characteristic; for example, the population of Australia, the Indigenous population, or teenagers aged 13–19.
- We measure health status to measure the level of health of individuals and populations, compare groups to find health inequities, and track changes over time. These guide decisions about where to target health promotion programs, and to evaluate their success.
- A health status indicator is a statistical measure that provides information about a particular aspect of the health status of a population. A range of indicators are used. Each indicator has benefits and limitations. There are three main types: death-related, ill-health-related, and combined indicators.
- Death-related health status indicators are mortality (including under-five, infant and maternal) and life expectancy.
- Ill-health-related health status indicators: morbidity, which includes incidence and prevalence and self assessed health status.
- Combined health status indicators (which derive from data related to ill-health and death) include burden of disease and health-adjusted life expectancy.
- Mortality rate is the number of deaths in a population in a given period. Rates are generally expressed as the number of deaths for every specific number of people in the population, e.g. 4 per 1000, 198 per 100 000. Unless otherwise stated, mortality rate is the adult mortality rate (15–60 years).
- In addition to adult mortality, the maternal mortality, infant mortality and under-five mortality rates are also used, because they are sensitive measures of health status.
- Under-five mortality rate (U5MR) is the number of deaths of children under the age of five in a population in a given time period.
- Maternal mortality rate is the number of maternal deaths (during pregnancy or within 42 days of the end of pregnancy) from a cause related to pregnancy or delivery, in a population in a given time period.
- Infant mortality rate is the number of deaths of children under the age of one in a population in a given time period.
- Morbidity is the level of ill-health in a population. It is measured by looking at the incidence and/or prevalence of a health condition as well as self-assessed health status.
- Incidence is the number of new cases of a disease or condition in a population in a specified period. Prevalence is the number or proportion of existing cases of a particular disease or condition present in a population at a given time.
- Burden of disease measures the total fatal and non-fatal impact of a condition. It is measured in DALYs, which is the total number of years of life lost (YLL) to a condition and the total years of disability (YLD). $\text{Total DALY} = \text{YLL} + \text{YLD}$.
- HALE estimates the number of years an individual is expected to live, adjusted to account for time spent in poor health due to any cause. It is the number of years in full health that a person can expect to live, based on current rates of ill-health and mortality.
- Self-assessed health status is based on an individual's perception of their health. It may be measured by a single question on a national health survey or by more complex questionnaires. The measure is subjective but has been shown to correlate highly with other more objective measures of health.

Exam-style questions with sample answers

- The *key skills* state that you need to describe and apply indicators.
- The *skills* and *knowledge* from this chapter are applied throughout the entire study, and therefore they may appear in exam questions that don't appear to assess them directly.

1 2014: Define prevalence. (1 mark)

Sample answer: The number of cases of a particular disease or condition present in a population at a particular time.

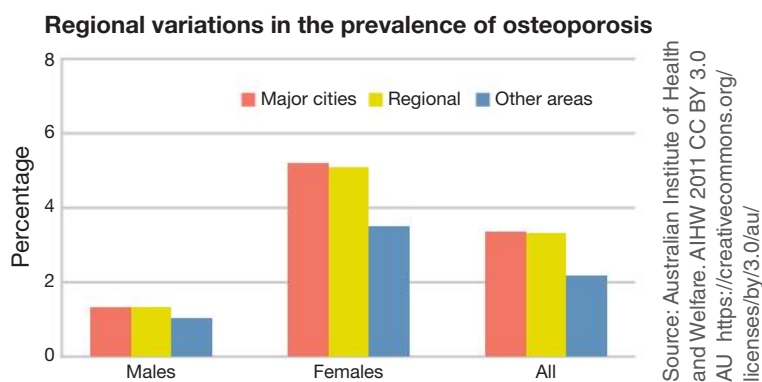
Important points:

- Being asked for descriptions of indicators is common practice.
 - This definition provided in the exam report is slightly different from the definition given in the VCAA support material ('the number *or proportion* of cases of a particular disease or condition present in a population at a *given* time.' (VCAA 2013), but it contains all the elements and has the same meaning. Definitions do not need to be word for word, provided the meaning is the same.
 - For one mark, you need to provide all elements of the description.
- ### 2 2015: Explain the difference between life expectancy and health-adjusted life expectancy. (2 marks)

Sample answer: Life expectancy is the number of years an individual is expected to live if existing death rates continue, while health-adjusted life expectancy refers to the number of years still to be lived without reduced functioning due to ill-health, an indicator of quality of life.

Important points:

- Comparing and contrasting indicators is a question that should be anticipated.
 - In your answer, you should show your understanding of both indicators by providing a description of each, as well as highlighting a key point of similarity or difference between them.
 - Use a key term that highlights the difference, such as 'however', 'compared to'. This gives more than just a description of each term.
- ### 3 2015: Identify two trends evident in the graph below. (2 marks)



Sample answer:

Possible trends include:

- Females have a higher prevalence of osteoporosis than males in all regions.
- The prevalence of osteoporosis decreases as the distance from major cities increases.
- The prevalence of osteoporosis in major cities and inner-regional areas is similar.

Important points:

- A trend is a pattern or relationship in the data, e.g. it carries across multiple populations or over time.
- A trend is different from just repeating the information provided in the graph, e.g. 1% of males in both major cities and inner-regional areas had osteoporosis.
- Unless the question specifically states that you should use data, it is generally not needed as part of the answer.

In past exams, the following rules have been fairly consistent:

- If the question states that you should use data, you must specifically refer to the exact data provided by the question. Be careful about doing your own calculations with the data (e.g. Life expectancy was five years higher for males than females), and it is best practice to also give the exact data as provided. If you don't provide data when it is referred to in the question, you will generally receive no marks.
- If the question states that you should *use information*, you still need to refer to the data, but you can do it indirectly. For example, you could state: 'Life expectancy for females is higher than for males', but you don't need to provide exact figures.

Quick tips for interpreting data in the exam

- Read the *title* of the graph or table for an overview of the information.
- Read both axes of the graph, or the labels of a table, so you refer to these exact indicators, e.g. 'life expectancy at birth' rather than simply 'life expectancy'.
- Read the key to understand what is being represented in a graph. For example, is the data split by country, by age group or by gender?

Chapter 3: Health status in Australia

Key knowledge

- 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

- analyse health information to explain factors that contribute to variations in health status between population groups.
- use data to describe and evaluate the health status of Australians.

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Key terms

- biological factor
- blood lipids
- blood pressure (BP)
- body mass index (BMI)
- environmental factor
- health inequities
- metabolic syndrome
- sociocultural factors
- socioeconomic status (SES)
- triglycerides
- urban design and infrastructure

In this chapter

Introduction	page 58	Climate	page 70
Sociocultural factors influencing health status	page 58	Housing	page 71
Social inclusion and exclusion	page 58	Urban design and infrastructure	page 72
Socioeconomic status (SEA)	page 59	Workplace hazards	page 73
Culture	page 60	Health status of different population groups	page 74
Media	page 61	Males and females	page 74
Biological factors influencing health status	page 62	Indigenous and non-Indigenous	page 77
Body weight	page 63	High and low socioeconomic status	page 80
Blood pressure	page 64	Those living within and outside Australia's major cities	page 83
Glucose regulation	page 65	Factors contributing to Australia's health status	page 86
Blood lipids	page 65	Smoking	page 86
Genetics (including gender)	page 66	Alcohol	page 88
Environmental factors influencing health status	page 69	Dietary risks	page 89
Air quality	page 70	High body mass index	page 91

Introduction

The health status of Australians depends on a range of factors, both within the individual and in their environment. Understanding these factors can help us explain and predict trends in health status, and explain why some groups have better or worse health than others. Knowledge of these factors can also be used to help prevent disease, illness and injury.

Many factors combine to influence the health status of individuals and populations. As you read in Chapter 1, the level of health experienced by an individual is determined largely by the context of their life – their circumstances and environment. In many cases, these factors are outside the control of the individual, and so blaming individuals for having poor health or crediting them for good health is inappropriate. This is particularly the case when looking at the health and wellbeing of populations who experience **health inequities**. These factors can be grouped into three broad categories: sociocultural, biological and environmental.

health inequities differences in health status between population groups that are socially produced, systematic in their unequal distribution across the population, avoidable and unfair

Activity: Your turn

List as many factors as you can think of that influence your health status. Two examples are your family and your friends.

Try to group these factors into different categories, and then name these groups according to the types of factors that are included.

Sociocultural factors influencing health status

According to WHO, the social conditions in which people spend their lives is the single most important influence on health status. **Sociocultural factors** are the customs, lifestyles, beliefs and values that are part of a society or group, and have a pervasive effect on the health and wellbeing of both individuals and populations. They can be thought of as 'the causes of the causes', because to a large extent they determine our risk of illness, behaviours that can increase or decrease health and wellbeing, and our ability to treat ill-health when it arises. The list of sociocultural factors that can influence health status is extensive, and impossible to cover in full here. Figure 3.1 shows a selection of sociocultural factors that can influence the health status of Australians.

sociocultural factors factors relating to the society (socio) and culture (cultural) of an individual or population that can influence health status both positively and negatively

Social inclusion and exclusion

The degree to which an individual or population experiences social inclusion or exclusion can have a major influence on health status. Social inclusion relates to the ability of both individuals and populations to participate in society through employment and accessing services; connect with family, friends and the local community; deal with personal crises such as ill health; and have a voice. When a high level of social inclusion is experienced, positive health outcomes are likely. In contrast, social exclusion occurs when individuals or groups are prevented from participating fully in society. It can result from a range of factors including poverty, unemployment, carer responsibilities, poor education, and disabilities. Social exclusion operates on a gradient, with inclusion and exclusion on a continuum in which groups have different access to power, decision making, social interaction, and political and civic engagement.

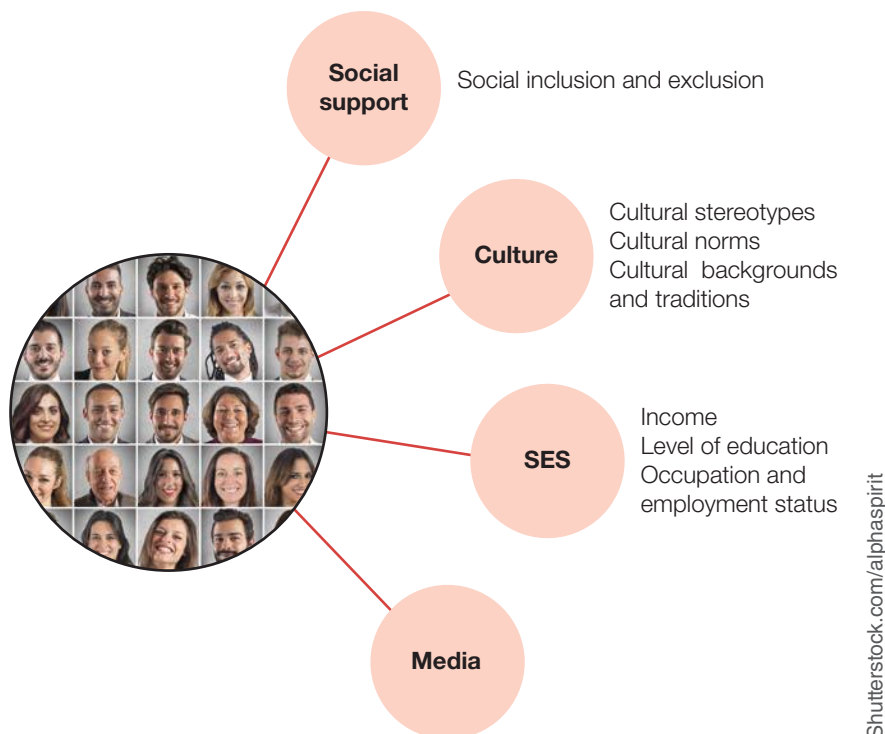


Figure 3.1 Examples of sociocultural factors that can influence the health status of Australians

When groups experience social exclusion, it can be an obstacle that prevents individuals from accessing social support, as well as a source of stress, and a barrier to accessing services and resources. In this way, social exclusion can be a negative influence on the health status of the individuals and communities affected.

Social exclusion is often compounded by discrimination, which can arise on the basis of any number of characteristics, including gender, ethnicity, disability, marital status, family or caring status, age, religion or sexual orientation.

Positive connections with family, friends and the community are important because they provide a sense of support and belonging. When these connections are absent, it can have a negative influence on health status; for example, leading to higher rates of anxiety and depression.

Socioeconomic status (SES)

The relationship of **socioeconomic status (SES)** to health status is well established. SES can be understood as an individual's or group's economic and social standing in relation to others based on income, education and occupation. SES unites these individual factors because together they determine our access to resources including material items, health care, power and opportunities. Those with a higher SES have better access to these resources, while those with a lower SES have reduced access to resources and a lower level of control. Individuals thrive or struggle depending on whether they do or do not have access to these resources. This affects the health outcomes of different groups and is a major cause of health inequities. While SES can be used to determine differences between individuals, it is particularly useful to look at inequities between populations.

socioeconomic status (SES)

an individual or group's economic and social standing in relation to others based on income, education and occupation

The association between SES and health status is known as the social gradient, and is shown in Figure 3.2. As SES increases, health status also increases.

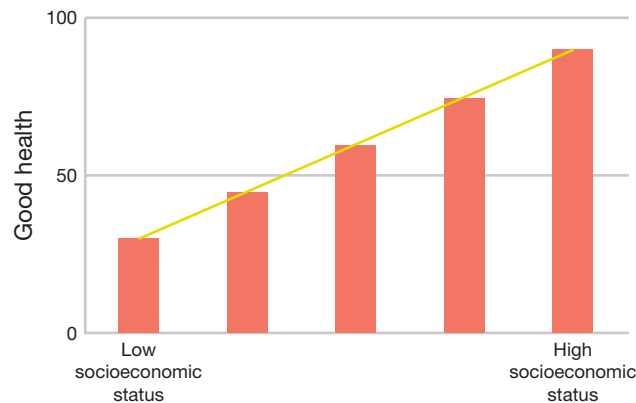
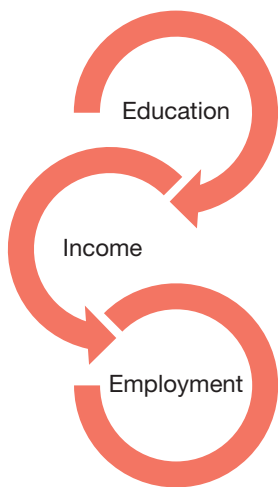


Figure 3.2 The 'social gradient' in health (source: physiospot 2013)



culture the system of traditions, thoughts and behaviours shared by a group of people

Education, income and employment are closely related.

- Our level of education is very important in determining the type of job we work in, and therefore in determining our income.
- Higher levels of education are associated with better employment opportunities. Having more education means an individual is less likely to be unemployed, and is more likely to be employed in occupations with favourable working conditions – for example, more secure full-time jobs, flexibility in hours, safer environments and higher incomes.
- Those who have higher levels of income generally have more access to resources, and control over their circumstances. For example, they are able to afford health care; larger and safer shelter; make decisions about their leisure time; and they have better educational opportunities.

Within this larger relationship, these factors might influence health status in a number of ways. For example, higher levels of education are associated with greater 'health literacy'. Health literacy is the ability of individuals to access and understand health information, and make appropriate health decisions that lead to better health. Increased health literacy leads to better health outcomes.

Culture

Culture can influence many aspects of our lives, including traditional foods and eating habits, ways of viewing health and wellbeing, illness and treatment, and how we interact with each other. Cultural backgrounds have a tremendous impact on health status.

- Culture can make some behaviours more or less likely, through social norms. For example, some cultures prohibit alcohol and smoking, which can have a positive impact on the health status of these groups; traditional diets are often healthier than modern diets, which can be based on high-fat processed foods.
- The way we react to being sick is often embedded in our culture and may determine the actions we take. For example, a man might not feel it is acceptable to seek help, and might be reluctant to approach a health care professional, which could lead to a negative health outcome for him. A mother might prioritise the health of her family over her own health, and might not seek help when she needs it.
- Shared culture is often a source of social support, as we are more likely to be accepted in groups of people who share similar values and behaviours.

However, those whose personal beliefs, values and behaviours conflict with the dominant culture can experience social exclusion and stress. The health effects of social exclusion and stress have been covered previously in this chapter, and include a negative impact on mental health and wellbeing.

- Health beliefs and attitudes differ between cultures, and determine what is considered poor health, how health problems are treated, and by whom. For example, Western medicine is based on science and emphasises biology and pathology. Diseases are considered to have a physical cause that can be observed and treated by medical professionals. In comparison, traditional Chinese medicine views health and illness in terms of balance of energy, called 'qi' – health is when qi is in a state of balance, and illness results from imbalance. Treatments such as acupuncture, diet, exercise and herbal medicine are focused on restoring this balance.



iStock.com/AndreyPopov

Figure 3.3 Acupuncture is a common form of treatment in Chinese medicine.

Media

The media, which includes television, newspapers, radio, film, the internet, games, advertising and social media, has a significant influence upon the health status of both individuals and populations. Exposure to media has become largely unavoidable in everyday life, and this has meant the influence on health outcomes is increasing. There is potential for this impact to be both positive and negative.

Throughout the day we have many interactions with forms of media: we might hear a radio report about depression, read an article about the rising cost of private health insurance, see a billboard ad for R U OK? day, see a Facebook post about a friend and their latest acupuncture treatment, and watch a TV program in which a character goes to the hospital for emergency medical treatment. This causes a constant flow of information which can influence a range of health attitudes and behaviours; for example, how we identify and respond to experiencing illness, how and when we access particular health services, and behaviours that we might display. This in turn can impact upon health outcomes. The effect can be positive if it encourages behaviours which increase our health and wellbeing. However, the opposite can also be true.

Media can have an impact upon health status in different ways. For example, media can directly address health issues through TV programs such as *The Biggest Loser* and *Embarassing Bodies*, or media health campaigns can lead to increased health outcomes by promoting healthy behaviours. However, media can impact health in more subtle ways. For example, product placement or subtle messaging can lead us to believe that health and wellbeing 'looks' a certain way, or that particular products or behaviours are important for our health and wellbeing. 'News framing' is a particular issue relating to the type of health information that is presented by the media, and the way that it is presented, which can have a dramatic effect on the health status of individuals and populations.

Review and reflect

- 1 Describe what is meant by sociocultural factors.
- 2
 - a What is social exclusion?
 - b Who is likely to suffer from social exclusion and why?
 - c What are the health outcomes for groups experiencing social exclusion?
- 3 What is 'socioeconomic status (SES)'?
- 4 Describe three ways in which education, income and employment affect the health status of individuals and populations.
- 5 Describe two ways in which the media might influence the health status of individuals and/or populations.
- 6
 - a Describe 'culture'.
 - b Outline the different ways in which culture can influence the health status of different populations.

Biological factors influencing health status

biological factors bodily states that have the potential to influence health status of individuals and populations

Biological factors are bodily states that are linked to our health status.

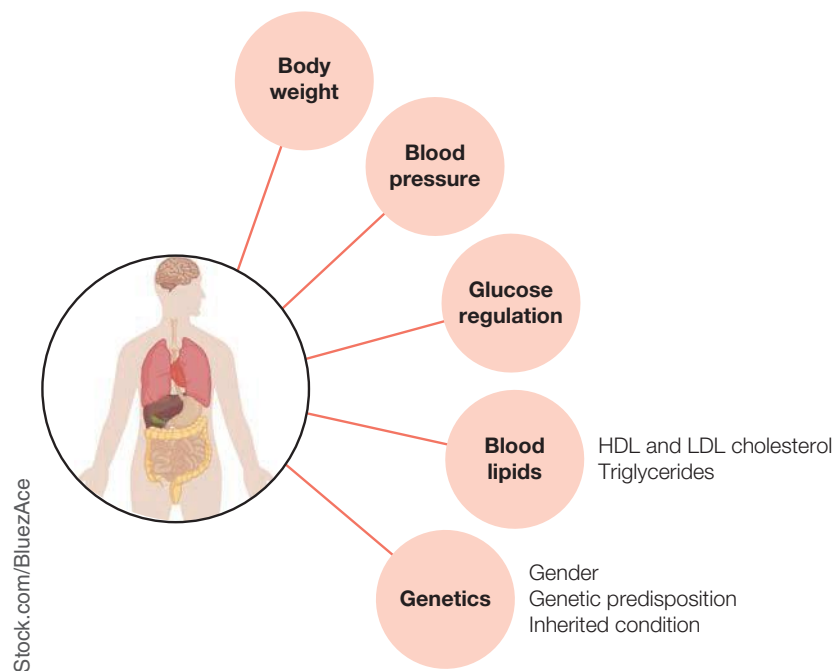


Figure 3.4 Examples of biological factors that influence health status

Body weight

Maintaining a healthy body weight has a positive influence on health and wellbeing. Weight that is outside the recommended guidelines poses risks to health and wellbeing. Body fat percentage can be estimated by calculating body mass index (BMI, Table 3.1), which is based on your weight and height, or by measuring waist circumference (Table 3.2).

Table 3.1 BMI categories

	BMI
Very underweight	< 18
Underweight	19–20
Healthy	20–25
Overweight	25–30
Obese	> 30
Morbidly obese	> 40

Table 3.2 Waist circumference and risk level

	Waist circumference	
	Increased risk	High risk
Male	≥ 94 cm	≥ 102 cm
Female	≥ 80 cm	≥ 88 cm

Being overweight or obese are conditions in which excessive fat accumulates to an extent that presents a risk to health and wellbeing. People are particularly at risk if the excess fat accumulates around the mid-section (waist) rather than the hips and thighs, which is why waist circumference is also used in addition to BMI. A large percentage of the population are affected: in 2014–2015, approximately 63% of Australian adults and 27% of children aged 5–17 were overweight or obese (AIHW 2016). The rates of the population being overweight and obese has increased steadily, and this trend is expected to continue.

Being overweight or obese is associated with both morbidity and mortality. The health risks associated with excess body weight increase progressively with increasing weight, and include:

- cardiovascular disease, including coronary heart disease and stroke
- type 2 diabetes
- musculoskeletal conditions, including osteoarthritis
- some cancers, including colorectal cancer
- mental health conditions.

Being underweight can also have a negative impact on health status. For example, it has been associated with delayed growth and development in children and teenagers, fertility issues, decreased function of the immune system and weakening of the bones.

blood pressure the pressure of blood cells on the walls of arteries as blood is pumped around the body

Blood pressure

Blood pressure (BP) is the pressure of blood on the walls of your arteries as your heart pumps the blood around your body. Your BP fluctuates naturally, depending on the state your body is in. For example, when you exercise or when you are under stress, your BP alters temporarily as your heart pumps harder to increase blood flow throughout your body in order to supply the muscles with more oxygen. When BP is persistently higher than normal, this is called hypertension (Table 3.3). It is associated with poorer health outcomes, particularly the development of chronic kidney disease, and cardiovascular disease, including stroke and coronary heart disease.



Figure 3.5 Blood pressure readings can be used as an indicator of health status.

Blood pressure is measured as two numbers, called systolic and diastolic – for example, 120/75 mmHg. Systolic BP, the highest pressure, is when the heart contracts to pump blood through the vessels. Diastolic BP, the lowest pressure, is when the heart momentarily rests between contractions.

Table 3.3 Blood pressure categories

Blood pressure category	Systolic (mmHg) (upper #)		Diastolic (mmHg) (lower #)
Low blood pressure (hypotension)	less than 80	or	less than 60
Normal	80–120	and	60–80
Prehypertension	120–139	or	80–89
High blood pressure (hypertension stage 1)	140–159	or	90–99
High blood pressure (hypertension stage 2)	160 or higher	or	100 or higher
High blood pressure crisis (seek emergency care)	higher than 180	or	higher than 110

Glucose regulation

Glucose is a type of sugar and is an important source of energy for cells in the human body. We get glucose from eating carbohydrates such as bread, fruit and pasta, which are then broken down in our stomachs and absorbed into the bloodstream. Blood glucose levels need to be maintained within fairly narrow limits, and the body has mechanisms involving hormones by which it maintains **glucose regulation**. When blood glucose levels are too low, the pancreas (a large gland just under the stomach) releases a hormone called glucagon, which causes glucose to be released into the bloodstream. When blood glucose levels are too high, the pancreas releases insulin, which causes cells to take up glucose from the bloodstream.

If blood glucose remains persistently high – due to a high-sugar diet, for example – then insulin levels will be consistently high. When this occurs over a long period, insulin resistance can develop, meaning the body's cells become resistant to the effects of insulin and no longer take up glucose when insulin is released. Insulin resistance can influence health in a number of ways. For example, it can increase the risk of:

- cardiovascular illness – such as coronary heart disease or stroke
- type 2 diabetes – it is estimated that one in three of those who have insulin resistance will go on to develop type 2 diabetes if it is not managed
- chronic kidney disease.

Blood lipids

Blood lipids are all fatty substances found in the blood, such as cholesterol and triglycerides. Cholesterol and triglycerides are both types of fats, but they are used for different purposes. Triglycerides are used as energy, while cholesterol is important for building hormones and maintaining cells. They can be consumed in our diet, or released into the bloodstream by the liver.

As fats cannot dissolve in the blood, they travel in the bloodstream in bundles made up of fat and proteins, called lipoproteins. Cholesterol is a particularly important type of lipid. It comes in two forms: low-density lipoprotein (LDL), known as 'bad' cholesterol, and high-density lipoprotein (HDL), known as 'good' cholesterol.

When cholesterol, particularly LDL, is in high concentrations in the blood, it can be deposited on the walls of damaged arteries. Other substances in the bloodstream, such as calcium, can stick, forming a thick, hard deposit called plaque. Plaque can narrow the arteries and make them less flexible, a condition called atherosclerosis. Pieces of plaque can block blood flow through the arteries and increase the likelihood of a clot forming, which can result in a heart attack or stroke.

glucose regulation a process in the body through which blood glucose levels are regulated to stay within narrow limits

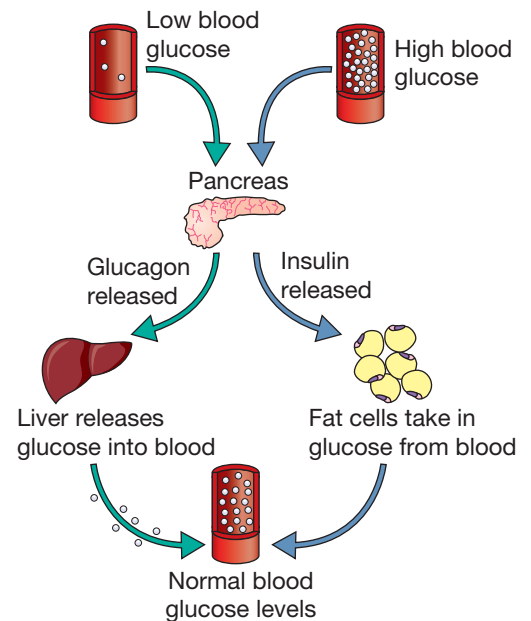


Figure 3.6 Regulation of blood glucose

blood lipids fatty substances found in the blood, including triglycerides and cholesterol

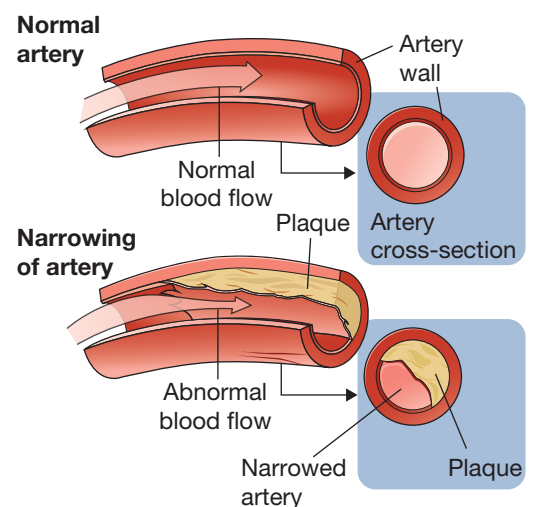


Figure 3.7 Formation of plaque in atherosclerosis

Metabolic syndrome

Metabolic syndrome is a collection of biological factors that often occur together and greatly increase the risk of a number of chronic conditions, including type 2 diabetes and cardiovascular disease (stroke and coronary heart disease). The main components of metabolic syndrome are:

- obesity (especially central abdominal obesity)
- high blood pressure
- high blood triglycerides
- low levels of HDL cholesterol
- insulin resistance.

Metabolic syndrome is complex and not well understood. With an estimated 35% of Australians suffering from metabolic syndrome, and mortality rates associated with CVD and type 2 diabetes rapidly increasing, understanding this syndrome is vital. We know that the five factors listed above are interlinked in complicated ways, and it is difficult to work out the precise chain of events.

Ninety-five per cent of the dietary fats we consume are triglycerides, and once they are digested they enter the bloodstream and are a source of energy for the cells. Excess triglycerides can be stored in the body as fat. Excessive consumption of fats can cause high blood triglyceride levels, but other factors, such as alcohol consumption, can also cause high triglyceride levels. High blood triglycerides tend to be associated with low levels of HDL and with increased risk of overweight and obesity.

High blood lipid concentration is very common in Australia. It is estimated that 63% of adults (8.5 million) have high blood lipids, and the risk increases with age. High blood lipid concentration is known to have a negative influence on health status and, if it is not managed, is associated with the development of cardiovascular disease, including coronary heart disease and stroke.

Genetics (including gender)

Genetic factors play a role in influencing the health status of individuals and populations. Every individual has genetic information that has been passed on from their biological parents. This genetic information is in the form of DNA, stored as chromosomes in the nucleus of cells. These chromosomes have millions of sections called genes, which control different traits.

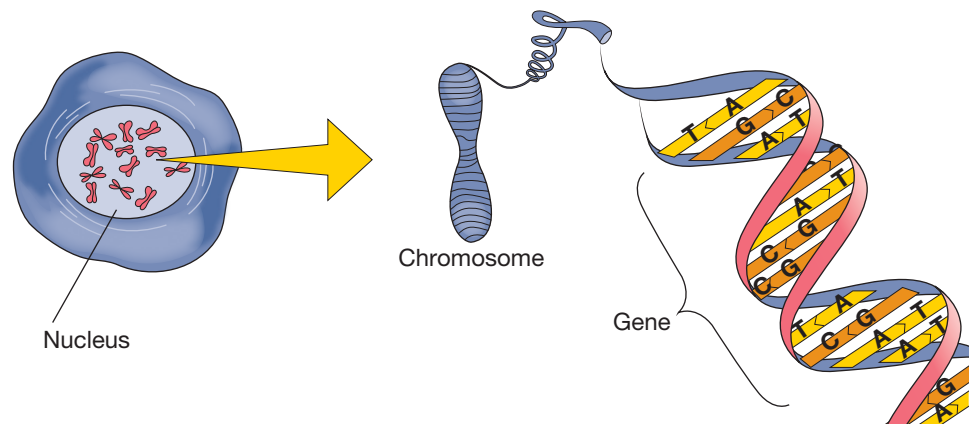
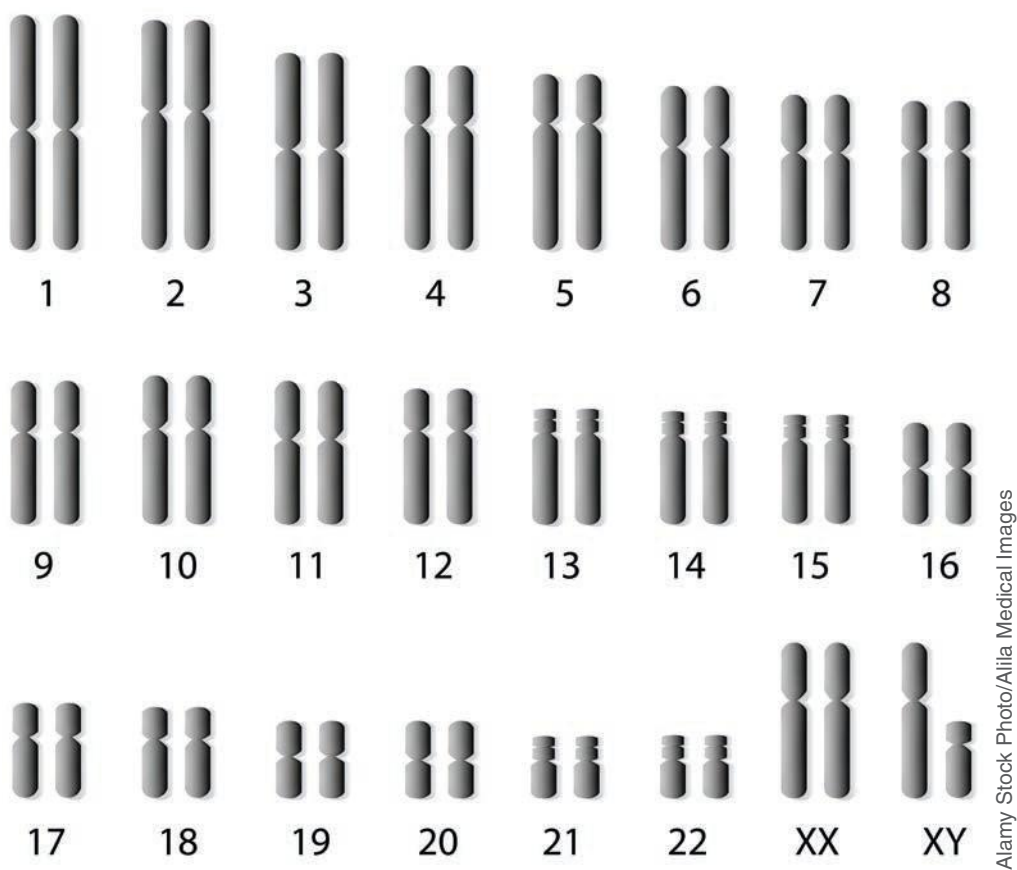


Figure 3.8 Nucleus, chromosome and gene

Humans usually have 46 chromosomes, in 23 matched pairs (Figure 3.9). One of these pairs is the sex chromosomes, XX for females and XY for males. One chromosome from each pair is inherited from each biological parent. The particular sex chromosome inherited from the father determines whether the child will be a boy or a girl, and the remainder of the chromosomes determine which traits the child inherits from each parent (Figure 3.10).



Alamy Stock Photo/Alila Medical Images

Figure 3.9 Humans have 46 chromosomes, in 23 pairs.

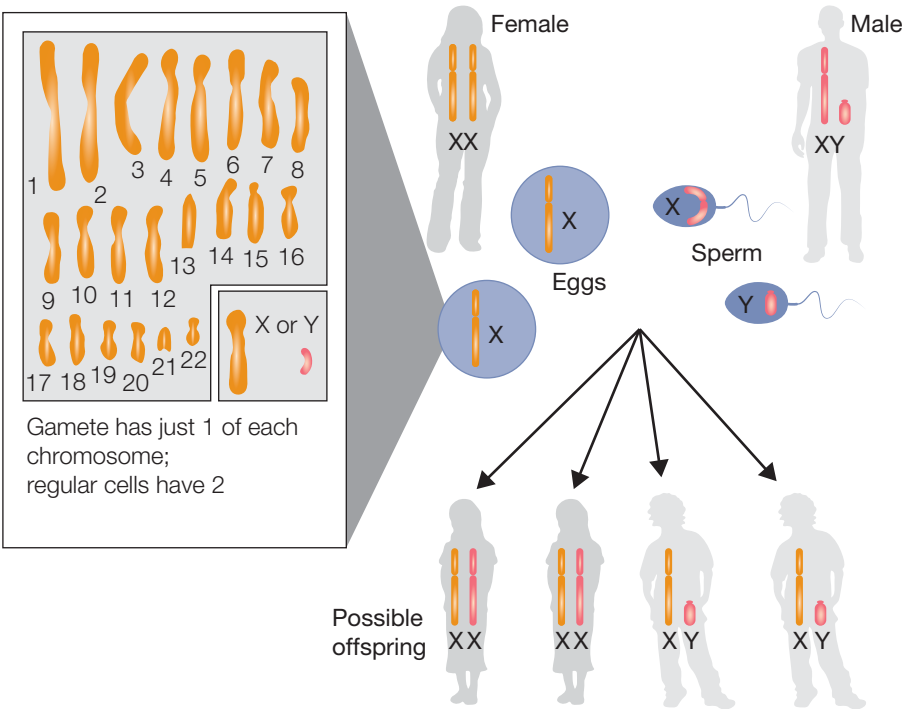


Figure 3.10 One chromosome in each pair is inherited from each biological parent, and this determines the child's sex and other traits.

The sex of the child, either male or female, plays a role in determining health status in a number of ways. For example:

- The difference in bodies between males and females can lead to certain illnesses in one gender. Only males have a prostate gland, and therefore only males get prostate cancer.
- Females have higher levels of the hormone oestrogen, while men have higher levels of the hormone testosterone. The level of these hormones can have an impact on health status; for example, female sex hormones protect against the build up of harmful cholesterol in the arteries.
- Some conditions have 'sex-linked inheritance', meaning the gene is located on the sex chromosome. Of particular importance are conditions that are 'X-linked recessive', such as haemophilia. The gene for haemophilia is passed on the X chromosome, but because it is recessive it is easily 'masked' by the presence of a normal gene. Females have two X chromosomes, and are unlikely to get two copies of the affected gene, as they would need two affected parents. Males have only one X chromosome, and therefore are more likely to show signs of the disease as there is no chance for it to be masked by a second normal X chromosome.

Genetic abnormalities can occur either during reproduction, due to environmental factors, or spontaneously. This can affect the health status of individuals or populations. For example:

- During reproduction, sometimes both chromosomes of a pair are passed from one parent to the offspring. For example, when one parent passes both copies of chromosome 21 to the offspring, the offspring ends up with three copies in total. This condition is called Down syndrome.
- If cells are exposed to environmental hazards, such as UV radiation, genetic mutation can occur, and can influence health negatively – for example, mutations in DNA can lead to the development of skin cancer. In populations that have widespread exposure to an environmental hazard, high levels of mutations can occur in individuals throughout the population. Given that these mutations are only present in small numbers of cells in the body, they cannot be passed on to offspring.

Genetics can cause a predisposition to certain conditions. While particular genes do not cause the condition by themselves, they might mean the individual is more susceptible to developing particular conditions when exposed to an environmental hazard. Some conditions that are thought to have a genetic predisposition are:

- cancer, including breast and prostate
- cardiovascular disease, including hypertension
- type 1 and type 2 diabetes
- mental illness, including depression.

Review and reflect

- 1 Describe the terms 'underweight', 'overweight' and 'obese'.
- 2
 - a What negative health outcomes are associated with being overweight or obese?
 - b What are the weight circumference and BMI of people most at risk of these outcomes?
- 3 Outline the difference between systolic and diastolic blood pressure.
- 4 Provide a blood pressure reading for:
 - a normal/healthy
 - b hypertension stage 1
 - c high blood pressure crisis.
- 5 What are the negative health outcomes associated with hypertension?
- 6
 - a Outline how impaired glucose regulation occurs.
 - b What are the negative health outcomes associated with impaired glucose regulation?
- 7 What is the difference between triglycerides and cholesterol?
- 8
 - a What are the two types of cholesterol?
 - b What is the difference between these two types of cholesterol in terms of their health risks?
- 9 What are the negative health outcomes associated with high blood lipids?
- 10 How is genetic information passed from parents to offspring?
- 11 Outline the ways in which genetics can influence the health of individuals or populations.

Environmental factors influencing health status

Environmental factors that influence our health and wellbeing are related to the physical environment in which we spend our lives. In recent years, the impact of the environment has gained recognition as a determining factor for the health and wellbeing of individuals and populations, with WHO estimating that approximately 24% of the global burden of disease is due to environmental factors.

The impact of the environment on health status may be positive or negative. The features of the environment that have an impact might be natural (such as temperature or UV radiation) or modified by humans (such as transport or housing).

environmental factors factors relating to the physical environment in which we live and work which can influence health status

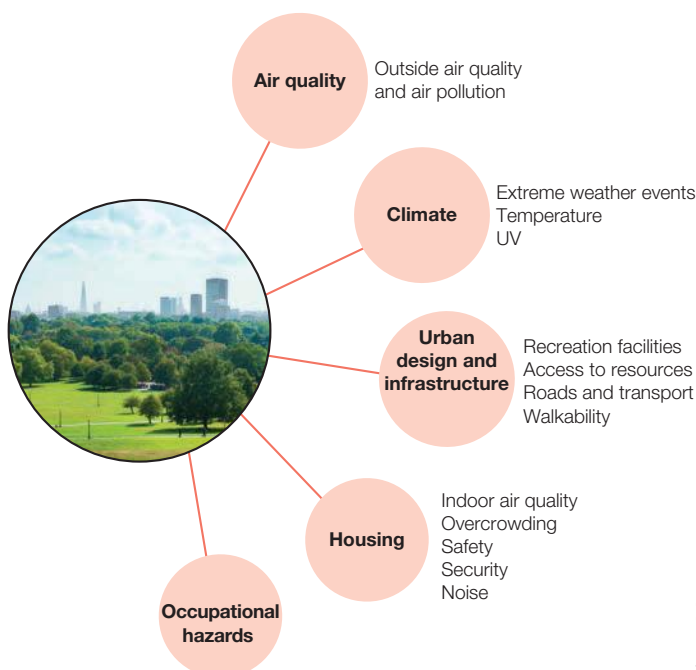


Figure 3.11 Examples of environmental factors that influence health status

air pollution when the air contains gases, dust or fumes in amounts that are considered harmful to health or comfort

Air quality

Air pollution occurs when the air contains gases, dust or fumes in amounts that are considered harmful to the health or comfort of humans. Examples of pollutants are particulate matter from car exhausts, gases such as carbon monoxide, and airborne biological pollutants such as mildew, pollen and dust. Air quality can change due to natural factors such as pollen in spring or particulate matter from bushfires, or it can be due to human factors such as car exhaust fumes or industrial emissions (e.g. coal power plants). Air pollution is variable – it can fluctuate, or remain steady for long periods of time. Air quality affects whole communities, as all people in a localised area are exposed, although individuals have different levels of sensitivity to different forms of pollution.

Poor air quality is associated with both morbidity and mortality. The common health outcomes in relation to exposure to air pollution and poor air quality are respiratory and cardiovascular conditions. Short-term exposure to air pollution can aggravate existing respiratory or cardiovascular conditions such as asthma, or cause headaches, irritation of the eyes, coughing, wheezing and chest tightness. Long-term exposure can cause reduced lung function, development of chronic conditions such as asthma and emphysema, and reduced immune function, and it is associated with development of lung and other types of cancer. In areas of high levels of pollution, it has been known to be associated with increased mortality from all causes, as well as reduced life expectancy (AIHW 2011).

Climate

climate weather conditions that prevail in an area over a long period, including air temperature, levels of UV radiation and likelihood of extreme weather events

Australia is a large country that experiences extremes in **climate**. It is the lowest, flattest and driest inhabited continent in the world. It contains a number of climate zones, from arid and semi-arid in the centre, to temperate in the south and tropical in the north. Increasingly, climate change is becoming a concern in Australia.

Australia experiences variable air temperature, ranging from the high 40s to well below 0°C. The hot weather experienced in Australia, particularly temperatures over 30°C for a prolonged period, is associated with increases in both morbidity and mortality. High temperatures can cause heat cramps, fainting, heat exhaustion, heat stroke and dehydration. It has been associated with cardiovascular health, with admissions to hospital for both myocardial infarctions (heart attack) and stroke. The risk of heat-related problems may increase for those living in urban areas (known as the 'heat island effect') and those without air conditioning. Climate change is estimated to have led to a 0.7°C rise between 1910 and 2006, which may lead to a worsening of the health effects associated with high temperatures.

Ultraviolet radiation

Ultraviolet (UV) radiation comes from high-energy rays that are invisible to the eye and are not felt as heat. The major source of UV radiation is the sun, and Australia has higher levels of UV radiation than most countries. Some UV exposure is essential, as it helps the body to produce vitamin D, and protects against osteoporosis. Consistent exposure to high levels of UV radiation is associated with development of skin and eye conditions, including melanoma (skin cancer) and cataracts.

Extreme weather

Extreme weather events such as droughts, floods, storms and bushfires all influence the health status of Australians. These effects may be immediate,

such as death or injury due to bushfire, or long-term, such as mental health issues associated with trauma.

- Bushfires are occurring more frequently, and climate change is expected to lead to longer and more severe fire seasons. Bushfires can lead to large-scale loss of life and injury. They can result in increased mortality, and burns and smoke inhalation can cause respiratory failure. Bushfires can also increase the likelihood of associated physical trauma such as road traffic accidents.
- Floods and storms can cause injury. They can also interfere with water treatment facilities, leading to contaminated water supplies and outbreaks of gastroenteritis. They can interrupt power supplies, leading to food spoilage, and can increase the risk of infectious and vector-borne illness, respiratory infections and wound infections.
- Prolonged periods of drought have a negative impact on the health of those affected. For example, farmers who rely on water for their livelihood are at a far greater risk of mental illness in times of severe drought.

All natural disasters are thought to have long-term health consequences, particularly associated with psychological disorders and post-traumatic stress, depression, anxiety, substance use and domestic violence.

Housing

The state of our **housing** has a large influence on the health status of both individuals and populations. Housing can influence health status in a number of ways. For example:

- Overcrowding occurs when a dwelling is too small for the number and composition of people living in it. For example, children under 18 and couples can reasonably be expected to share a bedroom; however, single adults over the age of 18 should have access to their own bedroom in an appropriately sized house. Overcrowding is associated with poorer health outcomes, such as higher rates of musculoskeletal conditions, bronchiolitis (respiratory condition), skin infection, heart failure, injuries, and mental health conditions due to stress. Higher infection rates are thought to be related to the extra strain on facilities such as laundry, bathroom and shower creating an environment where infections can flourish, or through increased spread of infectious diseases due to close contact between the occupants.
- Noise experienced due to housing location is associated with poorer health outcomes, particularly if it affects the sleep of inhabitants. In urban areas, noise is a problem, particularly transport (road) noise, barking dogs, noisy neighbours, alarms and construction work. Chronic noise exposure has been associated with poorer cognitive health, including reduced attention span and short-term memory, especially in children. There is evidence that persistent exposure to relatively high levels of noise increases cardiovascular risk due to a stress response, including hypertension (high blood pressure) and coronary heart disease.
- Negative health outcomes can be experienced due to poor indoor air quality, for example due to tobacco smoke, asbestos, dust and gases such as nitrous dioxide released from combustion sources such as gas stoves and heaters. The impact of these factors is made worse when the ventilation is poor. Poor indoor air quality has been associated with poor respiratory health, with

housing the accommodation that people reside in, including the type of dwelling and its condition, the location, and the number of people who live in it



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wheezing, coughing, irritation of the upper respiratory tract, aggravation of asthma symptoms or initiation of asthma, and chest tightness. Some pollutants, such as tobacco smoke, are linked to poorer cardiovascular health outcomes like heart disease mortality, and acute and chronic coronary heart disease morbidity, and are associated with cancer, including lung and breast cancer.

- House design can lead to injuries if the house's construction and/or maintenance are below standard. Aspects of house design that have potential for injury include stairs, floor surfaces (e.g. non-slippery in wet areas), electrical wiring, balconies and railings, and safety fences around bodies of water (e.g. swimming pools). Young children are most vulnerable to injury, but safety is also important for the elderly, who may need additional design features such as hand rails (AIHW 2016).

Urban design and infrastructure

urban design and infrastructure the arrangement, appearance and function of suburbs, towns and cities

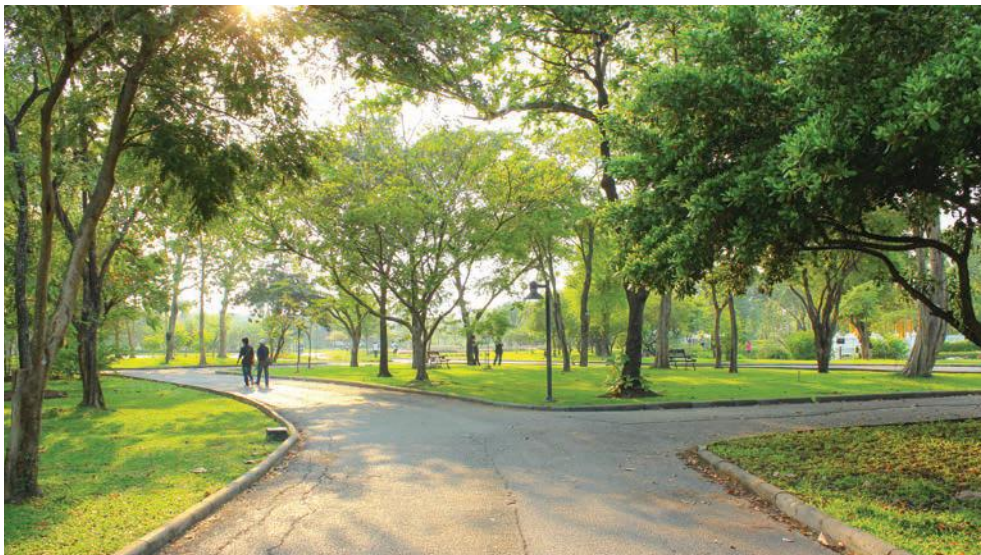
Urban design and infrastructure can influence the health status of individuals and populations for better or worse, in a number of ways.

Roads and transport are an important part of urban design, and are the means by which we move people and objects from one location to another – for example, by car, truck, bus, train or aeroplane. Roads and transport influence health status by, for example, generating noise and pollution, and encouraging sedentary behaviour. Road traffic accidents can cause injury or death, and are a major global health concern.

Walkability is a feature of the environment that can lead to positive health outcomes. Walkability means local infrastructure is established in a way that enables residents to walk comfortably rather than use transport. It includes such features as quality paths, safety measures and accessible location of services. Studies have found that populations respond better to environments that support physical activity, and the built environment can either facilitate or constrain physical activity. Walkability has been found to be associated with lower BMI and higher rates of physical activity, which in turn are associated with a range of health benefits including reduced rates of overweight people and obesity, cardiovascular disease, diabetes and some cancers.

The extent to which individuals and populations have access to resources due to their location and accessibility is an important feature of our environment. Access to facilities such as doctors, hospitals, schools and places to buy food all influence our health status. Australia is a large country with a relatively small population, and many people live in areas that may not provide physical access to resources. Lack of access to necessary medical treatment can increase rates of morbidity and mortality. Not having consistent access to food, known as food security, has negative health outcomes. In an area with a high density of 'fast food restaurants', the intake of processed food is likely to be higher, and this is associated with negative health outcomes including being overweight and obese, increased risk of cardiovascular disease, and type 2 diabetes.

Green space and recreation facilities have a positive influence on the health status of individuals and populations. Examples of green space include bushland, parks, outdoor sports facilities and school playgrounds. Although it is difficult to measure, access to green space and recreation facilities is associated with a lower prevalence of self-reported anxiety and depression, and to a lesser extent with reduced risk of heart disease, diabetes, and chronic neck and back pain. Green space is also associated with positive social health outcomes by providing a space in which gathering and activity can occur (AIHW 2011).



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Figure 3.12 Green space and recreation facilities have a positive influence on the health of individuals and communities.

Workplace hazards

Workplace hazards are risks that are encountered in the workplace as part of doing a job. There is a range of hazards employees might encounter in their workplace, such as:

- chemical hazards from exposure to chemicals that can cause health risks, e.g. mechanics are exposed to engine exhaust fumes over a long period, which can impact on their respiratory health
- biological hazards from exposure to biological agents, e.g. those who work outside might be at risk of insect or snake bites; health workers are exposed to bodily fluids which can transmit disease
- psychosocial hazards that pose a risk to mental health, e.g. highly stressful occupations such as being a member of the police force or fire service
- physical hazards where aspects of the environment can cause physical damage, e.g. persistent loud noises causing hearing damage; UV radiation which can lead to increased risk of melanoma.

workplace hazards short- and long-term risks that are encountered in the workplace as part of doing a job

Workplaces are required by legislation to act to minimise the risks for employees in the workplace. However, many risks cannot be eliminated entirely and can negatively influence the health status of individuals and populations.

Review and reflect

1 a Describe the characteristics of air quality that can influence health status. b Outline the ways in which air quality can have an impact on health status.	3 a Identify the major extreme weather events that occur in Australia.
2 a Describe UV radiation. b Outline how UV radiation can influence health status.	b For each extreme weather event you identified in part a, describe the major influence it can have on health status.



- >
- 4 a What are the health outcomes of experiencing high air temperatures?
 - b Who is most at risk of negative health outcomes from high temperatures in Australia?
 - 5 What is overcrowding, and in what ways can it influence health status?
 - 6 What are the major sources of noise experienced in urban environments?
 - 7 In relation to housing, describe how different elements of safety can influence health status.
 - 8 What are the similarities between indoor and outdoor air quality?
 - 9 a What is 'walkability' and what influence does it have on health status?
 - b Provide one similarity and one difference between walkability and access to recreation facilities as factors of our environment that can influence health status.
 - 10 Describe the term 'workplace hazards'.
 - 11 Provide one example of a workplace hazard and how it might influence status.

Health status of different population groups

While the health status of Australians overall is quite high, there are population groups within Australia who experience health inequities. Many of these differences in health status are due to factors that are outside the control of individuals, including the biological, sociocultural and environmental factors discussed in the previous sections. This section examines the health status of these population groups, and discusses how and why these inequities occur.

Males and females

In many ways, males have a significantly worse health status than females. The table below shows how the health status of males and females differs according to key indicators.

Table 3.4 Health status of males versus females in Australia, 2016

Indicator	Description
HALE	Males have a lower HALE (62.4) than females (64.5).
Life expectancy	Males (80.3 years) have a lower life expectancy than females (84.4 years).
Overall mortality	Males have a higher overall mortality rate across the lifespan.
Burden of disease	Males experience a higher overall burden of disease.
Incidence and prevalence of specific conditions	- Cancer incidence (all types) is higher for males than females, and females have a higher survival rate. - The incidence rate of melanoma is higher for males (60 per 100 000 people) than for females (39 per 100 000) (Cancer Australia 2017) - Prevalence of coronary heart disease is higher in men than women, and associated mortality rates are higher in men than women. - Prevalence of type 2 diabetes is higher for men, and mortality rates associated with diabetes are higher for men than women. - Men experience a higher incidence of injuries, and a higher mortality rate associated with injuries. - Women experience a higher prevalence of osteoporosis. - Women are more likely to report that they experience mental illness than men. Women are more likely to experience anxiety and depression, whereas males are more likely to experience substance-use disorders. - The suicide rate for males was three times higher than for females (Mindframe 2016).

(Source: data from Australia's Health 2016 (AIHW 2016) unless otherwise stated.)

Factors that influence the health status of males and females

A variety of factors, including biological, environmental and sociocultural, act together to cause the difference in health status between males and females. Some examples of these factors and how they differ between males and females are discussed below.

Biological

- Men are more likely to be overweight or obese (71%) than women (56%), and are more likely to store fat around the abdomen, while women are more likely to store fat around the hips and thighs. This can place men at higher risk of cardiovascular disease.
- Impaired glucose regulation is nearly twice as common in men, leading to a higher risk of type 2 diabetes.
- Hormones involved in the development of osteoporosis follow different patterns in males and females. In females, oestrogen plays a key role in bone mass, and drops sharply at menopause. This sudden drop results in a dramatic increase in rates of osteoporosis in women after menopause. The male hormone testosterone is associated with osteoporosis in males, but it doesn't drop sharply at the same age as women, although it does gradually decline.

Environmental

The major environmental factor that can cause health inequities between males and females is occupational hazards causing injury. Occupations that have the highest rates of mortality are male-dominated. For example, the mortality rate for machinery operators and drivers was 8.12 deaths per 100 000 workers, and the rate for labourers was 3.55 per 100 000 workers. Both jobs are overwhelmingly male-dominated (Better Health 2011).

Males are more likely to be in occupations where they work outside and are exposed to UV radiation. This contributes to the higher rate of melanoma and associated mortality in males.



Sociocultural

Cultural gender norms and stereotypes differ between males and females in ways that have the potential to cause health inequities. This can be reinforced by the media, which often presents messages about acceptable behaviours for males and females. While these gender stereotypes are increasingly being questioned, they continue to influence the health status of males and females. For example:

- Females are more likely to access *health care services* than males, who may feel bound by a 'tough' male stereotype in which it is unacceptable to ask for help. This may mean that health problems in men are not diagnosed or treated, leading to higher morbidity and mortality. This may be particularly so for mental illness.
- Women generally have higher level of *social support* than men, and it is generally seen as more acceptable for females to talk about their problems.
- Ideas of masculinity and femininity can influence choice of *occupation*, with males dominating more hazardous occupations, which can lead to higher rates of injury.

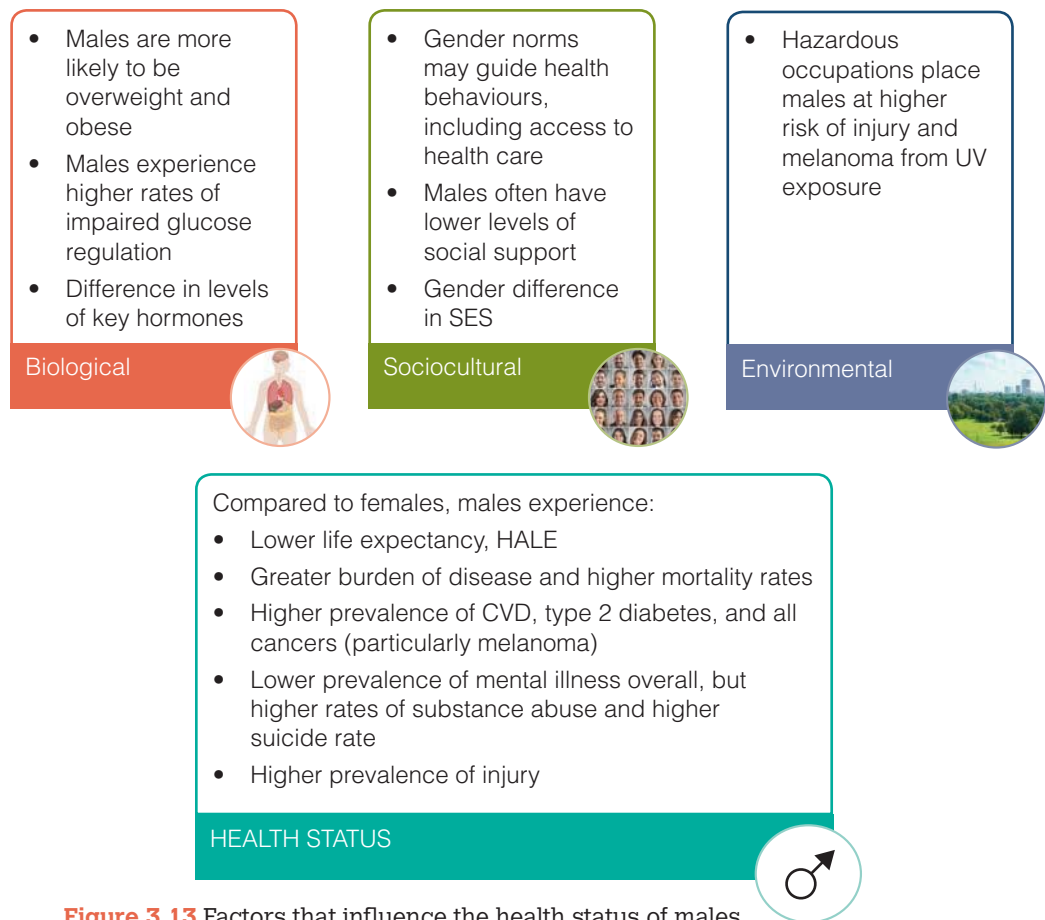


Figure 3.13 Factors that influence the health status of males

Men generally have a higher socioeconomic status (SES), especially with respect to occupation and income. Despite comprising roughly 46% of all employees in Australia, women take home on average \$283.20 less than men each week in full-time earnings, with a pay gap of 18.2%. This gap has remained between 15 and 18% for the past two decades (AHRC n/d). This higher SES may have a positive influence on the health of men compared with women.

Review and reflect

- Summarise the health status of the male population in Australia compared with the female population.
- Explain how hormones can act as a biological factor that influences the health status of males and females differently.
- Explain the effect that different patterns of fat storage can have on the variations in health status between males and females.
- Identify one sociocultural factor that can explain the variation in health status between males and females, and use health status data to support your explanation.
- Explain how levels of social support and social exclusion affect the health status of males and females.
- Outline two ways in which environmental factors can lead to poorer health in males than females in Australia.

Indigenous and non-Indigenous

Indigenous Australians (Aboriginal or Torres Strait Islander) make up an estimated 3% of the Australian population. The majority of Indigenous Australians live in NSW (208 476) and Queensland (188 954). By nearly every measure currently in use, Indigenous Australians are reported to experience poorer health status than non-Indigenous Australians. The following table shows some examples of how the health status of Indigenous and non-Indigenous Australians differs, according to key indicators.

Table 3.5 Differences between the health status of Indigenous and non-Indigenous Australians, 2016

Indicator	Description
Life expectancy	Indigenous Australians have a lower expectancy than non-Indigenous; 10.6 years less for men, and 9.5 years less for women.
Burden of disease	Total burden of disease was 2.3 times higher for Indigenous versus non-Indigenous people in 2011.
U5MR	Indigenous U5MR is 1.9 times higher than the non-Indigenous rate (DMPC 2014).
Infant mortality rate	IMR is 1.7 times the non-Indigenous rate (DMPC 2014).
Specific conditions	Indigenous Australians compared to non-Indigenous Australians: • asthma rates are 1.9 times higher • COPD rates are 2.5 times higher • diabetes (all types) is three times more common • overall cancer incidence is similar, but there is a difference in types of cancer suffered (shown in Figure 3.14) • more likely to report feeling depressed, or having depression as a long-term condition (12% compared to 9.6%) • age-standardised suicide rate is almost twice as high, rising to five times as high for 15–19 year olds (34 and 7 per 100 000 population) • twice as likely to suffer from partial or complete blindness, or otitis media (middle ear infection) • experience CVD at a rate 1.3 times higher • poorer oral health, with higher prevalence of dental caries and missing teeth • higher incidence of injury

(Source: *Australia's Health 2016* (AIHW 2016) unless otherwise stated)

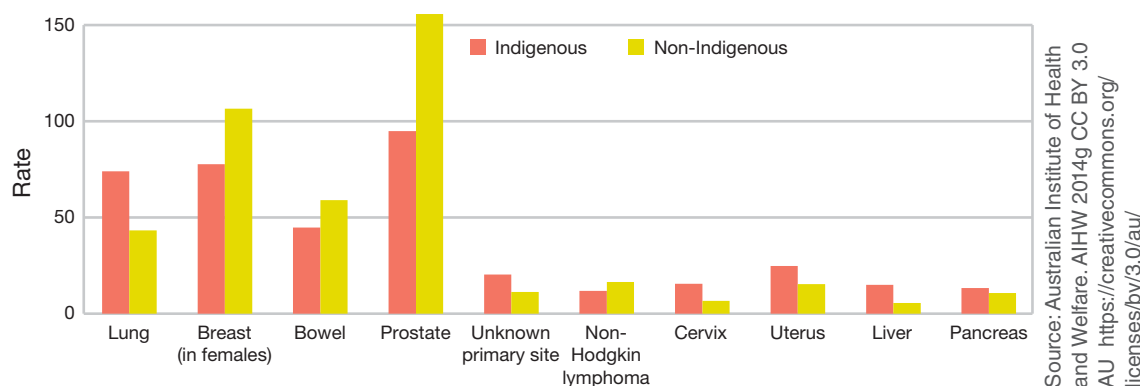


Figure 3.14 Incidence rates of selected cancers, by Indigenous status, 2005–09

Factors that influence Indigenous health status

A variety of factors, including biological, environmental and sociocultural, act together to cause the difference in health status between Indigenous and non-Indigenous populations. Some examples of the factors and how they differ between these populations is discussed below.

Biological

- Indigenous Australians of all ages are 1.6 times more likely to be obese than non-Indigenous Australians.
- Twenty per cent of Indigenous Australians have high blood pressure – the non-Indigenous rate is 17 per cent.
- Indigenous Australians are nearly twice as likely as non-Indigenous Australians to have high triglycerides and lower than normal levels of HDL ('good' cholesterol) (ABS 2014).
- Indigenous Australians are more likely than non-Indigenous adults to show signs of insulin resistance.

This combination of factors may contribute to the higher rates of CVD and type 2 diabetes in the Indigenous population, as all these factors are known to be associated with increased risk.

Environmental

In 2012–13, about 57% of Indigenous children aged 0–14 were living in a household with a daily smoker, compared with 26% of non-Indigenous children. Poorer indoor air quality is associated with increased prevalence of lung disease and asthma.

The Indigenous population face greater housing challenges. Indigenous Australians experience homelessness at 14 times the rate of non-Indigenous Australians. Indigenous households are more likely to be over-crowded (12.9% compared with 3.4%) (AIHW 2014). Overcrowding can contribute to infections (including ear, eye and respiratory) and mental illness (including depression and anxiety) among other conditions.

One in four (25%) Indigenous Australians live in remote or very remote areas, and may not have access to health services. About 75% of Indigenous Australians living in major cities or regional areas with established health care services may still lack access, due to the limited number of culturally or socially appropriate services. This lack of access may affect the rate at which conditions can be diagnosed and treated, resulting in increased morbidity and mortality.

Sociocultural

Socioeconomic status (SES) is a major cause of inequities in Indigenous health, with studies finding that between one-third and half of the health gap between Indigenous and non-Indigenous Australians is due to differences in SES (AIHW 2017). Indigenous Australians have higher rates of unemployment or underemployment, lower incomes and lower levels of education, all of which are associated with poorer health outcomes.

Thirty per cent of Indigenous Australians reported that they did not access health care when it was needed, for reasons including: feeling embarrassed, feeling that the service was inadequate, lack of trust, and discrimination or language problems. This could contribute to higher rates of morbidity and mortality. Counsellors (43%) and dentists (23%) were often avoided because cost



Fairfax Syndication/John Lamb

was a major factor. This avoidance could contribute to the poorer mental and oral health outcomes for the Indigenous population (DPMC 2014).

Indigenous Australians are nearly twice as likely as non-Indigenous Australians to feel isolated (BSL 2014), a factor that could contribute to poorer health outcomes.

The media is thought to have a significant influence on the health inequities experienced by Indigenous Australians. Reporting of Indigenous health status in the media has been shown to be overwhelmingly framed in negative terms. If Indigenous Australians are persistently portrayed as welfare-dependent, drunk and violent, it can fuel racism and reinforce negative stereotypes. This can cause poorer health outcomes for Indigenous Australians who are likely to experience further social exclusion. There is also the risk that stereotypes can be internalised, leading to decreases in self-esteem and increasing psychological distress.

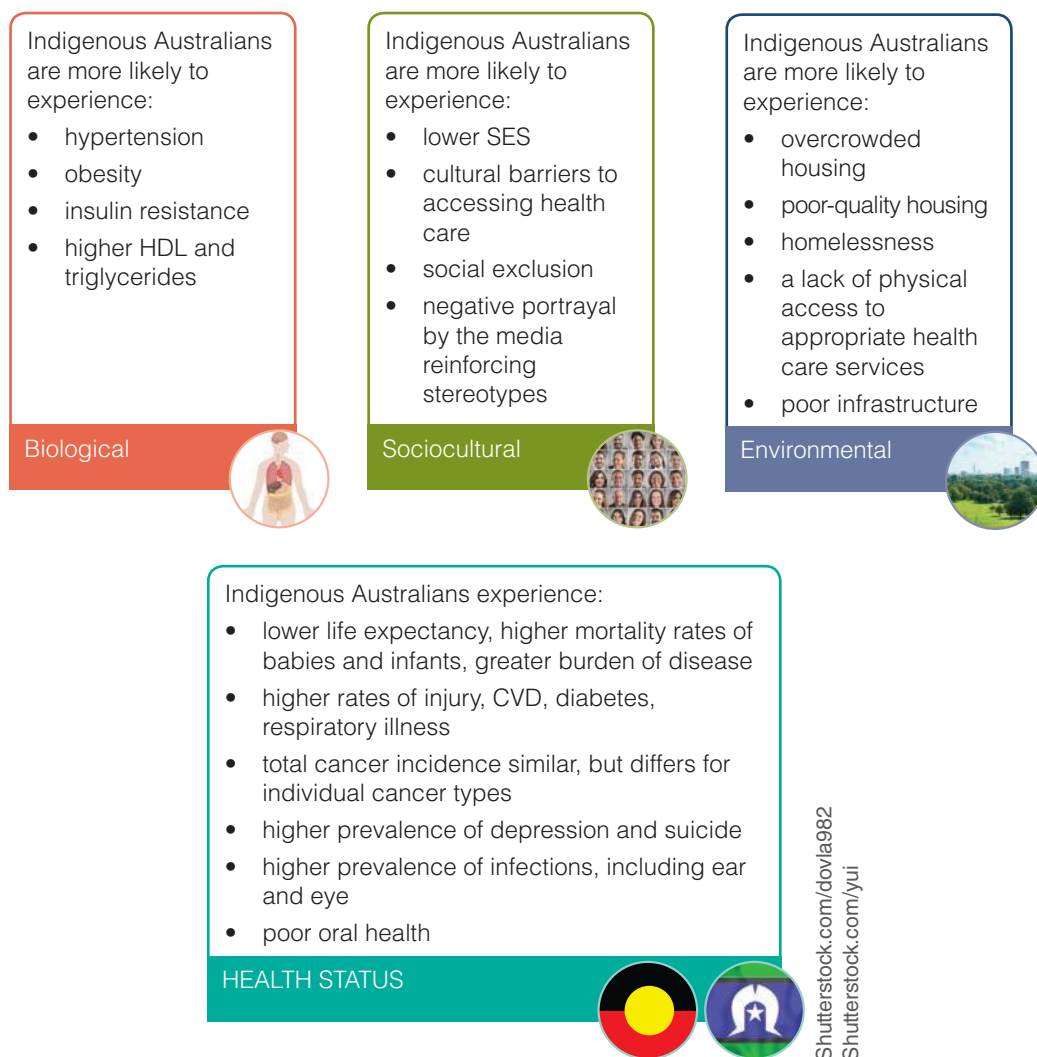


Figure 3.15 Factors that influence the health of Indigenous Australians

Review and reflect

- 1 Briefly summarise the health status of Indigenous Australians compared with the non-Indigenous population.
- 2 Explain how the following factors contribute to a difference in health status between the Indigenous and non-Indigenous populations:
 - a obesity
 - b levels of HDL cholesterol
 - c insulin resistance.
- 3 Describe how social exclusion can influence the health status of Indigenous people compared to non-Indigenous people.
- 4 Housing is a major environmental factor affecting the health of Indigenous and non-Indigenous populations. Outline three different aspects of housing that may contribute to differences in health status between these groups.
- 5 Explain why rates of poor oral health might be higher in the Indigenous population.

High and low socioeconomic status

There are dramatic differences between the health status of those in the lowest and highest socioeconomic groups. Some examples of how health status differs between SES groups, according to key indicators, is shown in the table below.

Table 3.6 Differences in health status between SES groups, 2016

Indicator	Description
Self-assessed health status	Lower SES groups have a poorer self-assessed health status (ABS 2015).
Mortality	Mortality from all causes in the lowest SES group is 29% higher than in the highest SES group in 2009–11 (Table 3.7) (AIHW 2016).
Burden of disease	Total burden of disease was related to SES. Those in the lowest SES group experience a burden of disease 1.5 times the rate of those in the highest SES group (Australian Burden of Disease Study 2011; AIHW 2016).
Specific conditions	Lower SES groups, when compared to higher SES groups, are more likely to have: • a higher prevalence of chronic diseases (Figure 3.16), including higher prevalence of coronary heart disease, lung cancer and fair or poor oral health (AIHW 2016) • increased incidence of injury (ABS 2015) • mortality rates in leading causes of death that are generally higher (Figure 3.17), with the exception of dementia and Alzheimers.

(Source: *Australia's Health 2016* (AIHW 2016) unless otherwise stated)

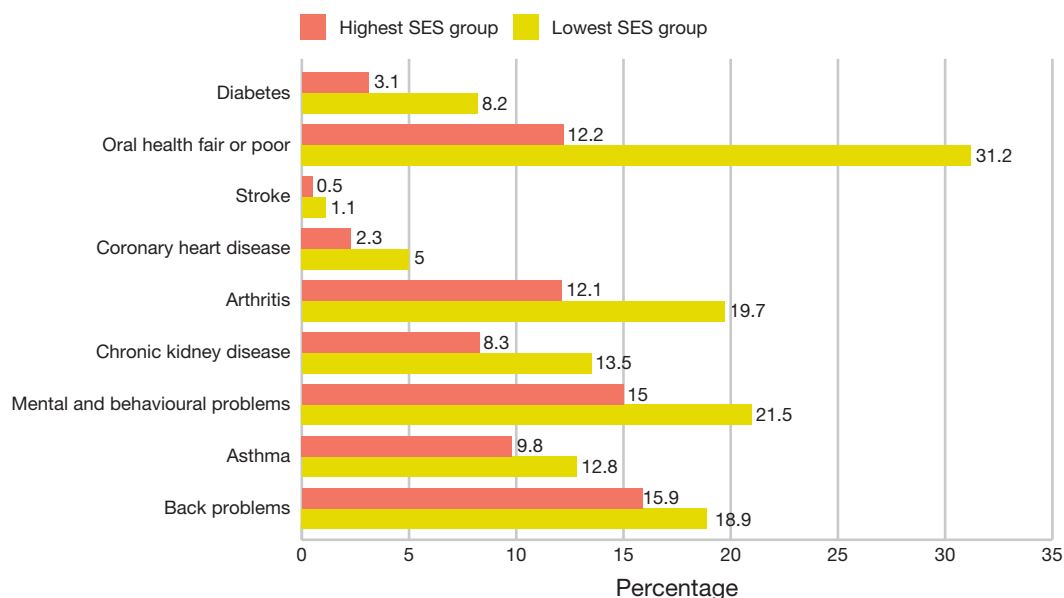


Figure 3.16 Prevalence of chronic conditions in highest and lowest SES groups

Source: Australian Institute of Health and Welfare. AIHW 2016
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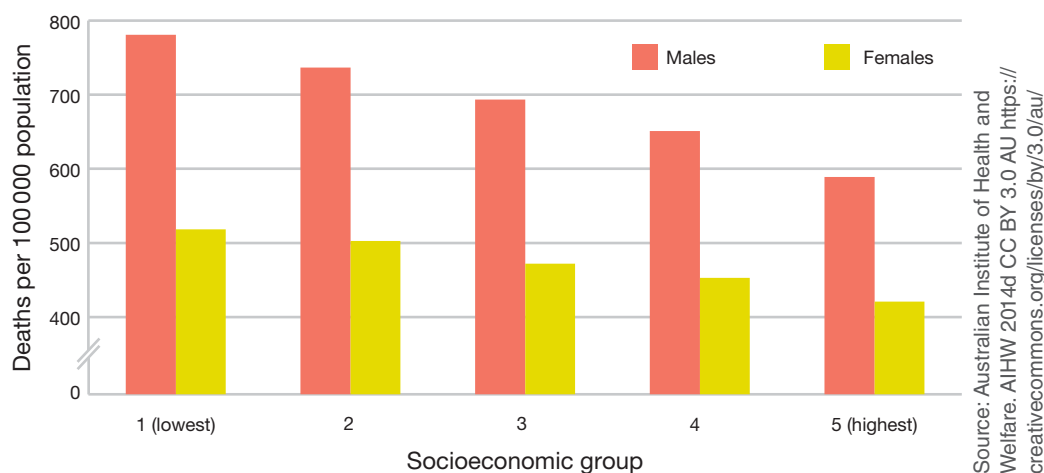


Figure 3.17 The social gradient in Australian mortality, 2009–2011

Table 3.7 Inequalities in leading causes of death, 2009–2011

Causes of death	Lowest SES group (/100 000)	Highest SES group (/100 000)	Ratio (rate) lowest/highest SES
Coronary heart disease	98	71	1.4
Cerebrovascular disease	46	42	1.1
Dementia, Alzheimer's disease	32	34	0.9
Lung cancer	40	25	1.6
COPD	27	16	1.7
All causes	639	495	1.3
Potentially avoidable deaths	194	105	1.8

Source: Australian Institute of Health and Welfare. AIHW 2014d CC BY 3.0 AU <https://creativecommons.org/licenses/by/3.0/au/>

Factors influencing the health status of SES groups

A variety of factors, including biological, environmental and sociocultural, act together to cause the difference in health status between high and low SES populations. Some examples of the factors and how they differ between these populations is discussed below.

Biological

According to *Australia's Health 2016* (AIHW 2016):

- those in low SES groups are more likely to be overweight or obese than those in high SES groups (66% compared to 58%)
- adults in the lowest socioeconomic areas were more likely to experience hypertension (26% compared to 21%).

These factors may explain why those with a lower SES are at higher risk of cardiovascular disease, including stroke and coronary heart disease.

People in lower socioeconomic areas were also more likely to show signs of impaired glucose regulation, demonstrating why those in lower SES groups may be more at risk of type 2 diabetes.

Environmental

Housing availability, quality and location is closely associated with socioeconomic status.

- The lower the SES, the higher the chance of overcrowding. Overcrowding is associated with poorer health outcomes, including increased risk of injury, higher prevalence of infections, and poorer mental health.
- Lower SES housing is more likely to have inadequate cooking and food storage facilities, making it harder to consume homemade and/or fresh food. When housing is located near more fast food outlets, this environmental context encourages the consumption of processed, fatty, sugary and salty foods.
- Lower SES housing is more likely to be located in an area with poorer outside air quality – for example, closer to industrial estates. This is associated with higher rates of respiratory illness such as asthma and COPD, and also some types of cancer, such as lung cancer.
- Lower SES neighbourhoods are also likely to have poorer 'walkability'. For example, the neighbourhood may be unsafe, have poorly maintained roads and paths, and fewer nearby facilities, which means other transport is required.
- People from lower SES populations are more likely to work in hazardous workplaces such as factories, or in jobs involving heavy machinery. This can increase the risk of injuries and associated morbidity and mortality.

Sociocultural

People in a lower SES population are likely to have lower levels of education and lower incomes, and are more likely to be unemployed or underemployed.

- Having a lower level of education means a lower level of health literacy is more likely, which can make it more difficult for people to access and understand health information, and use it to improve their health status.

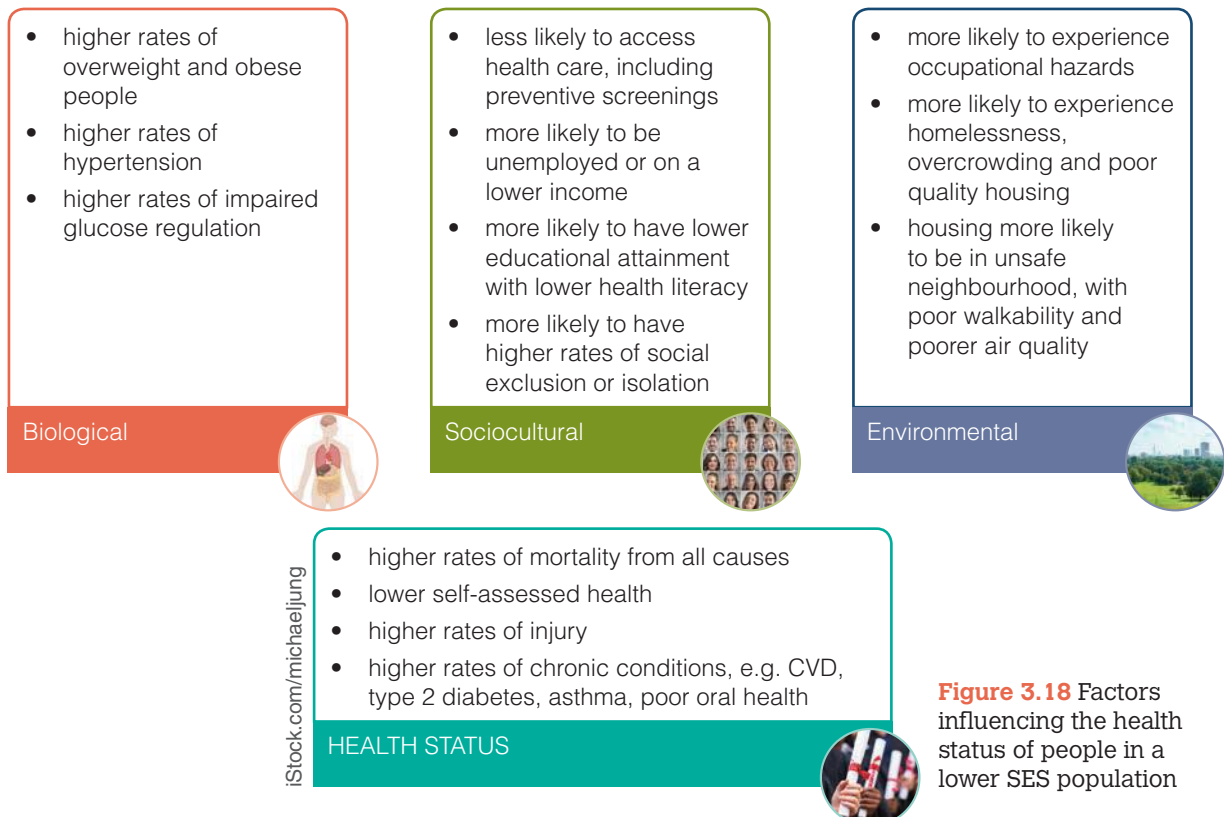


Figure 3.18 Factors influencing the health status of people in a lower SES population

- Higher rates of unemployment in the lower SES population mean a lower income, reducing access to shelter, health care and nutritious food. In turn, this has a negative impact on health status, either through under-nutrition, or a reliance on processed foods high in fats and sugars, ingredients associated with weight gain, and some types of cancers.
 - Lower SES is associated with higher rates of social exclusion and isolation. For example, lack of social support can exacerbate mental health problems.
- There is a significantly lower level of oral health in the low SES population. This may be due to a range of factors, including the high cost of dental treatment, and not understanding the factors that can cause poor oral health.

Review and reflect

- Briefly summarise the health status differences between the high and low SES populations.
- For each of the factors listed in parts a to c:
 - identify what type of factor it is (biological, sociocultural or environmental)
 - explain how it might lead to health status differences between high and low SES groups.
 - hypertension
 - outdoor air quality
 - social exclusion.
- Identify two factors that might account for the different prevalence of type 2 diabetes in the high and low SES populations, and explain how these factors could cause this difference.
- Lower SES groups suffer from a higher incidence of injuries. Using a factor that influences health status, provide one reason that might explain this difference in health status.
- Explain whether higher SES or lower SES groups are likely to have a higher level of health literacy, and two ways in which this might explain the difference in health status between groups.

Those living within and outside Australia's major cities

Australia is a large country by area, with a relatively small population by global standards. We are also one of the most urban societies, with a high percentage of the population living in cities. Only 29% of Australians live in rural or remote areas, which is any area outside Australia's cities. Melbourne and Geelong are examples of major cities in Victoria. The health status of those living outside Australia's major

Table 3.8 How health status differs between living within or outside major Australian cities, 2016

Indicator	Description
Life expectancy	Those living in rural and remote areas outside of major cities have a lower life expectancy.
Burden of disease	As remoteness increases, total burden of disease increases. It is estimated that very remote populations have a burden of disease 1.7 times higher than those living in major cities.
Mortality rate	- Those living in remote and very remote areas have mortality rates 1.4 times as high as those living in major cities. - For nearly all causes of death, mortality rates are higher for those living outside major cities. Increasing remoteness is associated with higher mortality rates.
Specific conditions	Those living outside of major cities experience: - higher mortality rates from coronary heart disease - incidence of injury 1.2 times higher than those living in major cities - suicide incidence approximately twice the rate of major cities - a mortality rate four times higher for land transport accidents - higher prevalence of chronic conditions (shown in Table 3.9).

cities tends to be poorer than those who live within a major city. The table below shows some examples of how health status differs between those living within or outside major cities, according to key indicators.

Table 3.9 Percentage of chronic diseases in city, inner regional and outer regional areas, Australia

Disease type	In major cities (%)	In inner regional areas (%)	In outer regional/remote areas (%)
Arthritis	14	20	18
Back problems	16	18	16
Asthma	10	12	12
COPD	2.4	3.4	2.7
Blindness	0.5	0.9	0.8
Deafness	9.8	15	14
Diabetes	4.7	6	6.7
CVD	4.7	6.7	5.8
Cancer	1.6	1.7	1.8
Mental illness	17	19	19

Source: Australian Institute of Health and Welfare. AIHW 2017 CC BY 3.0 AU <https://creativecommons.org/licenses/by/3.0/au/>

Factors influencing health status by location

A variety of factors, including biological, environmental and sociocultural, act together to cause the difference in health status between those living within and outside major cities. Some examples of the factors and how they differ between these populations is discussed below.

Biological

People living outside major cities are more likely (1.1 times) to be overweight or obese than those living in major cities. They are also more likely to suffer from hypertension, and slightly more likely to have high total cholesterol levels (Heart Foundation n/d; Baker IDI Heart and Diabetes Institute 2011).

These factors all contribute to a higher rate of CVD in populations living outside Australia's major cities, as well as a higher risk of some types of cancers.

Environmental

People living in remote and very remote areas generally have poorer access to resources, including health services, supermarkets and recreational facilities.

- Poorer access to health services can mean reduced access to GPs for prevention and treatment, reduced access to pharmaceuticals, lower rates of screening (e.g. bowel and breast cancer screening) and lower rates of immunisation. People travel long distances to receive specialist care or hospital treatment, and chronic illness may force them to relocate. This can increase morbidity and mortality for a range of conditions, increasing the burden of disease.
- Residents outside major cities lack consistent access to affordable fresh fruits and vegetables, the consumption of which is part of a healthy diet, which can help lower the likelihood of conditions such as type 2 diabetes, chronic kidney disease and cardiovascular disease.

People living outside major cities are more likely to be employed in hazardous workplaces where there is a high risk of injury, such as mining and farming. Both

these occupations are dangerous and associated with higher rates of morbidity and mortality from injury. Jobs outside major cities are also more likely to be outside and involve greater exposure to UV radiation, which can increase rates of melanoma.

Transport outside major cities often involves longer driving times, often on poor-quality and poorly lit roads that may also have high speed limits with reduced monitoring. These factors can lead to higher numbers of road traffic accidents, with increased morbidity and mortality and associated burden of disease for injuries.

People living outside major cities are more at risk from extreme weather events such as drought, floods and bushfires. These events can affect physical health and can also interfere with people's ability to earn an income. Environmental events are associated with higher rates of depression, anxiety, drug and alcohol abuse, and suicide.

In general, air quality is higher outside major cities, although there may be issues with particle emissions – for example, from mining, bushfires, wood fires and burning off. Poorer air quality can be associated with higher rates of respiratory illness in major cities.

Sociocultural

People who live outside major cities are more likely to have a lower SES, with lower educational attainment and lower income. These populations are therefore likely to have reduced access to resources, and also lower health literacy, both of which are associated with poorer health outcomes.

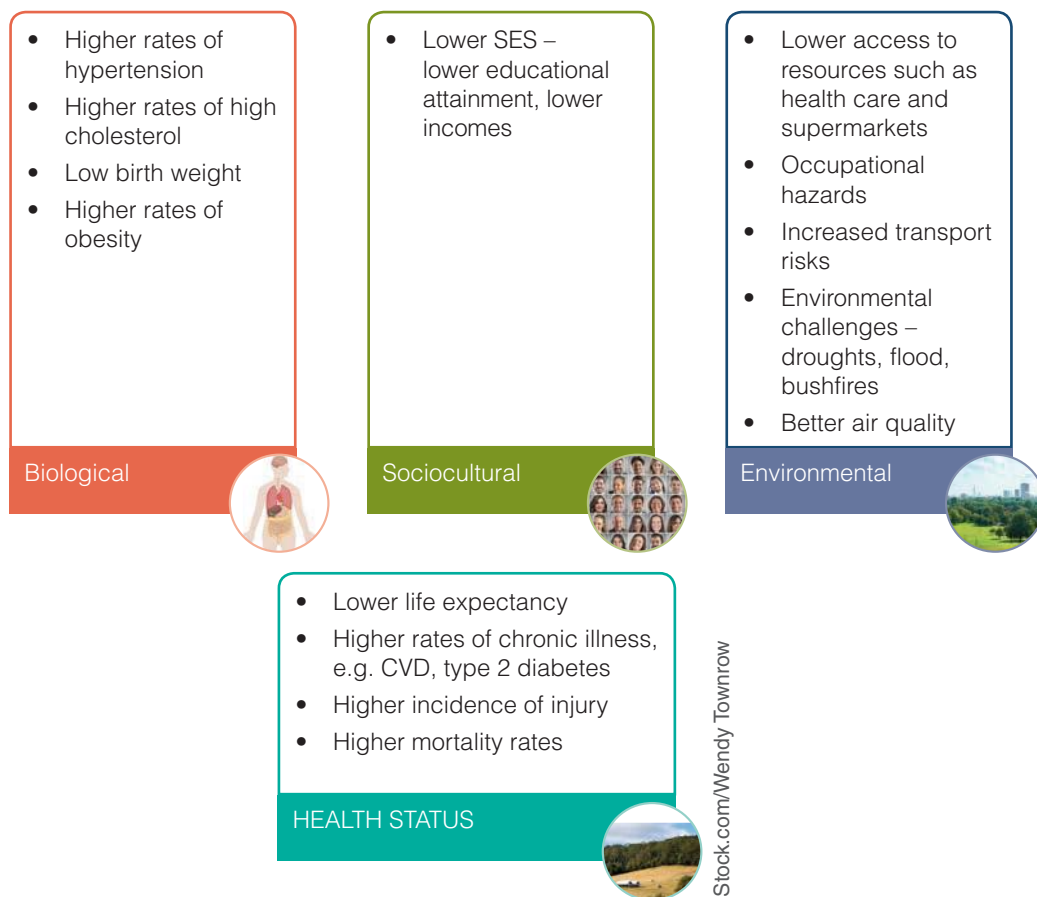


Figure 3.19 Factors influencing the health status of people living outside Australia's major cities.

Review and reflect

- 1 Summarise the ways in which the health status of populations differs based on whether individuals live within or outside major cities.
- 2 Explain how the following biological factors contribute to differences in health status of those who live outside major cities:
 - a higher rates of hypertension
 - b higher cholesterol levels.
- 3 How can SES be used to explain differences in health status between populations within major cities and those outside cities?
- 4 Access to resources is an environmental factor that can influence the health of people living within or outside major cities. Explain the different ways in which access to resources might contribute to the differences in health between these groups.
- 5 Explain how occupational hazards are a factor that can influence the health status of those in regional areas, compared to those living in major cities.

Factors contributing to Australia's health status

In the previous section we discussed how the context of people's lives can influence their health status, and how the environments and conditions experienced by different populations can cause health inequities between groups.

A number of factors are directly responsible for a large proportion of the burden of disease across population groups in Australia. Many of these factors relate to the choices individuals make, and are closely linked to the broader factors that influence health and wellbeing. These factors can increase or reduce the likelihood of developing chronic, non-communicable conditions including CVD and type 2 diabetes, which are at high levels in Australia. These so-called lifestyle diseases are common and increasing in prevalence, and so it is important to understand their impact.

In Australia, lifestyle factors that have a strong impact on our health status are:

- smoking
- alcohol
- dietary risks, including under-consumption of fruit and vegetables, high intake of fat, salt and sugar, and low intake of fibre, calcium and iron
- high body mass index.

Smoking

Tobacco smoking is the leading risk factor contributing to burden of disease in Australia, and is responsible for 9% of the total burden of disease.

Smoking is associated with a number of chronic conditions that have a high prevalence in Australia, including CVD, respiratory disease and many types of cancer. It is one of the leading causes of preventable death in Australia.

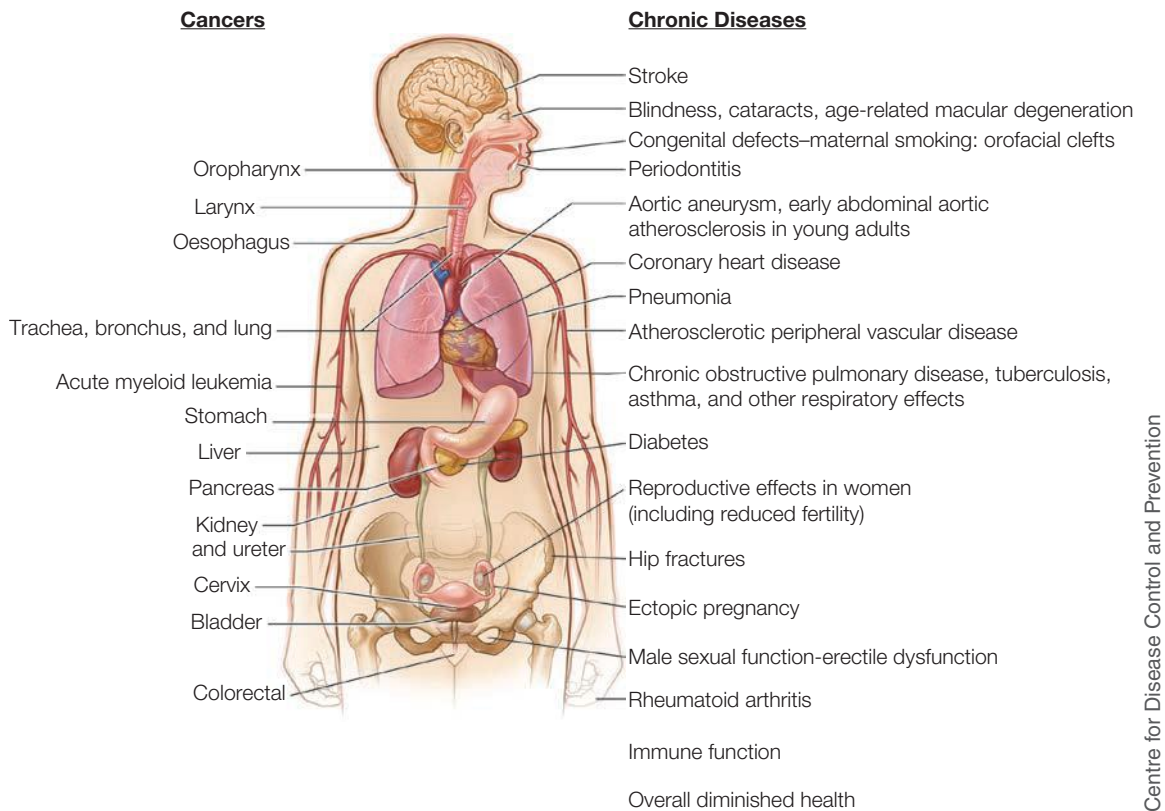


Figure 3.20 Risks from smoking

CARDIOVASCULAR DISEASE

- Smoking can cause arteries to thicken and narrow, which causes an increase in heart rate and blood pressure as the heart struggles to pump blood around the body.
- Smoking can also cause clots to form, which can restrict blood flow to parts of the body.

RESPIRATORY DISEASE

- Cigarette smoke contains chemicals that interfere with the body's ability to filter air and clean out the lungs.
- Smoke irritates the lungs, increases the production of mucus and increases congestion, which causes smokers to cough.
- Smoke can trigger asthma attacks.
- Tissues of the lung can be damaged, resulting in a very reduced ability to transfer oxygen to the bloodstream (emphysema).

CANCER

- Tobacco smoke contains at least 60 known carcinogens – chemicals that can cause mutations or faults in body cells as they divide. These cells can form cancerous tumours.
- Cells in the lung are most at risk, but smoking can cause cancers in many other parts of the body.

Figure 3.21 How smoking causes disease

Smoking rates in Australia have been in steady decline for the past 50 years.

- The smoking rate in adults is 13.3%, almost half the rate in 1980. The smoking rate of Australian secondary school students aged 16–17 years is 10.3% (Quit Resource Centre 2016).
- The proportion of children exposed to tobacco smoke in the home has decreased significantly, from 31% in 1995 to 3.7% in 2013 (AIHW 2016).
- The proportion of women smoking during pregnancy has decreased from 15% in 2009 to 12% in 2013 (AIHW 2016).
- The population groups at risk of health inequities are more likely to smoke. These groups include people living in remote areas, Indigenous Australians and people living in lower SES areas.

Despite the decrease in smoking rates, due to the long-term effects of tobacco smoking, past smoking behaviour can continue to affect health status of Australians today.

Alcohol

In Australia, alcohol consumption is widespread. It is largely considered socially and culturally acceptable, and forms the basis of many social activities and gatherings. In small quantities, alcohol poses little harm to health and wellbeing, and in some cases may be beneficial – for example, limited quantities of red wine can help retain 'good' HDL cholesterol levels in the bloodstream. However, when consumed in excessive amounts, alcohol is a major cause of ill-health and social harm.

Alcohol is estimated to be responsible for 5.1% of the total burden of disease in Australia, making it the leading risk factor after tobacco smoking.

Alcohol misuse has the potential to affect health status negatively in a number of ways, as shown in Figure 3.22.

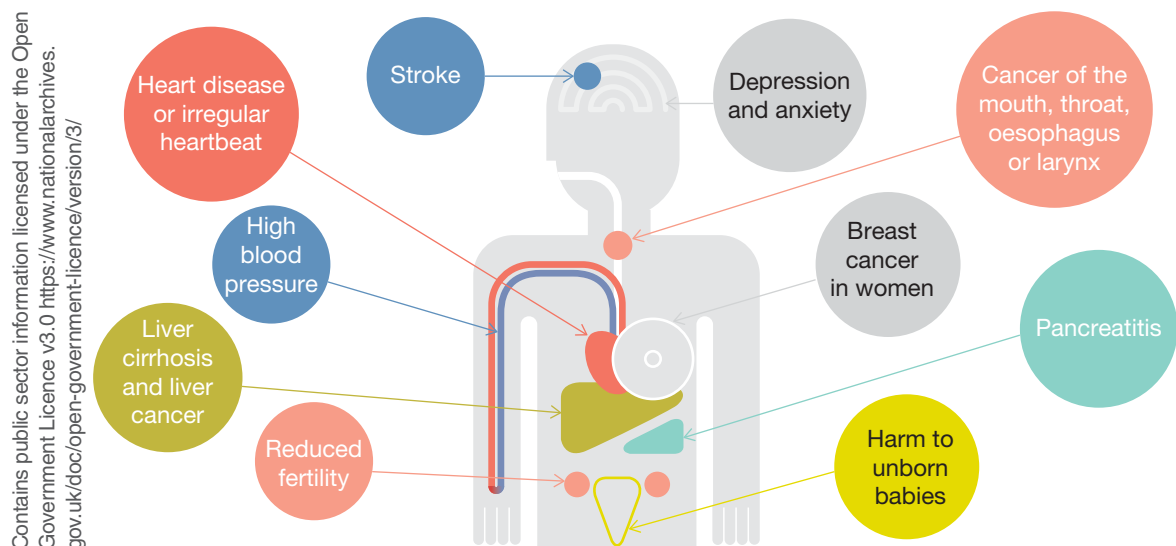


Figure 3.22 Ways in which alcohol misuse can damage health status

In addition to the direct physical health risks, alcohol misuse is also associated with relationship breakdowns; increased violence including domestic violence and assault; and injury (particularly through road traffic accidents), self-harm and suicide.

Changes that have occurred in Australians' drinking patterns over time are described in *Australia's Health 2016* (AIHW 2016). The overall volume of alcohol consumed by people fell between 2007 and 2014. Between 2010 and 2013:

- the percentage of people who drank every day fell (from 7.2% to 6.5%)
- the proportion of people who drank at levels that placed them at lifetime risk of harm fell (from 20% to 18%)
- fewer people consumed large amounts (more than 5 standard drinks) on a single occasion at least once a month (from 29% to 26%)
- more people abstained from drinking alcohol (from 20% to 22%)
- people aged 12 or older who had consumed 11 or more standard drinks on a single occasion remained similar (around 1 in 6 people)
- the proportion of pregnant women who consumed alcohol during their pregnancy remained similar (most consumed only 1–2 standard drinks on each occasion).

Dietary risks

The food we eat plays an important role in our health and wellbeing, and dietary factors are estimated to account for 31.5% of the total burden of disease in Australia. Our bodies rely upon nutrients from food to complete their essential functions. Without adequate nutrition, individuals and populations are at risk of negative health outcomes.

Diet is complex, and under-consumption or over-consumption of nutrients can influence our health. Of significant concern are the under-consumption of fruit and vegetables, low intake of fibre, calcium and iron, and high intake of fat, sugar and salt.

Under-consumption of fruit and vegetables

Under-consumption of fruit and vegetables can account for 3.4% of total DALY in Australia. Eating fruit and vegetables is important for our health in many ways.

- Fibre is an essential component of fruit and vegetables. It reduces the risk of colorectal cancer, as it helps to remove waste efficiently from the digestive tract.
- Fruit and vegetables can encourage feelings of satiety through their high water and fibre content, helping to reduce the risk of being overweight and obese by discouraging overeating. Excluding fruit and vegetables from the diet may lead to over-eating and increase the chance of weight gain.
- Folate from fruit and vegetables is important in preventing birth defects such as spina bifida and other neural tube defects, and in promoting prenatal development.
- Lack of fruit and vegetables in the diet is a risk factor for developing chronic conditions. For example, eating fewer than the recommended servings of fruit and vegetables is associated with an increased incidence of type 2 diabetes and cardiovascular disease. This may be because the nutrients in fruits and vegetables help to reduce the risk of these conditions. Potassium and fibre can help to prevent high blood pressure, and fibre can help to regulate insulin levels.

Low intake of calcium

Calcium is essential for bone development. Without adequate calcium in the diet, from dairy foods or non-dairy sources (such as green leafy vegetables, nuts and seeds), bone density can decrease, which may increase the risk of osteoporosis.

As women have lower bone density than men throughout their life span, and are more at risk of osteoporosis when oestrogen levels fall at menopause, women are particularly at risk from low levels of dietary calcium.

Low intake of iron

Iron is a component of haemoglobin, which carries oxygen in the blood. Our bodies cannot make iron, and so we must obtain it from our diet. Individuals only need small amounts of iron daily – approximately 1 mg of iron per day for men, and 1.5 mg for women. Dietary iron sources include red meat, dried beans, dark leafy greens and iron-fortified cereals.

Lack of iron in the diet can contribute to the development of anaemia, a condition in which the body's ability to transport oxygen is reduced. Symptoms of anaemia include weakness, breathlessness, exhaustion, irritability, headaches and heart palpitations. It is thought that up to 5% of the Australian population has iron-deficiency anaemia. Women of child-bearing age are more likely to suffer from anaemia, because they lose iron monthly during menstruation.

High intake of fat

It is recommended that dietary fats should be no more than 25–35% of our total calorie intake, and saturated fats should be less than 7% of our calorie intake. Levels of fat in the diet that are higher than the recommended levels are considered unhealthy.

- High intake of dietary fat is associated with obesity and being overweight. Fats have a high number of calories per gram, and excess fat is stored in the body. This places the individual at risk of cardiovascular disease.
- High fat intake can raise blood cholesterol levels, which contributes to the development of hypertension and cardiovascular disease.
- High intake of fat is associated with impaired glucose regulation, as it interferes with the ability of cells to take up glucose, and therefore increases the risk of type 2 diabetes.

High intake of salt

Small amounts of salt are important for our health. However, intake of dietary salt at levels higher than the recommended amount (4mg daily) is considered a health risk, as it can contribute to the development of hypertension. Increased levels of sodium in the body encourage the body to retain water in order to dilute the sodium, and the increased blood volume increases blood pressure. Hypertension is a risk factor for cardiovascular disease, including coronary heart disease and stroke, and kidney disease.

High levels of salt have also been associated with increased risk of osteoporosis, as excess salt can lead to higher amounts of calcium being excreted in the urine, weakening bones.

High intake of sugar

Sugar is a carbohydrate that the body converts to glucose to use as an energy source. It is recommended that sugar form no more than 10% of our daily calorie intake, as levels higher than this are associated with poorer health outcomes. For example:

- excess kilojoules from sugar can be stored in the body as fat. Therefore, a high intake of sugar can add to the risk of being overweight and obese.
- sugar is closely linked to tooth decay. A diet high in sugar provides nourishment for bacteria that live in the mouth, which produce acid as a byproduct. The acid eats away at the enamel on teeth and can lead to decay. This is especially so for sticky sugars, such as those in lollies, that cling to the teeth.

High body mass index

Body mass index (BMI) is a biological factor that can influence health status. BMI is calculated using the following formula:

$$\text{BMI} = \text{weight (kg)} / \text{height (m}^2\text{)}$$

BMI can be used to determine whether a person is within a healthy weight range. If their BMI is more than 26, they are considered overweight. A person with a BMI over 30 is considered obese.

A high BMI has been associated with a range of negative health outcomes, including:

- cardiovascular disease
- hypertension
- cancers (including colon and breast cancers)
- type 2 diabetes
- osteoarthritis
- depression, anxiety and self-esteem issues.

While the factors that contribute to high BMI are many and complex, dietary risks combined with a low level of physical activity can place individuals at risk of high BMI.

BMI has weaknesses, and it is not thought to be an accurate predictor of health risk in some populations, such as the elderly, pregnant women, people of some ethnic groups, and people with some types of disabilities.

body mass index (BMI)

a biological factor that can influence health status; it is calculated using a person's weight and height

Review and reflect

- Outline five health outcomes of tobacco smoking.
 - Describe two trends that have occurred in smoking rates in Australia.
 - What impact is each of the trends you identified in part b likely to have on health status?
- What is the recommended iron intake for males and for females?
 - Explain why iron is needed by the body.
 - What are the likely health outcomes of a low iron intake, including the symptoms individuals might experience?
- Who is most at risk of the adverse health outcomes you listed for part c?
- Why is calcium important for health?
 - What are the negative health outcomes associated with low intake of calcium?
- In a healthy diet, what proportion of calories should come from:
 - fat?
 - sugar?
- What are the health risks associated with:
 - a high-fat diet?
 - a high-sugar diet?





- 6 a** Explain how too much salt in the diet can increase blood pressure, leading to hypertension.
- b** What is the recommended daily intake of salt?
- c** Apart from hypertension, what are the negative health outcomes associated with a high-salt diet?
- 7 a** What are the negative health outcomes of high alcohol intake?
- b** Describe two trends that have occurred in alcohol intake in Australia.
- c** What are the possible health outcomes of each of the changes in intake you identified in part b?
- 8 a** How is BMI calculated?
- b** BMI is not thought to be accurate for which populations?
- c** What are the health risks associated with a high BMI?
- d** What factors may contribute to a high BMI?
- 9** Which factor contributes to the highest burden of disease in Australia?

Chapter summary



Unit 3 Area of
Study 1 revision
cards

- The health status of individuals and populations is influenced by a range of factors. These factors can be grouped into three categories: sociocultural, biological, and environmental factors.
- Sociocultural factors relate to the society (socio) and culture (cultural) of an individual or population. Examples include the media, socioeconomic status (income, education and employment), social inclusion and exclusion, and cultural background and traditions.
- Biological factors relate to a bodily state which can influence health status positively or negatively. Examples include body weight (over or underweight), blood pressure, blood lipids, glucose tolerance, and genetics.
- Environmental factors relate to the physical environment in which people live and work. Examples include air quality, housing, climate, and urban design and infrastructure.
- These factors can cause health inequities – differences in health status between groups – which are determined by factors in the broader environment and largely outside of the control of individuals.
- Populations that experience differences in health status include males versus females, high versus low socioeconomic status, those within versus those outside of major cities, and Indigenous versus non-Indigenous people.
- Males generally experience a lower health status than females. These differences can be attributed to factors such as cultural norms which limit men accessing health care, occupational hazards and higher body weight and blood lipids.
- Lower SES populations generally experience a lower health status than higher SES populations. Contributing factors can be lower income, education and employment, social exclusion, higher body weight, occupational hazards and issues with housing.
- Those living outside of major cities generally experience a lower health status than those living inside major cities. This can be because of factors including remote location limiting access to services, occupational hazards, lower SES, higher body weight and hypertension.
- Indigenous Australians generally experience a lower health status than non-Indigenous Australians. Contributing factors can include higher body weight, media, lower SES, social exclusion, and limitations in infrastructure.
- A small number of factors explains a large proportion of the burden of disease in Australia. These factors include:
 - smoking
 - alcohol
 - high BMI
 - dietary risks, including under-consumption of vegetables, fruit and dairy; high intake of fat, salt and sugar; low intake of fibre and iron.

Exam-style questions with sample answers

The questions below are taken from past exam papers.

- 1 The following data relates to the health status of Indigenous and non-Indigenous Australians. (VCAA 2016)

	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 People*, 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. (2 marks)

Sample answer:

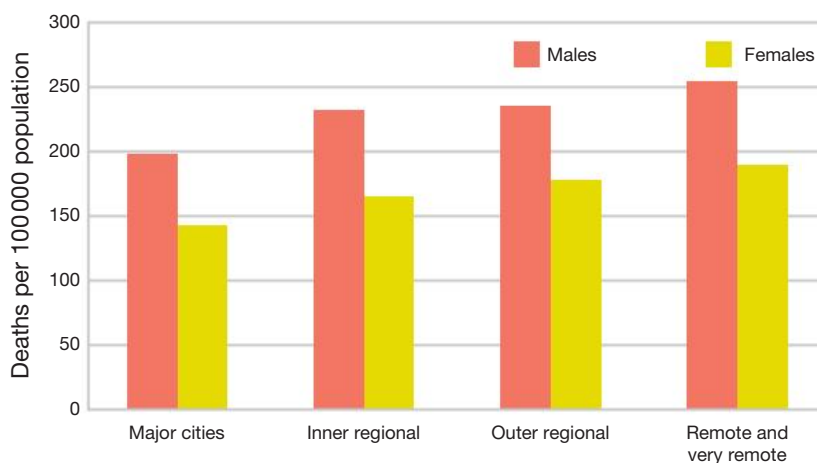
The mortality with diabetes as an underlying cause is higher for Indigenous Australians (89.4/100 000) compared to non-Indigenous Australians (15.6/100 000). This indicates that non-Indigenous Australians experience a higher health status than Indigenous Australians.

Important points:

- Because the question says 'use data', it is important that your answer include accurate data from the table.
- Because the question asks you to compare populations, it is important that your answer mentions both Indigenous and non-Indigenous populations, rather than stating only that one population has a higher or lower health status.

2

Cardiovascular disease death rates, by remoteness and sex, 2009–2011



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

- a** Identify one trend in the graph above. (1 mark)

Sample answers:

- Males experience a higher mortality rate (deaths per 100 000) across all levels of remoteness compared to females.
- As the level of remoteness increases, the deaths per 100 000 from cardiovascular disease increases.

Important points:

- A trend is a pattern or relationship in the data. Answers need to relate to trends, rather than specific data points.
- When referring to data in your answer, always try to give units; e.g. deaths per 100 000.
- This type of question does not require you to include specific data from the graph in your answer.
- This is a two-part question, and the trend identified in part a needs to be explained in part b. As there are a number of trends to choose from, try to choose one in part a that will be easy to explain when referring to factors, which influence health status in part b.

- b** Identify one biological and one sociocultural factor and explain how it could contribute to the trend identified in part a. (4 marks)

Sample answers:

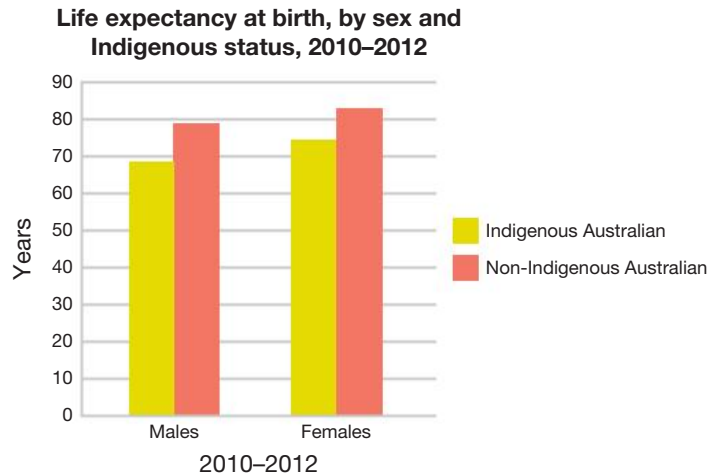
- Biological factor: body weight. Men are more likely to be overweight than women. Being overweight is associated with a higher risk of cardiovascular disease, which is a leading cause of mortality. This could explain why males experience a higher number of deaths per 100 000 than females across all areas of remoteness.

Sociocultural factor: stereotypes. Men may feel bound by a gender stereotype, which means they are less likely to access health care than females. As women are more likely to seek professional medical advice, they are more likely to receive early diagnosis and treatment, which can prevent conditions, such as cardiovascular disease, resulting in death. This may explain why females experience a lower number of deaths per 100 000 in comparison to males across all levels of remoteness.

Important points:

- Make sure to clearly state the factors that you are explaining. It is best to highlight these in some way if possible.
- Comparisons between populations aren't always necessary; however, if you are comparing populations, make sure that you refer to both in your answer.

3



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

- a Use the data in the graph above to compare the health status of non-Indigenous Australian males and females to Indigenous Australian males and females. **(2 marks)**

Sample answer:

Female non-Indigenous Australians have a higher life expectancy at birth (84 years) than female Indigenous Australians (75 years). Male non-Indigenous Australians have a higher life expectancy at birth (80 years) compared to non-Indigenous males (69 years).

Important points:

- This question refers specifically to data, so data needs to be included in the answer to receive any marks. As the data for this question is in the form of a graph rather than exact numbers, estimates are acceptable, provided that they are reasonable.
 - Ensure the correct units are included. This can be discovered by referring to the title and the axes of the graph.
 - Make sure that you are comparing all populations required by the question. This question requires you to compare populations based on both Indigenous status and gender.
- b 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. **(3 marks)**

Sample answer:

Sociocultural factor: cultural barriers to accessing health care. Indigenous Australians are less likely to access mainstream health care than non-Indigenous Australians due to cultural barriers. For example, they may not feel welcome, or the type of care is inappropriate for their cultural beliefs. If Indigenous Australians do not access health care due to cultural barriers, this will decrease the chance of conditions being treated and managed effectively, such as cardiovascular disease. This could result in an increased mortality for Indigenous Australians, and therefore a lower life expectancy at birth.

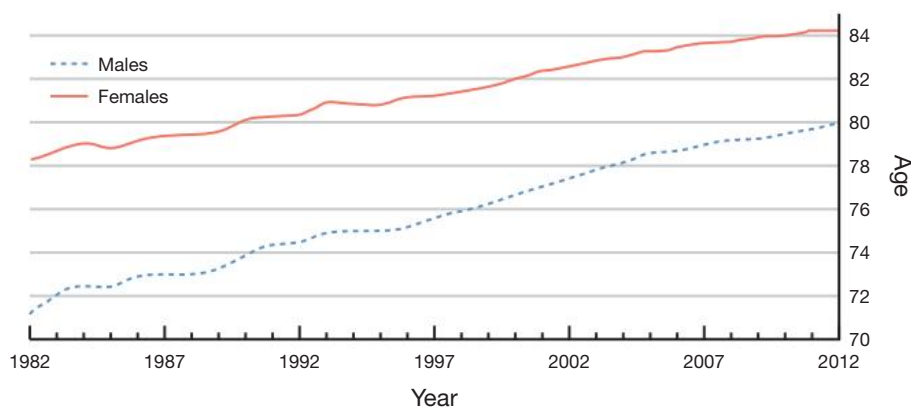
Important points:

- It is important to clearly state the factor that is being discussed; e.g. media, social inclusion/exclusion.
- Your answer needs to state how this factor differs between the population groups, and then clearly explain how this relates to differences in specific health outcomes between those groups.
- As the graph provided life expectancy as the health status indicator, it is important that your answer explain how the factor chosen can cause differences in life expectancy between the groups.

Exam-style questions for you to practise

1

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 have contributed to the variations in life expectancy between males and females.
(4 marks)
- 2 a Give one example of a sociocultural factor and one example of an environmental factor that could contribute to poorer health status for those living outside of major cities. (2 marks)
 - b Select one of the examples given in part a. and explain how it might contribute to variations in health status between those living within and outside major cities. (2 marks)
- 3 Some population groups have much higher rates of illness and death from CVD than others, particularly Indigenous Australians, those from the lowest SES groups, and those living outside of major cities.
Select **one** of these population groups. Identify two factors and explain how each of those factors could contribute to higher rates of cardiovascular disease for this population group. (4 marks)

Chapter 4: Australia's health system

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

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

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Key terms

- allied health practices
- bulk billing
- gap payments
- health promotion
- Medicare Benefit Schedule
- medicine
- primary health care

In this chapter

Improvements in Australia's health status over 100 years	page 99
'Old' public health	page 99
The biomedical approach to health care and the development of medical technologies.....	page 100
'New' public health and the social model of health	page 104

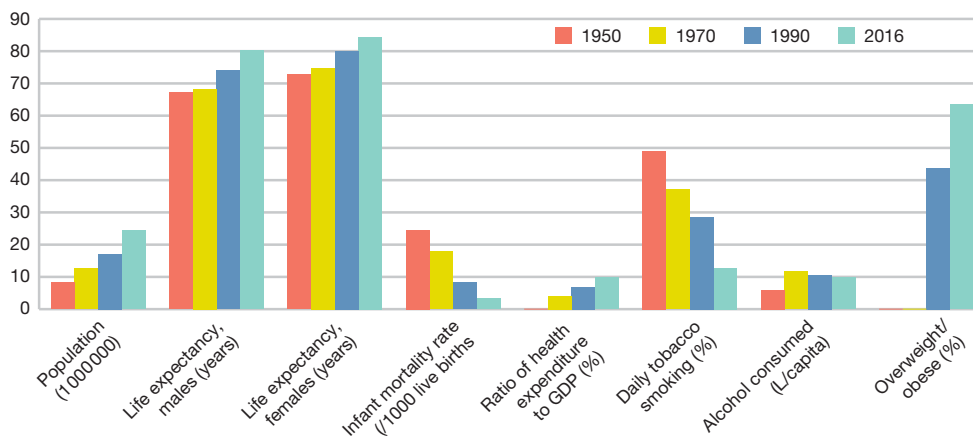
Australia's health system	page 108
Medicare	page 110
Private health insurance.....	page 112
Pharmaceutical Benefits Scheme	page 114
National Disability Insurance Scheme	page 116

Improvements in Australia's health status over 100 years

Health is an important resource, a positive concept about both the individual and improving the population's capacity for better health. This chapter explores the historical context of health care in Australia, to help you understand Australia's current position regarding the provision of health care, as well as current and future opportunities to promote and advance health for all Australians.

'Old' public health

Over the past 100 years, life expectancy has increased (Figure 4.1) and the main causes of death have changed. In the early twentieth century, infectious diseases such as polio, tuberculosis, influenza, diphtheria, smallpox and cholera were the main causes of death. Over the century, however, these deaths have declined and been replaced by deaths from non-infectious causes or lifestyle causes. Cardiovascular disease, cancer, injuries and other respiratory diseases such as asthma have become more prevalent (Figure 4.2).



Source: Australian Institute of Health and Welfare. AIHW 2017 CC BY 3.0 AU <https://creativecommons.org/licenses/by/3.0/au/>

Figure 4.1 Australia's health – then and now, health statistics from 1950–2014

Top 10 causes of death, 1907

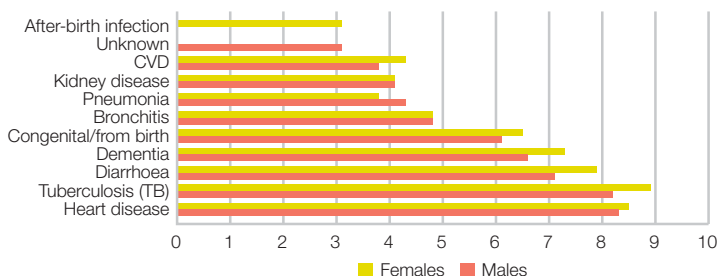
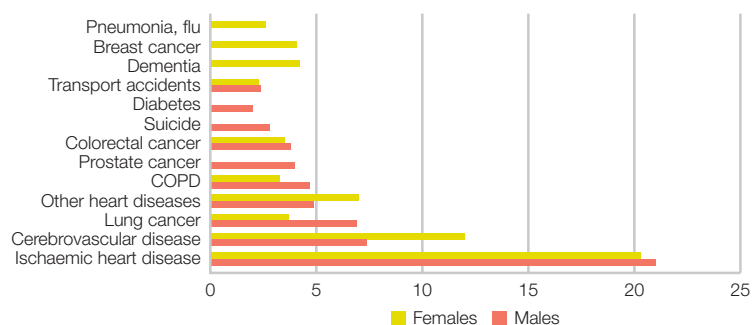


Figure 4.2 Top 10 causes of death, 1907 and 2000

Top 10 causes of death, 2000



Source: Australian Institute of Health and Welfare. AIHW 2017 CC BY 3.0 AU <https://creativecommons.org/licenses/by/3.0/au/>

When infectious diseases were prevalent, Australia's living conditions were poor, with no facilities for sewage disposal, and no controls over food handling or safe water supply. This period of health care has become known as the old public health period. Prior to the 1950s, formalised health with detailed policies and complex structures at a government level for providing population health care was in its infancy. Health boards, now known as Departments of Health, were set up in early colonisation (approximately the 1850s) to address the two greatest concerns at the time: sanitation and infectious disease. By the early part of the twentieth century, the focus was on addressing these concerns and developing physical structures such as underground sewage, safe water supplies and hospitals. During this old public health time, doctors were seen as the only professionals who could treat and diagnose health concerns, with the focus on preventing infectious and contagious diseases. Highly sophisticated technology and a range of medicines were still to be developed (see 'The biomedical approach to health', in the next section).

Governments played an important role in improving infrastructure, as understanding of the correlation between bacteria and ill health developed. The introduction of safe water supplies and sewage systems has contributed to an increase in life expectancy, and changes to the causes of disease in Australia are substantially due to work done during the old public health period. It is from this work that more complex health systems have developed (as will be discussed in the next section), as the biomedical and social models of health have evolved from the policies and processes put into place during the old public health time.

The biomedical approach to health care and the development of medical technologies

The biomedical approach to health care is a continuation of the work first completed in the old public health model, with a focus on diagnosis and cure. In the biomedical approach, the emphasis is on fixing a disease or illness once it has occurred. Doctors, hospitals, medications and technology return the individual to optimal physical health by addressing biological factors. They do not consider other determinants of health when treating the patient.

Between 1940 and 1970

Between 1940 and 1970, the biomedical approach to health care was dominant. It was heavily focused on treating the condition or physical ailment affecting the individual, not the whole individual or the possible reasons for their less than optimal health. Some other concerns of the biomedical approach to health care have included:

- affordability – the costs involved in visiting doctors, buying medications and undergoing surgery can be a huge financial burden for an individual, especially if they have a chronic condition
- cost to communities and governments – the heavy focus on doctors, technology and health care professionals costs communities and governments a great amount of money each year, to maintain and update equipment and keep facilities at the level required to deliver efficient, effective and safe services
- blame – a person's level of health is seen as their responsibility, and blame can be placed on the individual for their lack of optimal health. However, this is a limited view, as environmental and sociocultural factors can be outside a person's control and limit their ability to access health care and support.

Furthermore, not all health conditions can be cured, although they can be managed with behaviour modification, which is a consideration of the social model of health but not so much the biomedical model.

Biomedical advances in health care

While the biomedical model of health has limitations, there have been some significant gains and advantages experienced by individuals who have access to it. It is considered that the biomedical model of health has added 25 years to the life expectancy of humans in the Western world during the twentieth century. Research and development of new medicines and technologies have led to effective treatments that quickly return individuals to their pre-condition state. They have also improved quality of life, as interventions such as knee replacements have allowed people to be pain-free and to regain their mobility and independence.

The major success of the biomedical approach continues to be in advancements made in research, treatments and medicines to treat ailments and detect health issues. Some of the most significant advances are discussed below.

Vaccines

As discussed earlier in this chapter, the most common cause of death 100 years ago was a communicable disease, such as tuberculosis. The development of vaccines to prevent illnesses, such as smallpox, measles, diphtheria, whooping cough, polio and tetanus, has saved over 3 million lives worldwide each year. Vaccines have also had an impact on morbidity statistics, as the disabilities that would be an outcome of contracting diseases such as polio and measles are not present, because diseases have been prevented. There is still work to be done, however. For an immunisation program to be effective in preventing the spread of diseases, 90–95% coverage of the population is needed. This coverage has fallen in recent years and **health promotion** strategies in Australia such as Medicare (page 110) and the Pharmaceutical Benefits Scheme (page 114) are attempting to address this. Vaccines are still being developed for diseases such as meningococcal disease and influenza, while the original vaccines are still required to maintain the level of health expected and experienced in Australia.

health promotion the process of enabling people to increase control over and improve their health



Figure 4.3 The national immunisation schedule implemented by the Australian Government's Immunise Australia Program includes routine childhood vaccinations.

Medications including penicillin and other antibiotics

Penicillin has long been considered one of the most useful medications in history. Available since the 1940s, it has more effectively targeted bacterial infections and had fewer side effects than previously available medications. Other antibiotics came onto the market in the 1950s and provided a range of medications to treat infections that penicillin could not. The range of antibiotics developed to treat bacterial diseases has been a successful intervention of the biomedical approach to health care.

Surgical procedures

Robotic surgery is a highly precise and targeted procedure, and helps people recover better from invasive surgery. Keyhole surgery, for example, leaves a smaller wound and has less impact on other parts of the body near the area treated. Transplants of body parts and organs have become more sophisticated, and have improved the life expectancy and quality of health and wellbeing of transplant recipients.



Alamy Stock Photo/Jim West

Figure 4.4 Doctors using robotics to perform surgery

The use of anaesthetics in surgical procedures means doctors can treat patients in the most effective and appropriate way for the surgery being performed. A general anaesthetic brings complete unconsciousness, a local anaesthetic numbs a limited region of the body while the person remain conscious, while other types of anaesthesia cause sedation. Anaesthesia allows doctors to perform a surgical procedure on the patient's body to improve its functioning and ensure the long-term health and wellbeing of the patient.

Pathology tests

Pathology tests, such as blood tests, allow simple and quick detection of major and minor health problems, and enable people with chronic illnesses such as diabetes to manage their condition.

Screening equipment

Screening and diagnostic methods, including X-rays, ultrasounds and CT scans, enable doctors to detect internal health problems without the patient having to undergo invasive operations and treatments. This assists doctors to make an accurate diagnosis and ensures appropriate treatment.

Prostheses

Prostheses, such as hearing aids, pacemakers, and knee and hip joint sockets, allow people to be independent and to continue to participate in their life and community. A high quality of life improves wellbeing, and as individuals benefit from these technologies they are able to interact more fully in their environment.

Family planning

IVF and birth control, most notably the contraceptive pill, have improved the health of women by making it possible for them to choose how many children they bear, and to control the spacing of births.

Digital health

Telehealth consultations enable people in regional or remote areas to receive diagnosis and care. eHealth records ensure that a person's complete medical files can be accessed by the person, their doctors and other allied health professionals (Figure 4.5), and that appropriate treatment can be provided for both acute and chronic conditions. With access to the patient's medical history on file, health providers can devise efficient and effective treatment for the individual and appropriate use of health facilities.

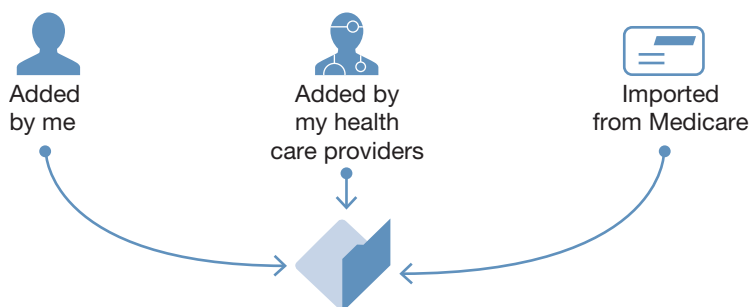


Figure 4.5 How digital technology (MyHealth Record) can be used to track the health information of individuals

The biomedical model of health has been and still is an integral part of Australia's health care system. However, as discussed earlier, there are limitations to this model and this is where the social model of health has evolved, to complement and work with the biomedical model for comprehensive delivery of health care in Australia.

Review and reflect

- 1 Outline two major features of:
 - a the old public health model
 - b the biomedical model of health.
- 2 Discuss two ways in which the biomedical model of health has improved the health status statistics displayed in Figure 4.1 (page 99).
- 3 Outline two strengths and two limitations of the biomedical model of health.

'New' public health and the social model of health

Health is a basic human right and, as knowledge and research about health have evolved, we have come to understand that health is essential for the social and economic development of a population or country. In the social model of health it is understood that some social, cultural, environmental and economic factors that affect a person's quality of life are beyond the individual's control. These factors are not addressed by the biomedical approach to health care, while the social model of health takes a broader view of health, based on the understanding that health exists at both the population and the individual level. From the 1970s onwards, the social model of health has been complementing the biomedical approach to health care, to achieve health for all.

Five principles of the social model of health are outlined below.

Addresses the broader determinants of health

A broad range of factors/determinants can affect the health conditions, diseases and disabilities experienced by an individual or population. Factors that can either increase risk or be protective in improving health include: biological (gender), environmental (physical), economic (SES, countries' welfare systems), literacy, family/community organisation, leadership, and culture or religion. Addressing issues such as women's rights, access to education and health care, access to finances, and financial commitment to health promotion programs, can all contribute significantly to the health status of individuals and populations.

Involves collaboration between sectors

A highly efficient, well-organised health system is a reflection of government, non-government organisations and the private sector working together to address the broader determinants of health and deliver a comprehensive program that supports members of the community to realise their health potential and experience a high level of wellbeing.

Acts to reduce social inequities

For all people to reach their health potential and experience optimal health and wellbeing, social equity is required. Health promotion addresses the issue of equity in accessing and use of health care, by ensuring that quality programs and schemes are available to those who need them. Inequity is addressed by reducing the impact of socioeconomic status, gender, race and physical environment on the individuals and populations who need to access health services and information.

Acts to enable access to health care

Addressing the barriers to an individual gaining access to health care and accurate health information can lead to improvements in health and wellbeing. When health care and associated health promotion programs are developed, it is important to ensure that they can be accessed by a range of population groups. Ensuring that material is simple and accessible, and visual as well as verbal and written, can help with this.

Empowers individuals and communities

Knowledge is power, and enabling an individual and the community in which they live to take control over their health-related decisions and actions can result in significant health gains. Gaining access to knowledge through education, advertising and regular community meetings, as well as being included in decision making, can help individuals and communities make the decisions that will best meet their needs and be most likely to succeed.

The social model of health considers the relationships between people and the environment in which they live. It works to understand the reasons for ill-health, or the risk behaviours that placed the individual or population at risk of ill-health, and to address these through a comprehensive, multifaceted health promotion response that functions at both an individual and environmental level. It also complements other existing programs and resources, such as biomedical services, combining resources to achieve a sustainable and long-lasting impact on health behaviours and choices.

Understanding what makes a quality health promotion program has been evolving since the introduction of the Ottawa Charter by the World Health Organization in the mid-1980s.

The Ottawa Charter

The *Ottawa Charter for Health Promotion* was adopted in Canada at the First International Conference on health promotion in 1986. The purpose of the Ottawa Charter was to guide and provide a source of knowledge for health promotion programs, to make them effective and powerful for their intended audience. The Charter was adopted with the goal of 'Health for All' by 2000. Although we are long past the year 2000 and health for all has not yet been achieved, the Ottawa Charter is still a powerful tool in guiding health promotion programs and campaigns. As a result of health promotion programs, significant gains have been made in health in Australian populations (see Chapter 5) and worldwide populations (see Chapter 12) (WHO 2017).

Health promotion requires some basic building blocks on which to develop a program, scheme or organisation. These are advocate, enable and mediate.

- **Advocate**

Health promotion advocates and promotes the benefits of health. It addresses the political, economic, social, cultural, environmental, behavioural and biological factors that can have a favourable influence on the quality of health.

- **Enable**

Individuals and populations in a supportive environment, with access to correct information and the ability to develop life skills through good health promotion programs are empowered and enabled to achieve health. These elements must be provided equally to all without bias – for example, to both male and female, Indigenous and non-Indigenous, high and low socioeconomic groups, and those living within and outside Australia's major cities.



Ottawa Charter

- **Mediate**

According to the Ottawa Charter:

... health promotion demands coordinated action by all concerned: by governments, by health and other social and economic sectors, by nongovernmental and voluntary organization, by local authorities, by industry and by the media ...

Professional and social groups and health personnel have a major responsibility to mediate between differing interests in society for the pursuit of health.

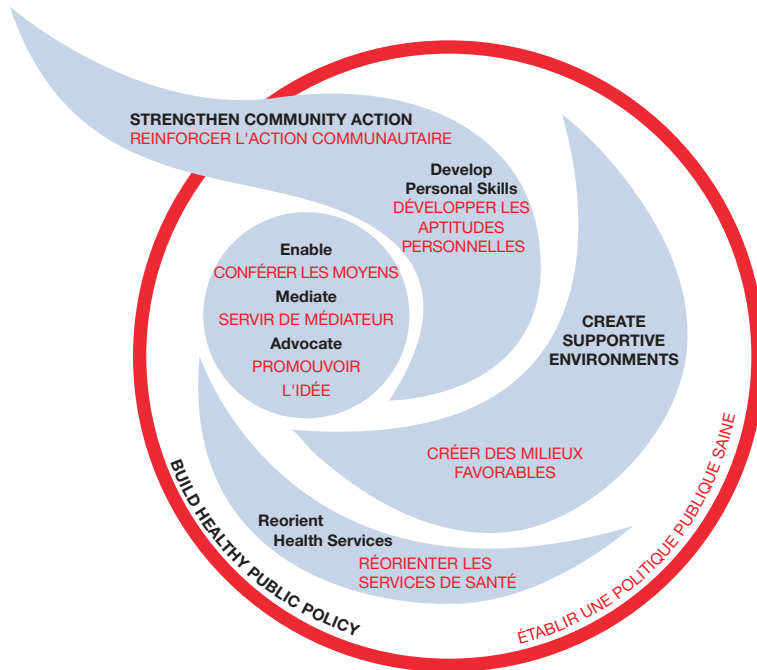


Figure 4.6 The Ottawa Charter health promotion emblem of the *Ottawa Charter for Health Promotion* (source: WHO 2017)

The Ottawa Charter specifically targets these building blocks by providing action areas that health promotion programs should address when developing a program or strategy. A successful program might not include all action areas but could complement other health promotion programs so that together they advocate, enable and mediate for better health. The health promotion logo (Figure 4.6) visually represents the five key action areas of health promotion that were introduced in 1986 at the First International Conference on Health Promotion. Since then, this logo has come to symbolise health promotion and preventive practices in population health. The five key action areas are:

- build healthy public policy
- create supportive environments
- strengthen community action
- develop personal skills, and
- reorient health services.

Four of these action areas are grouped into three wings that expand from the inner circle, which highlights the three fundamental building blocks of a health promotion program. These wings are enclosed in a larger circle that represents the fifth action area: build healthy public policy. The outer circle is broken by the 'strengthen community action' and 'develop personal skills' wing – this represents the idea that, while public policy is the glue and guiding light for health promotion

programs, it also needs to be contemporary and reviewed constantly to ensure that it meets current practice and research on the health of the population groups it is targeting.

Health promotion action areas

The following descriptions of health promotion action areas are taken from the Ottawa Charter.

Build healthy public policy

Health promotion goes beyond health care. It puts health on the agenda of policy makers in all sectors and at all levels, directing them to be aware of the health consequences of their decisions and to accept their responsibilities for health.

Health promotion policy combines diverse but complementary approaches including legislation, [financial] measures, taxation and organizational change. It is coordinated action that leads to health, income and social policies that foster greater equity. Joint action contributes to ensuring safer and healthier goods and services, healthier public services, and cleaner, more enjoyable environments.

Create supportive environments

Our societies are complex and interrelated. Health cannot be separated from other goals. The ... links between people and their environment [are] the basis for [this] approach to health. The overall guiding principle ... is the need to ... take care of each other, our communities and our natural environment. The conservation of natural resources throughout the world should be emphasized as a global responsibility.

Changing patterns of life, work and leisure have a significant impact on health. Work and leisure should be a source of health for people. The way society organizes work should help create a healthy society. Health promotion generates living and working conditions that are safe, stimulating, satisfying and enjoyable.

... The protection of the natural and built environments and the conservation of natural resources must be addressed in any health promotion strategy.

Strengthen community actions

Health promotion works [to strengthen] community action in setting priorities, making decisions, planning strategies and implementing them to achieve better health. At the heart of this process is the empowerment of communities – their ownership and control of their own endeavours and destinies.

Community development draws on existing human and material resources in the community to enhance self-help and social support, and to develop flexible systems for strengthening public participation in and direction of health matters. This requires full and continuous access to information, learning opportunities for health, as well as funding support.

Develop personal skills

Health promotion supports personal and social development through providing information, education for health, and enhancing life skills. ... [It] increases the options available to people to exercise more control over their own health and over their environments, and to make choices conducive to health.

Enabling people to learn, throughout life, to prepare themselves for all of its stages and to cope with chronic illness and injuries is essential. This has to be facilitated in school, home, work and community settings. ...

Reorient health services

The responsibility for health promotion in health services is shared among individuals, community groups, health professionals, health service institutions and governments.

They must work together towards a health care system which contributes to the pursuit of health. The role of the health sector must move increasingly in a health promotion direction, beyond its responsibility for providing clinical and curative services. Health services need to [embrace, be sensitive to and respect] cultural needs. This mandate should support the needs of individuals and communities for a healthier life, and open channels between the health sector and broader social, political, economic and physical environmental components.

Reorienting health services also requires stronger attention to health research as well as changes in professional education and training.

Extract from WHO 2017, The Ottawa Charter for Health Promotion, 'Health Promotion Action Means:'.
<http://www.who.int/healthpromotion/conferences/previous/ottawa/en/index1.html>

A strong health system relies on and reflects the strengths of both the biomedical and social models of health. Both approaches to health care bring about improvements to health. An example of this is when the biomedical approach to health provides people with vaccines, and the social model of health supports this with policies that ensure the funding, supply and provision of the vaccine, and develops personal skills so people know that accessing the treatment should increase their life expectancy. It also reorients health services by reducing the number of people who present with vaccine-preventable illness at hospitals or other health care services, which in turn reduces the pressure on Australia's health care system.

In Chapter 6, the Ottawa Charter is used to evaluate and review more health promotion programs in Australia.

Review and reflect

Describe two other examples of the biomedical and social models of health bringing about improvements in the health status of Australians.

Australia's health system

primary health care the first point of contact that a person has with health services, including for example, GP, health centre, allied health practices. It is the foundation for the rest of the health system – basic, accessible and affordable care, primarily concerned with treatment, cure and care of people with illness. In Australia it also includes services beyond those outlined in this book, including Australian Immunisation Register, Australian Organ Donor Register, Child Dental Benefit Scheme, Chronic Disease Management, National Bowel Cancer Screening Register

Australia's health care system was developed to meet the needs of the Australian population while also advancing health in a contemporary and modern way. WHO describes a health system's primary purpose as being to promote, restore and maintain health while delivering quality services when and where they are needed (AIHW 2016). The characteristics of a high-achieving, well-functioning health system include being well-funded, and employing a properly trained and appropriately paid workforce that has quality medicines and technologies in safe, clean and accessible facilities. Australia's system includes all these characteristics – all levels of government, non-government and private health services, emergency services and community primary health services working together to deliver health to Australians. It is constantly monitored and reviewed, with the aim of delivering health care more efficiently.

Australia's health system is massive. In 2014–15, 21 million people (90% of the population) accessed over 368 million individual services on the Medicare Benefits Schedule (discussed later in this chapter). Our health care can be categorised into two distinct areas: primary health care and secondary health services. **Primary health care** is the first point of contact a person may have

with health services, and includes services such as health promotion, prevention programs, treatment of acute conditions and management of chronic conditions, delivered through general practitioners, community health centres, **allied health practices** and technologies such as telehealth and video health. Secondary health services include care provided by a specialist or facility where a patient has been referred by a primary care provider (AIHW 2016).

The health system is complex and highly structured, as can be seen in Figure 4.7, which shows the main roles and responsibilities of the different levels of government in providing health care in Australia. The funding required to keep the health system functioning at the level that Australians expect is very high. In 2013–14, health expenditure in Australia was estimated at \$155 billion. This funding was allocated between hospitals, primary health care and other services. The chart in Figure 4.8 (page 110) shows where this funding goes and who is responsible for spending it. It can be seen that considerable funds are allocated to hospital services and primary health care. Medicare, the Pharmaceutical Benefits Scheme, private health insurance and the National Disability Insurance Scheme are major schemes using this funding to deliver services, and are important in addressing access, sustainability and equity.

allied health practices

include services such as psychology, pharmacy, physiotherapy, occupational therapy, radiography, optometry, chiropractic, Chinese medicine, podiatry and osteopathy, with registered professionals from the National Registration Accreditation Scheme

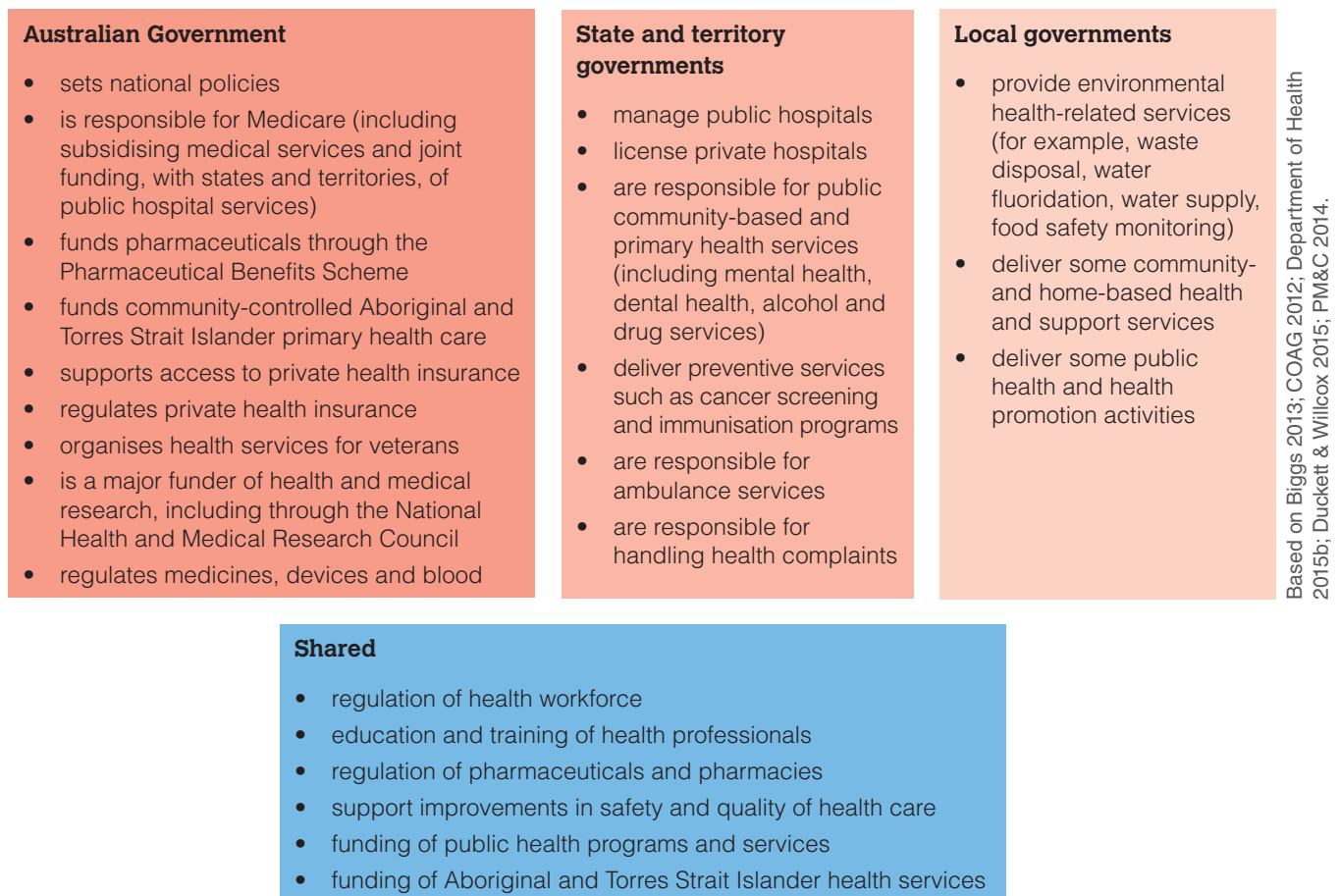


Figure 4.7 Main roles of government in Australia's health system

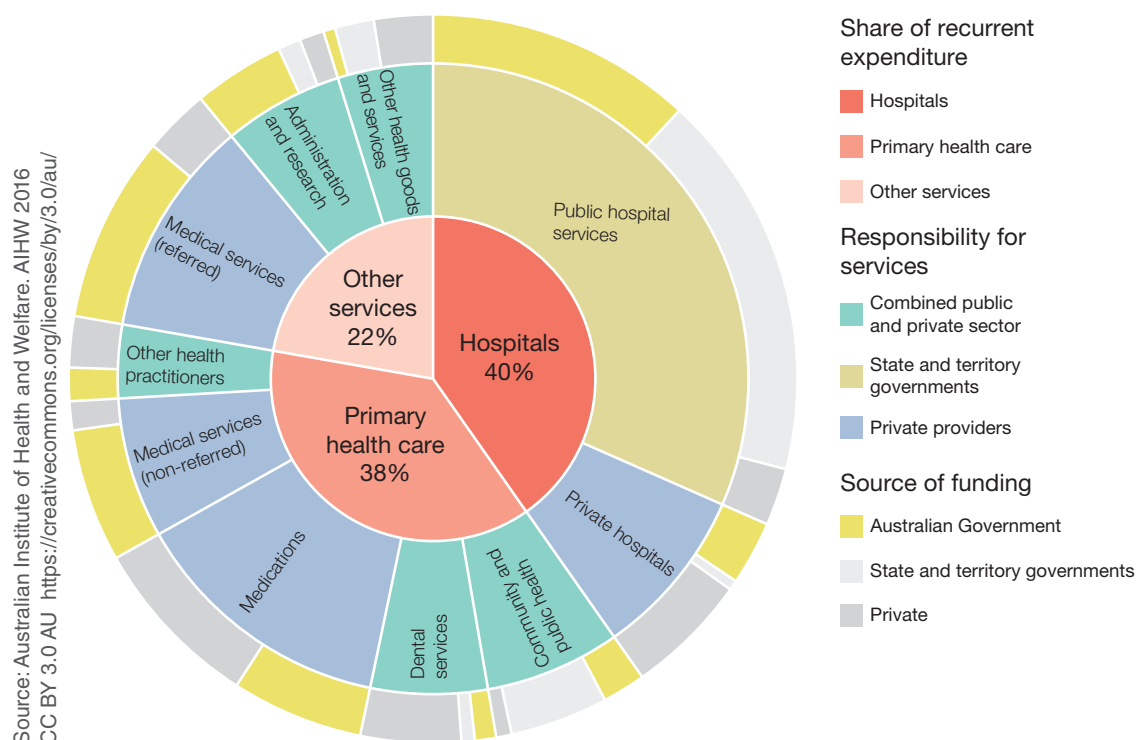
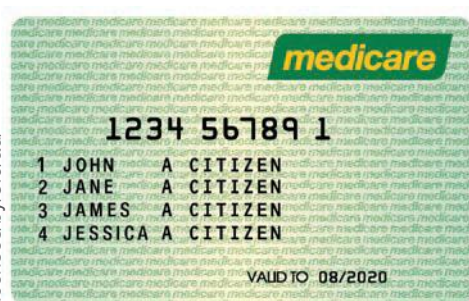


Figure 4.8 Health services – funding and responsibility, 2013–14



Medicare Benefits Schedule details all the services covered by Medicare in full

Learning tip

Medicare funding and services can change due to changes in government and government budget allowances each year. For the most up-to-date information, check with the Department of Human Services.

Medicare

Medicare is Australia's national health insurance scheme. It aims to deliver affordable, accessible and high-quality health care to all eligible Australians. Those who are eligible for Medicare include Australian residents or those holding a permanent visa, and visitors from countries with reciprocal rights. Medicare is administered by the Department of Human Services, which pays benefits on behalf of the Department of Health. In turn, the Department of Health develops policies and

decides on the treatments and services that will be included on the **Medicare Benefits Schedule**.

Medicare promotes health through funding free or subsidised medical care in hospitals, as well as medical services and general treatment.

Medicare hospital treatment

Hospital treatment covered by Medicare includes:

- being treated as a public patient in a public hospital by a doctor appointed by the hospital
- free treatment and accommodation in a public hospital, with consumables such as bandages provided at no charge.

Medicare does not cover: being treated as a private patient in a public hospital, medical and hospital costs received overseas, ambulance services, or medical services or surgery that is not clinically necessary, such as cosmetic procedures.

If you are a private patient in either a public or private hospital, the Medicare Benefits Schedule will subsidise 75% of the service and procedures provided. This does not include benefits for hospital accommodation or items such as theatre fees and medications (AIHW 2016; DHS 2017). In this instance, private health insurance would cover these up to the limits of the policy the patient has taken out, and the medication would be addressed by the Pharmaceutical Benefits Scheme. (Private health insurance and the Pharmaceutical Benefits Scheme are discussed later in this chapter.)

Medical services/general treatment

Medical services and treatments covered by Medicare include the following:

- consultation fees for doctors, including specialists (100% of a GP's fee and 85% of a specialist's fee will be reimbursed, if the doctor **bulk bills** at no cost to the patient)
- tests and examinations by doctors, including X-rays and pathology tests
- eye tests performed by optometrists
- surgical and other treatments performed by a doctor
- some surgical procedures performed by approved dentists
- specific items under the Cleft Lip and Palate Scheme, Enhanced Primary Care (EPC), and Chronic Disease Management Plan (PHIO n/da).

Medicare does not cover examinations for life insurance, superannuation and membership applications. It also does not cover most dental examinations, physiotherapy, occupational therapy, speech therapy, eye therapy, chiropractic, podiatry, psychological treatments, acupuncture, glasses or contact lenses, hearing aids or home nursing (PHIO n/db). As will be discussed later in the chapter, a person who requires these services and can afford it may opt for private health insurance.

Australians can choose to access all their health care through the Medicare program and pay out-of-pocket costs for items and services not covered by Medicare, or they can choose a combination of Medicare and private health insurance (discussed later in this chapter). Most working Australians contribute a 2% levy to the Medicare scheme; however, if an individual or family choose to use only Medicare throughout their lifetime they may be required to also pay the Medicare Levy Surcharge (MLS) of 1–1.5%. Table 4.2 (page 114) shows the income levels of Australians and what percentage of the fees they would be required to pay. This contribution is designed to support the sustainability of health care services for Australians, as it is hoped that those with higher incomes will take out private health insurance to avoid having to pay the Medicare Levy Surcharge. This in turn will direct people seeking medical services into the private system, easing pressure on the public health system. Freeing up services also supports the principle of access, as those who need access to services will be able to gain access when they require them.

Safety net

Another element of the Medicare scheme is known as the **safety net**. The safety net ensures equity of access to health care, by enabling people to continue to access health care when they need it and not avoid treatment because of mounting costs. An individual or family requiring constant doctor's visits or diagnostic monitoring may incur substantial fees in the course of a financial year. For this reason, extra funding is available to cover the costs of those who need

bulk billing system of payment for medical services, where the health professional accepts the Medicare benefit as full payment for service and does not charge any additional fees such as administration or booking fees

safety net program enabling equity of access to health care, ensuring lower or no costs for services once an initial threshold has been reached within a year

Table 4.1 Medicare safety net thresholds, 2017

Threshold	Threshold amount	Who it is for	How it is calculated	What the benefit is
Original	\$453.20	All Medicare cardholders	Based on gap amount	100% of schedule fee for out of hospital services
Extended Medicare Safety Net (EMSN) Concessional and FTB Part A	\$656.30	Concession cardholders and families eligible for FTB Part A	Out of pocket costs	80% of out of pocket costs or the EMSN benefit cap for out of hospital services
Extended general	\$2056.30	All Medicare cardholders	Out of pocket costs	80% of out of pocket costs or the EMSN benefit cap for out of hospital services

FTB: Family Tax Benefits

(source: Dept of Human Services, 'Medicare safety net. 2017 Medicare Safety Net Thresholds'; <https://www.humanservices.gov.au/customer/services/medicare/medicare-safety-net>)

gap payments the gap amount is the difference between the schedule fee and the Medicare benefit paid

it most. The safety net places a cap, or threshold, on payments by individuals or families within a financial year. Once the threshold has been met – that is, once a person or family has paid a certain amount of money for out-of-hospital medical fees and services because of **gap payments** – the safety net covers costs beyond the threshold for those services. The thresholds are listed in Table 4.1.

The Medicare card can also be used to obtain discounted prescriptions through the Pharmaceutical Benefits Scheme.

Private health insurance

Private health insurance can be purchased by an individual, a couple or a family to allow them more options and access to health care services. Private health insurance is provided through registered organisations that meet the requirements of the *Private Health Insurance Act 2007*.

Types of cover

Private health insurance is offered in three types of cover: hospital, general treatment and combined.

Hospital cover

Hospital cover includes the cost of in-hospital treatment by a doctor, and hospital costs including accommodation and theatre fees. With hospital cover, an individual, couple or family can choose to be treated as a private patient in a public or private hospital. They can also choose to be seen by their own doctor when they are admitted to hospital (AIHW 2016). When selecting hospital cover it is important to research **waiting periods**, which limit how often certain procedures can be accessed per year, and extra costs such as excess fees and the benefit provided on certain services.

waiting period a time that must be served when beginning or upgrading private health insurance cover. It may mean that the cover will not be provided for certain treatments or that lower benefits will be paid until the waiting period is over

Hospital cover is provided in four general categories: top private hospital cover, medium private hospital cover, basic private hospital cover, and public hospital cover.

Top cover provides all services that are covered by the Medicare Benefits Schedule. The exclusions broaden, and depth of coverage reduces, with each lesser category until the 'public hospital' offering, where minimum medical services and accommodation are covered in a public hospital, with the public waiting list still applicable.

General treatment cover

General treatment is also referred to as ancillary or extras. It provides benefits for services including most dental, physiotherapy, occupational therapy, speech therapy, podiatry, glasses, home nursing and prostheses (including hearing aids, hip joints and so on).

General treatment cover is provided in three categories: comprehensive, medium and basic. Comprehensive usually offers a greater range of services with better benefits, and this decreases for the other two categories, with least coverage in basic.

Combined cover

Combined cover means an individual, couple or family can take out both hospital and general cover. The category of cover, and supplier of the cover, can be different for hospital and general cover.

Other cover

Pharmaceuticals and ambulance cover can be included in policies, but the Australian Government regulations on private health insurance do not require it. If a policy offers benefits for pharmaceuticals, it will be for medicines not included in the PBS (see later in this chapter) and there will generally be a limit on the amount the policy will pay out, usually leading to some payment by the policy holder. Ambulance cover varies between the states. It is therefore important to check the policy and confirm how much of the ambulance service is covered by the policy, if at all.

More recently, private health cover has developed to cover a greater range of services that are clinically appropriate alternatives to hospital care – known as 'broader health care'. Cover includes home and community health care, such as early discharge from hospitals with follow-up care in homes, treatment for wound care at home and chronic disease management programs such as weight loss management, diabetes education/ management and QUIT smoking programs.

The government provides incentives and support to encourage people to take out private health insurance and maintain it. The private health insurance rebate is means tested and supports holders of private health insurance policies to pay for their premiums. 'Lifetime health cover' encourages people to purchase their health insurance before they are 30 years old. If purchased after this age, a financial loading of 2% is applied to the hospital premium for every year after 30 years of age at the time of purchase of the policy. The loading is removed after 10 years of continuous coverage.

Table 4.2 Government rebate for private health insurance and charges for the Medicare Levy Surcharge, 1 April 2017–31 March 2018

Singles	≤\$90 000	\$90 001– 105 000	\$105 001– 140 000	≥\$140 001
Families	≤\$180 000	\$180 001– 210 000	\$210 001– 280 000	≥\$280 001
Rebate				
Age	Base tier (%)	Tier 1 (%)	Tier 2 (%)	Tier 3 (%)
<65	25.934	17.289	8.644	0
65–69	30.256	21.692	12.966	0
70+	34.579	25.934	17.289	0
Medicare Levy Surcharge (%)				
All	0.0	1.0	1.25	1.5

www.privatehealth.gov.au

With hospital cover, Medicare will pay 75% of the hospital fee as part of the Medicare Benefits Schedule. The remaining amount can be covered in full or part by the health insurance company. Even with private health insurance, depending on the level of cover purchased and the insurer it is purchased from, the individual might still have to pay some out-of-pocket costs – this is referred to as the ‘gap’. The gap is the amount of money the policy holder may have to pay for medical or hospital charges above the benefits and rebates they receive from Medicare and their private health policy. Some health funds have gap cover arrangements to insure against the whole cost. It is important for individuals considering purchasing private health care to check the policy thoroughly, to ensure it delivers on the individual's expectations and health care needs.

Pharmaceutical Benefits Scheme

The Pharmaceutical Benefits Scheme (PBS) aims to provide access to necessary **medicines** in a timely, affordable and reliable manner. The Australian Government funds the scheme, with the Department of Health managing and the Department of Human Services administering it. The government funds the PBS, as it is seen as a way of maintaining the health of the community and of helping to reduce the cost of the wider health system. When medicines or therapies prevent illness, or return an individual to good health, or allow them to manage an illness without needing hospital support or visits, this helps reduce demand for hospital services and the associated costs to the government in providing them, and therefore is a cost-effective measure.

Australian residents who hold a current Medicare card can receive medicines through the PBS. The government subsidises the medicine prescribed to an individual, who pays the remainder of the fee through a co-payment. As of 1 July 2017, an individual can be required to pay up to \$38.80 as a general patient and \$6.30 as a concession card holder (including pensioner and Australian senior concession card holders, Health Care card and Department of Veterans Affairs)

medicine a substance or therapy that improves the overall functioning and wellbeing of the body or prevents a disease. It includes prescription and non-prescription medicines, including complementary health care products

for their prescribed medicines, with the Australian Government subsidising the rest of the cost. The government also provides a safety net (see page 111). For general patients who have spent \$1494.90 in a calendar year, the costs decrease to \$6.30 per prescription for the remainder of the year. For concession holders, the safety net threshold is \$378, after which prescription items are free. In addition to this, in 2016 the Australian Government allowed a pharmacist to discount a PBS item a further \$1 for prescription items picked up 3 weeks after ordering.

The PBS can also be accessed by people in Australia who are not residents. Australia has a Reciprocal Health Care Agreement (RHCA) with the United Kingdom, New Zealand, Ireland, Malta, Italy, Sweden, Netherlands, Finland, Norway, Belgium and Slovenia, whose citizens can access PBS-listed medicine at the subsidised prices while in Australia.

Further elements of the PBS include dental and optometric schedules, which specialists can prescribe from. They don't include items from the general PBS but are specific to their field and treatment required for the patient.

There is also the Repatriation PBS for veterans of the Australian Defence Forces, including war widows and their dependants. The Department of Veterans' Affairs further subsidises costs in addition to the Australian Government subsidy. This schedule also has additional medicines and treatments listed, such as dressings and pharmaceuticals, that are specific to veterans' needs.

Therapeutic Goods Administration

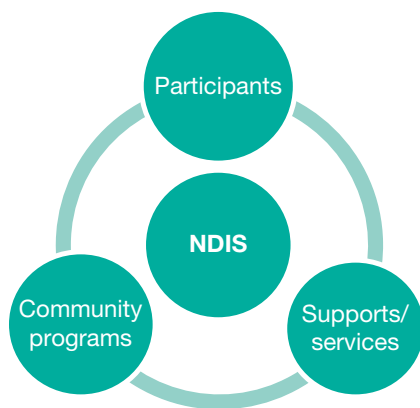
The Therapeutic Goods Administration (TGA) is responsible for approving or removing pharmaceuticals from the schedule. In 2015 the government spent approximately \$9 million on the PBS. The TGA ensure that medicines on the schedule meet certain guidelines, in order to protect and promote Australia's health, and to keep the system cost effective and sustainable. In general, the medicines on the PBS are prescribed by a doctor/specialist, dispensed by a pharmacy and used at home. However, for certain treatments this may not be possible, due to the means of administration or storage required for the medicine – this includes certain IVF medicines and procedures, and chemotherapy, where a doctor or nurse is required to administer the medicine. The funding of such medicines remains but the patient may also need to use their Medicare card and to be at a hospital or doctor's surgery to receive the medicine. If a patient requires a medicine not listed on the PBS, they will have to pay for it in full as a private prescription. In some instances, if the person has private health insurance they may be reimbursed to some extent.

Review and reflect

- 1 Explain what Medicare is and how it works.
- 2 Explain how the Pharmaceutical Benefits Scheme promotes Australia's health.
- 3 Outline the differences in funding between Medicare and private health insurance.
- 4 Do Medicare, the Pharmaceutical Benefits Scheme and private health insurance promote access to health? Discuss, using three pieces of information to justify your response.

National Disability Insurance Scheme

The National Disability Insurance Scheme (NDIS) is an insurance scheme for Australian citizens under the age of 65 years who have a permanent and significant disability. It aims to ensure equity for Australians who have a disability. 'Equality' assumes that everyone will benefit equally from the same supports (see illustration on page 27), but the NDIS recognises that this is not always the case and that people with a disability need equity in resources and support throughout their lifespan, to ensure their health and wellbeing. A just and fair system removes systematic barriers, and the NDIS aims to do this by taking people with a disability out of a potential welfare cycle that does not meet their needs or aspirations. It attempts to provide individuals, families and carers of people with a disability to realise their potential, contribute to the community and live meaningful and positive lives.



The NDIS takes a lifetime approach to supporting people with a disability, providing a mixture of funding and links to community and health services.

Individuals who meet the NDIS criteria meet with a 'planner' to determine the support and care the participant needs and to develop a plan that best meets their needs and goals. The meeting might result in, for example:

- no changes to the individual's daily routine because their needs are already being met, but providing funding for the transport costs of having independence
 - changes to the person's daily routine as they are provided with community links that will provide socialisation opportunities within the person's community that they didn't know about
 - employment opportunities being explored to help provide financial independence.
- Other options a planner may explore and offer a person with a disability include:
- arranging care options that may have not been used before
 - providing assistance with employment
 - funding for therapies
 - funding home modifications, vehicle modifications and/or mobility equipment
 - access to transport
 - introductions to community activities.

The NDIS also helps the person's family and carers get the assistance they need. In some instances, family have provided the ongoing support in the form of transport and care, sometimes requiring them to work part-time or not at all, in order to fulfil these needs. The NDIS providing these services can allow family and carers to be present but also have the option of fulfilling their own goals and needs with work commitments and other social interactions. In other instances, one intervention, such as providing a prosthetic limb, might allow an individual to return to full-time work and gain mobility and independence, and not need the NDIS again.

The NDIS acknowledges that, for some Australians, early intervention can lead to successful lifelong outcomes, while other people require constant, specific support. The National Disability Insurance Agency (NDIA) is an independent Commonwealth agency that implements the NDIS. Trials of the program were held from 2013 to 2015, and the scheme is being implemented progressively around the country. It is hoped that this approach meets the needs of individuals and is successful and sustainable in the long term, with improved health outcomes.



Weblink

INVESTIGATE

To find out where and when the NDIS is being implemented in your local area, visit the NDIS website. Go to <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

Case study

National Disability Insurance Scheme

Read the following case study and answer the questions that follow.

Thanks to the National Disability Insurance Scheme's (NDIS) focus on early intervention, five-year-old West Australian Jack Bloch is 'skyrocketing ahead' with his speech, writing, recognition and motor skills, so much so he is now age appropriate and able to exit the scheme.

Jack joined the NDIS two years ago at age three, and proud parents Bree and David said catching his developmental delays early has made a massive difference to how their son now functions – like every other child his age!

'As first-time parents we didn't know which way to go,' Bree said. 'We didn't know what Jack needed or what he didn't need, so having the NDIS there to help us develop an action plan, then review it, to see if he had developed or if he needed extra help, was great.'

The couple said the range of NDIS registered therapists they could engage was huge.

'In the old system, contacts were limited and it's hard to get in but being a part of the NDIS, we actually got access to a lot of services, and we got to choose which one we wanted – Therapy Focus – and they were just fantastic.'

'Now Jack is five. He's in pre-primary and doing really well, and thanks to regular speech and occupational therapies, he has skyrocketed ahead with his speech and writing and recognition skills, and he's up to speed with his gross motor skills.'

'Jack's teachers are really happy with him too,' Bree said. 'And being able to show them his NDIS plan on paper made a world of difference.'

'Last year we showed his kindy teacher what we needed to do to get him up to speed. She was so supportive.'

She put activities in place and even got involved with his therapists!'

Bree said this year, Jack's pre-primary teachers are just as enthusiastic.

'They saw his plan and they've put activities in place to make sure he maintains where he needs to be. His teachers also said what they've been able to implement in the classroom for Jack not only helps other children, it also helps better educate them.'

'We're actually really thankful for the support we've been able to receive and now Jack's functioning at an age appropriate level, he can be signed out from the NDIS!'

'We thought we would have a much longer road ahead of us but it just goes to show early interventions do make an incredible difference in a child's life,' Bree said.

'It is an absolutely incredible result for Jack, and for us as a family, but on the other hand it's a bit sad in a way. We've been working with the NDIS and Therapy Focus for the past two years. They've been a big part of our lives, they've become like family and we will miss that contact.'

'Even though Jack has exited the NDIS, I've been reassured if we ever need help again, the Scheme is always there, and that is very reassuring,' Bree said.

Reproduced with permission NDIS, www.ndis.gov.au

Case study questions

- 1 Describe how the NDIS works.
- 2 Outline the benefits of the NDIS for Jack.
- 3 Evaluate the benefits of the NDIS in promoting health for Jack and his family.

Chapter summary

Old public health

- The main concerns were infectious disease and poor sanitation.

Biomedical approach to health care

- Characterised by treatment, medication and technologies. It focuses on curing illnesses and physical ailments ('fix-it' approach).
- Successes include vaccines, antibiotics, robotic surgery, screening equipment (X-rays), prostheses, family planning and digital health.

Social model of health

- Addresses broad determinants of health; involves inter-sectorial collaboration; acts to reduce social inequities and enable access to health care; and empowers individuals and communities.
- The Ottawa Charter is a health-promotion model based on the building blocks of advocate, enable and mediate. The five action areas for the Ottawa Charter are: build healthy public policy; create supportive environments; strengthen community action; develop personal skills; and reorient health services.

Australia's health system

- Responsibilities in Australian health care delivery are split between federal, state, territory and local governments, with input from the private sector.

Medicare

- Medicare is Australia's universal health insurance scheme, providing affordable treatment and access to hospitals.
- Medicare covers 100% of bulk-billed GP fees and 85% of specialist fees for consultations out of hospital, and some other out-of-hospital services.
- Medicare Levy Surcharge applies to people who earn more than a certain amount of money but don't take out private health insurance.
- The Medicare Safety Net applies to those who pay gap payments throughout the year and reach a certain threshold amount of money spent.

Private health insurance

- Private health insurance is health cover purchased by an individual, couple or family to access to health care services with greater variety than Medicare offers.
- A means-tested private health insurance rebate is provided.

Pharmaceutical Benefits Scheme (PBS)

- The PBS helps people access affordable, timely, reliable medicine. It is funded by the Australian Government, and accessible to anyone with a Medicare card.
- Medicines on the PBS are subsidised, with a patient co-payment. The PBS safety net reduces or eliminates medicine costs after spending reaches the threshold within a year.

National Disability Insurance Scheme (NDIS)

- The NDIS is a federal government initiative. It aims to ensure equity in accessing services that can improve and enhance people's quality of life.

Exam-style questions with sample answers

The *key skill* required for all the information in this chapter is the ability to analyse. The *knowledge* required to answer questions is related to Medicare, private health insurance, the Pharmaceutical Benefits Scheme, the National Disability Insurance Scheme, improvements in health over time, and the biomedical and social models of health.

The questions below are taken from past exam papers.

- 1** List one service that is covered by Medicare, and explain how this service can improve the health status of Australians. **(2 marks)** (VCAA 2016)

Sample answer: GP visits – some or all of the cost involved in GP visits is covered by Medicare, which can encourage people to take action quickly when they become unwell, and this may reduce morbidity and mortality rates if treatment can be prescribed early.

Important points:

- A Medicare service is needed for one mark, and the second mark requires an explanation of how the service could improve the health status of Australians.
- Other relevant examples: specialist consultations, pathology tests, X-rays, surgery and in-hospital treatment.

- 2** The Australian health care system consists of private health insurance, Medicare and the Pharmaceutical Benefits Scheme (PBS).

- a** What is private health insurance? **(2 marks)** (VCAA 2015)

Sample answer: Private health insurance is optional cover that some families and individuals choose to purchase, to cover health services ('extras') that are not covered by Medicare (e.g. dental, physio).

Important point:

- Providing an overview of private health insurance earns one mark, and giving an example of services covered earns the second mark.

- b** Provide one similarity and one difference between Medicare and the PBS. **(2 marks)**

Sample answer:

- Similarity: Both are run by the federal government and the federal government subsidises the cost of each.
- Difference: Medicare is Australia's universal health scheme. It allows all Australians to access a wide range of health services, such as GP consultations and X-rays, as a public patient in a public hospital. The PBS is more specific – it gives Australians access to essential medicines only.

Important point:

- Understand how Medicare, the Pharmaceutical Benefits Scheme, the National Disability Scheme and Private Health Insurance promote health (similarity) but deliver on this task in different ways (difference).

Questions for you to practise

- 1 Outline two key features of the biomedical approach to health and the social model of health. **(4 marks)**
- 2 Describe how the biomedical and social models of health have improved health status over time in Australia. **(4 marks)**
- 3 Explain the role of the National Disability Insurance Scheme in promoting health in Australia. **(3 marks)**
- 4 Justify how Medicare, the Pharmaceutical Benefits Scheme and the National Disability Insurance Scheme provide equity of health care for all Australians. **(6 marks)**
- 5 Describe two technological advancements of the biomedical of health. For each advancement, explain how it has improved health status in Australia. **(4 marks)**



Chapter 5: Health promotion

Key knowledge

- the role of health promotion in improving population health, focusing on one of: smoking, road safety, or skin cancer, 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

Key skills

- 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

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Key terms

- carcinoma
- diabetes
- food security
- health treaty
- immune system
- lymph
- melanoma
- renal disease
- stroke
- tobacco

In this chapter

Improving population health through health promotion campaigns.....	page 122
Smoking	page 122
Road safety	page 127
Skin cancer	page 132

Improving Indigenous health through health promotion campaigns.....	page 139
Closing the Gap	page 139
Victorian Aboriginal Community Controlled Health Organisation Inc.....	page 144
Fitzroy Stars	page 145

Improving population health through health promotion campaigns

Smoking

**5 million deaths
annual, worldwide**

**15 000 deaths
annual, Australia**

**3793 deaths
2008–2009, Victoria**

(sources: Scollo & Winstanley 2015; Winstanley et al. 2015)

tobacco a substance sourced from tobacco leaves; the main chemical in tobacco is nicotine, an addictive substance that is categorised as a stimulant drug

Tobacco smoking is a significant cause of many health and wellbeing problems in Australia and the world. It contributes to the leading causes of preventable death, chronic disease and disability (AIHW 2016a; Quit Victoria n/d). Not only is smoking itself a problem but it is estimated by the World Health Organization that 600 000 people die from second-hand tobacco smoke each year (WHO 2009). While rates of smoking have been on the decline in Australia for the past decade, it is still a major problem for the health and wellbeing of individuals. For this reason, much time and effort has been invested in health promotion campaigns that aim to reduce the number of people smoking.

Tobacco smoking affects the functioning and efficiency of the body, because of the chemicals in cigarettes (Figure 5.1). Tar, nicotine and carbon monoxide are the main chemicals that act as toxins and reach the bloodstream via the lungs. The chemicals consumed either by smoking or as second-hand smoke cause damage to the body internally and externally.

SMOKING = DEATH + DISEASE + DISABILITY

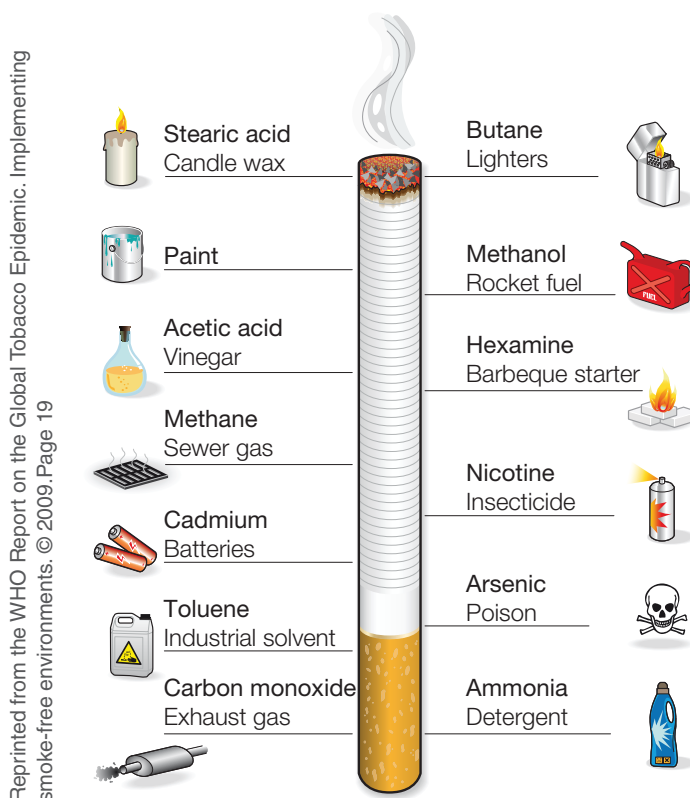


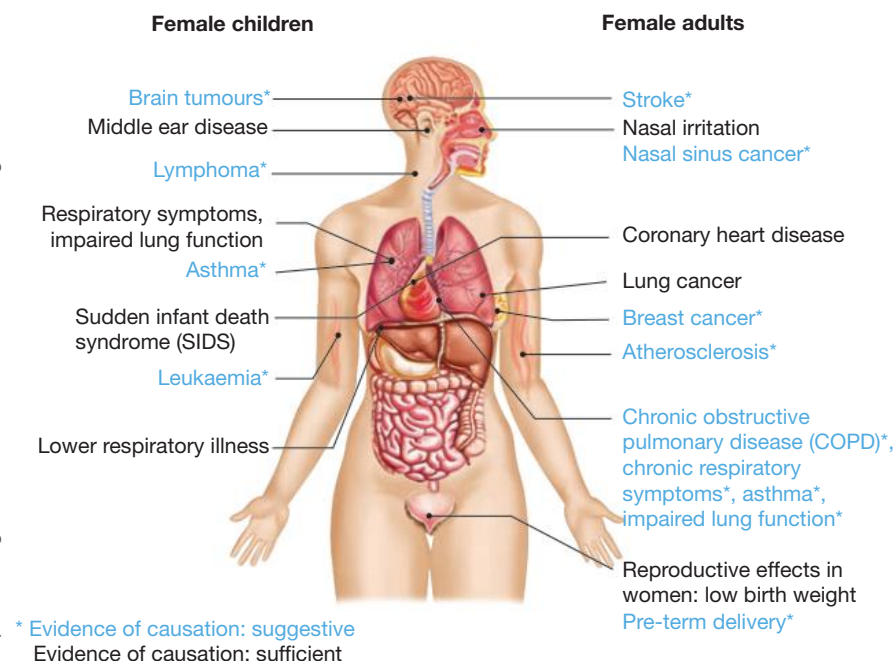
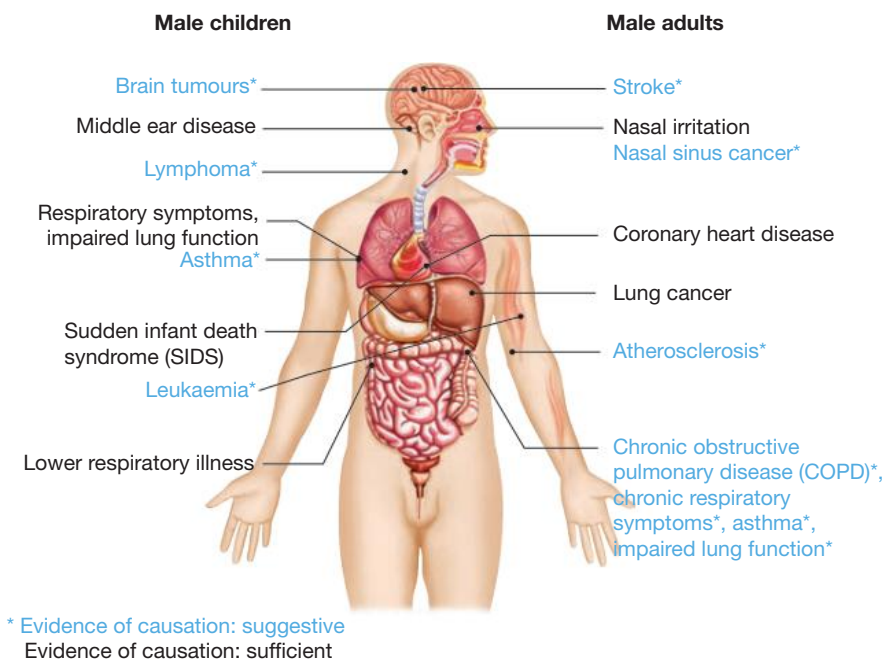
Figure 5.1 More than 4000 chemicals are found in tobacco smoke

According to *Australia's Health 2016*, tobacco smoke is responsible for 9% of the total burden of disease and injury in Australia (AIHW 2016b). Of all the modifiable risk factors an individual can expose themselves to, smoking tobacco is considered the most damaging. Figure 5.2 shows the illness and disease that tobacco smoke can cause to the body. In Australia, the highest burden of disease attributable to smoking is due to respiratory illnesses (36%), followed by all cancers (22%) (AIHW 2016c). However, the range of diseases linked to tobacco smoking is wide and varied, and includes **stroke**, **renal disease**, eye disease and **diabetes**.

stroke when a blood clot or plaque blocks a blood vessel in the brain, or a blood vessel in the brain ruptures

renal disease disease of the kidneys

diabetes a condition characterised by the body's inability to maintain healthy levels of glucose in the blood; there are three types: type 1, type 2 and gestational diabetes



Reprinted from the WHO Report on the Global Tobacco Epidemic. Implementing smoke-free environments. © 2009. Page 23



Weblink

INVESTIGATE

For further investigation of tobacco smoking and the diseases it causes, check out the Quit interactive page. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink directly.

Figure 5.2 Diseases caused by tobacco smoke, through smoking or inhaling second-hand smoke

immune system fights infections in the human body using white blood cells made in the bone marrow, and proteins called antibodies

health treaty a document that outlines a formal international agreement between nations to address a specific health issue and is ratified by a law organisation

epidemic a sudden, severe outbreak of a disease; the occurrence of more cases of a disease than expected



Alamy Stock Photo/Nerthuz

Figure 5.3 A healthy lung (left) and a lung that has been exposed to tobacco smoke (right)

Smoking tobacco also weakens the **immune system**, causes wrinkled skin, tooth decay and loss, and lowers fitness, which can put you at risk of other diseases not directly linked to tobacco smoke but resulting from the impact of smoking on the body.

Who smokes?

It is estimated that worldwide, 1.1 billion people smoked tobacco in 2015 (WHO 2016). In Australia 2.6 million people smoke each day, and in certain population groups in Australia there are exceptionally high rates of smoking compared to the rest of the Australian population. These populations are therefore at greater risk of disease and/or death from this behaviour. The population groups most likely to be daily smokers

are men (16.9%), Aboriginal and Torres Straight Islanders (38.9%) and those who are socio-economically disadvantaged (21.4%) (ABS 2015).

Health promotion and tobacco control

The impact of smoking on the body has been known and widely researched since the landmark US Surgeon General's report in 1967 (DHEW 1967). The effects of tobacco smoking are so serious that in 2003 WHO committed to a world first global **health treaty**, which countries such as Australia signed to be part of the solution to the global tobacco epidemic. The WHO Framework Convention on Tobacco Control (WHO FCTC) is the most powerful health promotion tool to address tobacco smoking and its subsequent health problems (WHO 2003). The framework was developed in response to the growing body of evidence, gathered through research and data collection, of the impact of this modifiable risk behaviour on the health of people worldwide.

The WHO FCTC provides a roadmap for a consistent approach to tobacco control. It supports countries that have signed the treaty, such as Australia, in developing localised policies and laws, and in developing education appropriate to each country to address the **epidemic** of tobacco smoking. Forty countries initially signed the treaty, but by 2009 this had grown to 168 countries. The treaty is seen as a collective collaboration aimed at addressing 'the devastating worldwide health, social, economic and environmental consequences of tobacco consumption' (WHO 2017).

One way WHO does this is through 'MPOWER' (Figure 5.4). This acronym stands for the measures that countries who sign the treaty are expected to work on, to improve tobacco control. In Australia, the elements of MPOWER are evident in the health policies and programs set up by the government and the Quit program.

MPOWER

Monitor	Monitor tobacco use and prevention policies
Protect	Protect people from tobacco smoke
Offer	Offer help to quit tobacco use
Warn	Warn about the dangers of tobacco
Enforce	Enforce bans on tobacco advertising, promotion and sponsorship
Raise	Raise taxes on tobacco

Figure 5.4 MPOWER is a group of control measures introduced by WHO to help improve tobacco control.

Health promotion and tobacco control in Australia

Australia's response to tobacco control has been shaped by the rigorous research and work of WHO. Australia has a National Tobacco Strategy, which works in conjunction with government and non-government organisations such as the Quit program (Figure 5.5).

Quit

The Quit Victoria program was developed in 1985 and was implemented by the Minister for Health and Cancer Council Victoria. Major stakeholders in the program include Cancer Council Victoria, the National Heart Foundation of Australia (Victorian Division), VicHealth and the Department of Health and Human Services (Figure 5.5). These organisations are responsible for the funding of Quit and provide guidance as the steering committee.



Figure 5.5 Key stakeholders of the Quit program



Figure 5.6 Plain packaging and warnings on cigarette packets emphasise the health risks of smoking.

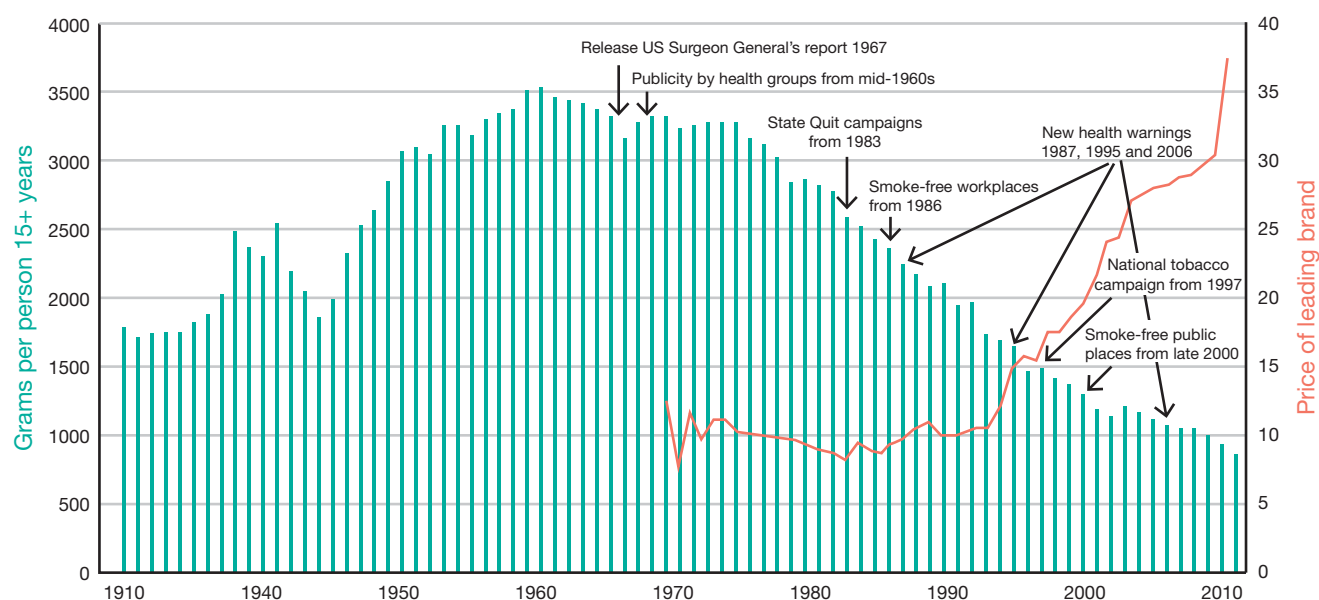
The successes of the Quit program include:

- the phasing out of tobacco advertising in print, on television and radio, and online (where practical)
- changes to the laws regarding lobbying of government, and the development of position statements on plain packaging of cigarettes – this resulted in plain packaging becoming law in 2012, and the size of warnings on cigarette packaging being increased to 75% of the packaging (from 30%) (Figure 5.6)
- development of legislation to protect people from second-hand smoke, including smoke-free workplaces, schools, pubs, shopping centres and sporting clubs, most recently the banning of smoking between the red and yellow flags at patrolled beaches
- exposure of harmful tobacco industry practices
- Quitline, a support and advice service to help people give up tobacco
- the Quit website, which provides the up-to-date information about the organisation, can be accessed by people speaking a language other than English, and provides a resource centre with further programs and research information.

The Quit program's success was made possible by funding from VicHealth as a result of the Victorian *Tobacco Act 1987*. The Act introduced a levy on the wholesale sale of tobacco products, and this money has supported Quit in researching, developing and implementing programs to help Victorians give up tobacco for good.

Table 5.1 Evaluation of the Quit program using the Ottawa Charter

Action area of Ottawa Charter	Evaluation
Build healthy public policy	Quit (including key stakeholders) has lobbied government and provided position statements on laws banning smoking in public places. Taxes have been imposed on tobacco products, and tobacco advertising has been banned from print, TV, radio and online resources (where practical). These laws and policies have reduced access and exposure to tobacco smoke and have led to reduced consumption of tobacco (Figure 5.7).
Create supportive environments	The Quitline provides support to people who are giving up smoking. They are helped to achieve this aim with measures such as plain packaging of cigarettes and smoke-free environments that prevent exposure of non-smokers to second-hand cigarette smoke.
Strengthen community action	A tax on tobacco has provided VicHealth with funds to support Quit in providing education to the community and keep programs such as the Quitline operational. A collaborative approach between key organisations such as Quit, Cancer Council, VicHealth and government departments, including measures such as plain tobacco packaging and the tobacco tax, has enabled clear and consistent messages to be communicated to the public about smoking in public places.
Develop personal skills	The Quitline and the Quit website improve health and wellbeing outcomes for individuals by providing advice on giving up smoking.
Reorient health services	VicHealth provides the funding for Quit, and the government supports this important work by ensuring that laws are in place to deter people from smoking. Hopefully this will lead to a reduction in the \$31.5 billion currently being spent on the burden of diseases linked to tobacco smoking (DHA 2006).

**Figure 5.7** Trends in tobacco consumption in Australia for people aged 15 years and over, 1910–2010 (source: Cancer Council 2012)

As shown in Figure 5.7, through the efforts of collective health promotion initiatives, together with research and the commitment of the Australian Government in implementing laws, tobacco consumption has decreased over the past 45 years. The gains have been significant and the strategy is considered a success. However, the WHO FCTC, the Australian National Tobacco Strategy 2012–2018 and Quit remain in place, as there is still work to be done to ensure that the health and wellbeing gains continue and the burden of disease caused by smoking and secondary smoke continues to decrease.

Review and reflect

- 1 Outline why tobacco smoking requires a health promotion campaign.
- 2 Identify the population groups in Australia most likely to benefit from a health promotion campaign on tobacco smoking. Justify your answer.
- 3 Evaluate the success of the Quit program, using data from Figure 5.7 to justify your response.

Road safety

1.25 million
Road deaths worldwide
each year

1205
Road deaths in
Australia, 2015

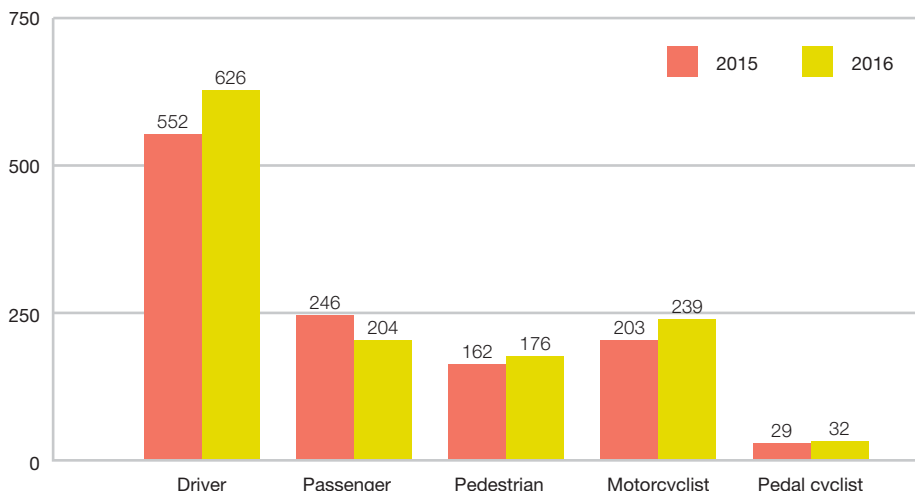
281
Road deaths in
Victoria, 2016

(sources: WHO website; BITRE 2017; TAC 2017)

Road trauma is a significant problem for health and wellbeing, not just in Australia but worldwide. Road traffic injuries are the ninth-leading cause of death globally (according to WHO). In 2015, there were 1205 deaths on Australian roads. While 281 road deaths occurred in Victoria in 2016, a further 4951 people were seriously injured (Victorian Government 2016). These statistics are a result of modifiable risk behaviours, such as speed, fatigue, distractions including the use of mobile phones, and the quality of roads and vehicles. These can be changed to improve health and wellbeing outcomes for all road users. It is estimated that road accidents cost the community \$3 billion annually in Victoria alone. This is a huge personal, social and financial cost for communities to bear.

Who dies on our roads?

In Victoria during 2016, more males (209) died on the roads than females (82) (TAC 2017). This trend is replicated both nationally and internationally. Drivers are the most likely road user group to die on Australian roads (Figure 5.8), and in Victoria, country road users are more likely to die than metropolitan road users (Figure 5.9). It is not only death that causes significant problems for the community but the disabilities acquired as a result of the injuries sustained in a road accident. Cyclists and pedestrians are more likely to be injured than other road users (Victorian Government 2016).



The Department of Infrastructure and Regional Development. <https://bitre.gov.au/statistics/safety/>
CC BY 3.0 AU
<https://creativecommons.org/licenses/by/3.0/au/>

Figure 5.8 Deaths by road user group: 12 months to November 2016

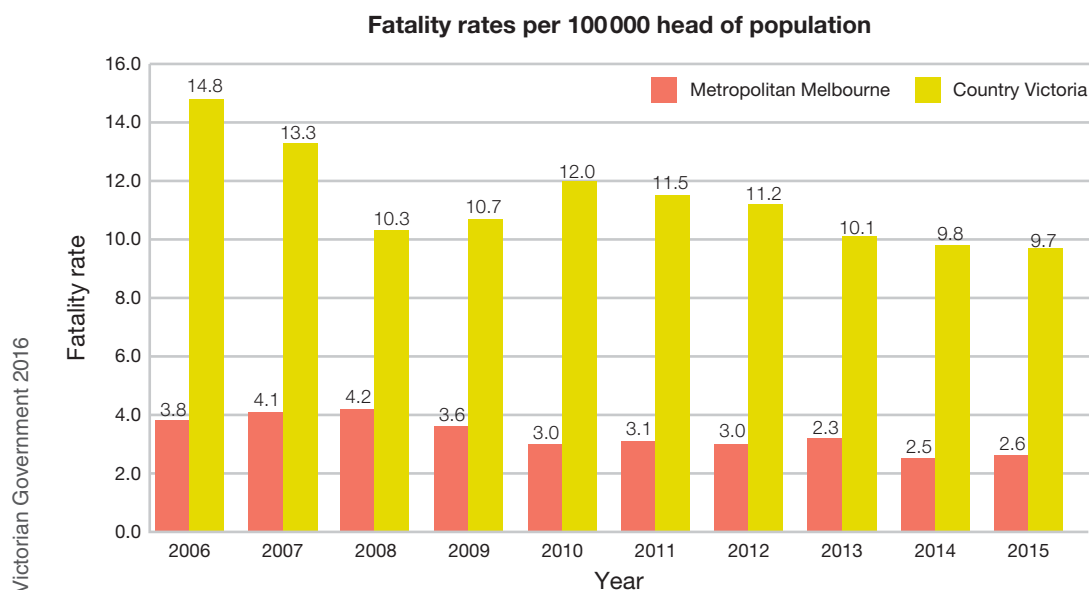


Figure 5.9 Mortality rates for metropolitan road users versus Victorian country road users

Health promotion and road safety

Legislation features very heavily in health promotion for addressing road trauma. In conjunction with the legislation there is always a comprehensive health promotion program to educate the public about why the laws have been introduced and what they are intended to achieve.

For road safety it is widely acknowledged that improvements in health outcomes for road users involve:

- enacting and enforcing laws on key risk factors (speed, safety measures such as seat belts, cyclists wearing helmets, and so on)
- improving road infrastructure
- improving vehicle standards
- improving post-crash care.

Victoria has led the way, with legislation resulting in significant gains in health and wellbeing of road users since the 1970s (Figure 5.10). In 1971, Victoria was the first jurisdiction worldwide to pass legislation mandating the use of seatbelts in cars. This led to further road-use legislation, such as mandatory wearing of bike helmets in 1990. Both laws have resulted in significant gains in the health and wellbeing of the population, with occupant deaths in cars falling by 18% at the end of 1971 and 26% by the end of 1975. In 1991, just one year after the introduction of the bike helmet law, the number of crash victims killed or admitted to hospital with head injuries was reduced by 51% (WHO 2004).



Figure 5.10 Reducing the state's road toll is an example of successful policy, law and initiative implementation in Victoria.

Transport Accident Commission

The Transport Accident Commission (TAC) is a Victorian government-owned organisation whose job is to promote road safety, improve the state's trauma system and support people who have been injured on Victorian roads. Funding for the TAC comes partly from registration payments for vehicles made to VicRoads. In 2011–12, in addition to developing comprehensive health promotion campaigns, the TAC paid \$1.01 billion in benefits and compensation to Victorians for injuries or deaths on our roads. The financial cost is not the only cost felt by the Victorian community. For every person killed or injured in a road accident, 20 other



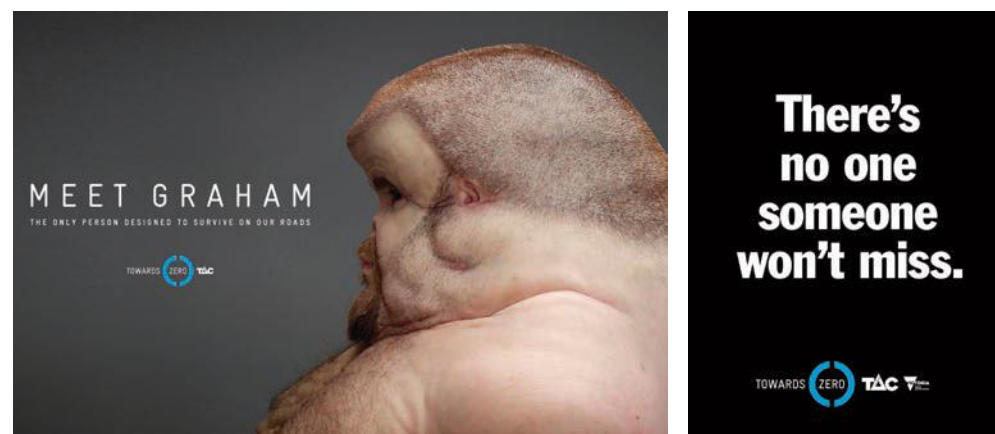
people in that person's circle feel the direct impact of the accident. This is a significant cost. The reason that laws such as those in Figure 5.10 (page 129) and the campaigns discussed below were developed was to help improve people's behaviour on the road and educate road users.

The TAC works with its major partners: Victoria Police, Department of Justice and Regulation, Department of Health and Human Services, and VicRoads. The TAC supports people who have been injured and develops programs to educate the public. Victoria Police enforces the legislation on road safety. The Department of Justice and Regulation oversees mobile, fixed-speed and red-light cameras. VicRoads is the leading agency for road construction and for registering vehicles, ensuring that they meet minimum safety criteria. The Department of Health and Human Services oversees trauma services and after-crash care. These agencies work together to prevent accidents or, if an accident does occur, to ensure that the impact on the community is minimised and the treatment is efficient and effective.

Towards Zero

Towards Zero is a major campaign that commenced in Victoria in 2016. Its aim is to address road trauma and improve road safety. The program is ambitious, because its main goal is to reduce the road toll to fewer than 200 road deaths by 2020 and reduce injury sustained on Victorian roads by 15%. The campaign focuses on four main areas:

- safe roads
- safe speed
- safe vehicles
- safe people.



Transport Accident Commission



Weblink

INVESTIGATE

Investigate Towards Zero further by watching a TAC video. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

Figure 5.11 TAC campaigns: the poster on the left shows an interactive sculpture, designed by a trauma team, to show how a human would have to look if they were to survive a crash on the roads. The poster on the right aims to remind readers that everyone has a family or friends, and everyone's life is valuable.

The Towards Zero Road Safety Strategy 2016–2020 states that these areas will be addressed by:

- improving the quality of roads and roadside infrastructure
- engaging the community on speed limits

- improving behaviour on the roads through education, campaigns and research
- educating people about safer vehicles.

Part of the Towards Zero campaign is Project Graham (Figure 5.11). 'Graham' is a model of the type of human body that would be required to survive a road collision, and represents how vulnerable our bodies are. Graham can be investigated on the TAC website or in person at display locations around the state. He highlights the injuries and burden of disease road users risk experiencing if they are involved in a crash. The Towards Zero campaign is supported by media campaigns on television, radio, print and web.



INVESTIGATE

Complete the eLearning module for Towards Zero. You will need approximately 30 minutes to complete the module. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

Activity

After completing the eLearning module for Towards Zero, answer the questions below.

- 1 Outline five key points of the Towards Zero campaign.
- 2 List three key pieces of information you learned from completing the eLearning module.
- 3 **a** Describe two laws that have had a significant impact in improving the health of Victorian road users.
b Identify which element of the Ottawa Charter these laws represent.

Table 5.2 Evaluation of the Towards Zero campaign using the Ottawa Charter

Action area of Ottawa Charter	Evaluation
Build healthy public policy	Towards Zero is a TAC initiative. The TAC, Victoria Police, Department of Health and Human Services, Department of Justice and Regulation and VicRoads all work together to implement and achieve the Towards Zero goals. An example is building safer roads, especially in rural Victoria, because poorer quality roads in rural areas cause a higher rate of road deaths. Improving the quality of country roads addresses the issue of equity of health outcomes for all Victorians.
Create supportive environments	The Towards Zero campaign is played on the radio and shown on roadside billboards to remind people of the important messages regarding road safety while they are driving. In addition, Victoria Police enforce the laws to work towards the target of zero deaths and injuries on our roads. VicRoads also support the goal of reducing mortality on our roads by ensuring that roads are safe. Towards Zero also aims to ensure safe vehicles. Companies supplying fleet cars must meet the highest safety standards, so that people who spend a lot of time on the roads are in safe vehicles that can protect them if an accident occurs.
Strengthen community action	The Towards Zero program builds on existing legislation and health promotion messages such as 'Buckle up' (seatbelts), 'Arrive alive' (fatigue), 'If you drink and drive you're a bloody idiot' (alcohol) or 'Blind' (distractions by friends or mobile phones). It also teaches people to take positive action to protect themselves and other road users by acting on the messages and engaging in positive behaviour, such as driving within speed limits, and always wearing a seatbelt.
Develop personal skills	The TAC eLearning module can help the community understand the Towards Zero program. Road users can be educated about risks to their safety and safer behaviour. The module provides information about speeding, driving while distracted (e.g. using a mobile phone) or fatigued, and has case studies about safe road use.
Reorient health services	The Towards Zero Road Safety Strategy 2016–2020 should lead to a positive outcome by reducing the Victorian road toll. It addresses the issue of road quality by working with VicRoads to build safe roads and infrastructure for country road users, to reduce the number of road deaths in regional Victoria. It is hoped that these measures will reduce the \$1.01 billion currently spent on compensation for injuries or deaths of Victorian road users.

Skin cancer

13 280

**Estimated new cases of
melanoma diagnosed in
Australia, 2016**

1770

**Estimated mortality
from melanoma in
Australia, 2016**

23 437

**Melanoma-related
hospitalisations,
2013–2014**

(source: AIHW 2016d)

Melanoma-related hospitalisations 2013–2014

Melanoma is a potentially deadly form of skin cancer. It is a serious health and wellbeing concern, particularly in Australia, which has the highest incidence of melanoma in the world. Melanoma is the fourth most commonly diagnosed cancer in Australia behind prostate, bowel and breast cancer. While death rates associated with melanoma have fallen, diagnosis and hospitalisations from the condition (Figure 5.12) continue to rise.



Figure 5.12 Trend in the number of hospitalisations for melanoma over 10 years

INVESTIGATE

Investigate the three types of skin cancer. Find photos of each type and the different forms. (You could start with the Cancer Council website.) Then ask four people in your class to name the different 'skin diseases' from your (unlabelled) photos. How many are easily recognised? Were any not recognised as skin cancers?

Skin cancer is characterised by the uncontrolled growth of defective skin cells, as shown in Figure 5.13. If undetected, these cells are able to enter the lymph system and spread.

There are three main types of skin cancer (see Figure 5.14):

- basal cell carcinoma (BCC)
- squamous cell carcinoma (SCC)
- melanoma.

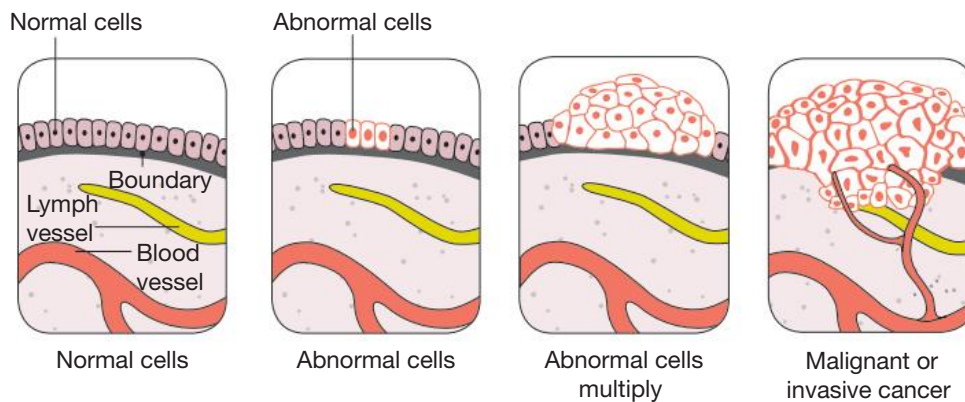


Figure 5.13 The development of skin cancer cells (source: Cancer Council 2016, p. 4)

Melanoma is the deadliest form of skin cancer due to its ability to invade other parts of the body quickly via the **lymph system**. The other two types of skin cancer are classified as non-melanoma, and are not usually life-threatening if treated early. Basal cell **carcinoma** (BCC) starts in the lower layer of the epidermis (Figure 5.14) and usually develops on areas of the body that have high sun exposure. It grows slowly and appears as a pearl-coloured lump. Squamous cell carcinoma (SCC) starts in the upper layer of the epidermis. It also develops in areas of high sun exposure but looks more like a sore that will not heal. It can be sore to touch.

melanoma a potentially deadly type of skin cancer that usually results from overexposed to the sun, although rare melanomas can occur in parts of the skin or body that have never been exposed to the sun

lymph system a network of tissues and organs that help rid the body of toxins, waste and other unwanted materials; important in fighting infection

carcinoma a malignant tumour (cancer) that begins in the skin or in the tissue that lines organs, such as the liver or kidneys

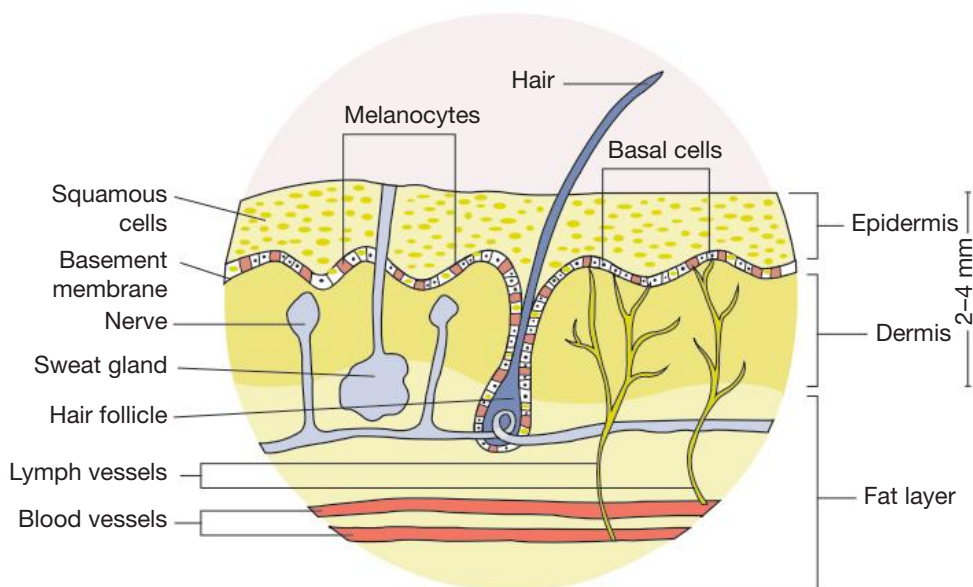


Figure 5.14 Example of a normal layer of skin (source: Cancer Council 2016, p. 7)

While BCC and SCC are the two most commonly diagnosed cancers, they are not reportable to cancer registries, so data is limited. For this reason, the remainder of the information presented in the text, including data and content, refers to melanoma unless otherwise stated.

Who gets melanoma?

The population groups most likely to suffer from melanoma are males, non-Indigenous Australians and people living in major cities. Of the new cases of melanoma diagnosed in Australia, 59% will be males (Cancer Council 2016). Non-Indigenous Australians represent 33 cases per 100 000, and Indigenous 9.3 cases per 100 000. People living in major cities are more likely to record a diagnosis of melanoma than those in regional or remote areas (Figure 5.15).

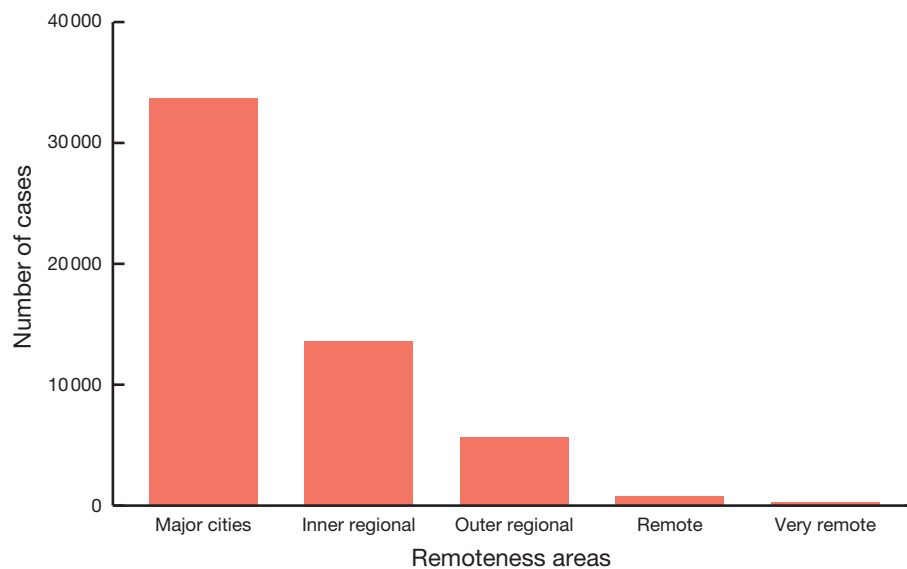


Figure 5.15 Number of cases and incidence rate of melanoma by remoteness area 2008–2009 (source: Cancer Council 2016, p. 30)

Figure 5.16 The SunSmart app is a tool to tell people when sun protection is recommended at their location, based on times of day when UV levels will be at 3 or higher. A screen with the colour green as the backdrop indicates the UV index does not require action, and the orange backdrop indicates the UV index for that day will require some sunsmart behaviours. The app was created by SunSmart, with the Bureau of Meteorology and ARPANSA.



The risk factors for skin cancer include exposure to ultraviolet (UV) radiation, repeatedly being sunburnt, prolonged time spent outdoors without adequate protection, and a family history and genetic susceptibility to the disease as a result of skin type. UV rays come from the sun or an artificial source, such as solariums. UV radiation provides the skin with vitamin D (an important vitamin for bone health). However, too much exposure to UV can lead to sunburn, premature ageing of the skin, skin cancer and eye damage. UV radiation cannot be detected with any human senses, it is not like sunlight, which we can see, or the sun's warmth, which we can feel. UV levels can be high on cloudy or cool days, and are also affected by the time of year, time of day, altitude, proximity to the equator, scattering and reflection.

In Australia, UV radiation is monitored by agencies such as the Bureau of Meteorology and Australian Radiation Protection and Nuclear

Safety Agency. The World Health Organization recommends sun protection from a UV level of 3 or higher. When the UV level is below 3, sun protection is not recommended unless people work outdoors, are outside for extended periods, or are in highly reflective environments such as snow or water. Cancer Council's SunSmart program follows these recommendations.

The good news about skin cancer is that survival rates suggest that health promotion is working, with a 90% relative survival rate from melanoma (AIHW 2016d). The death rate for melanoma in Australians aged under 40 declined in 2016 (Figure 5.17).

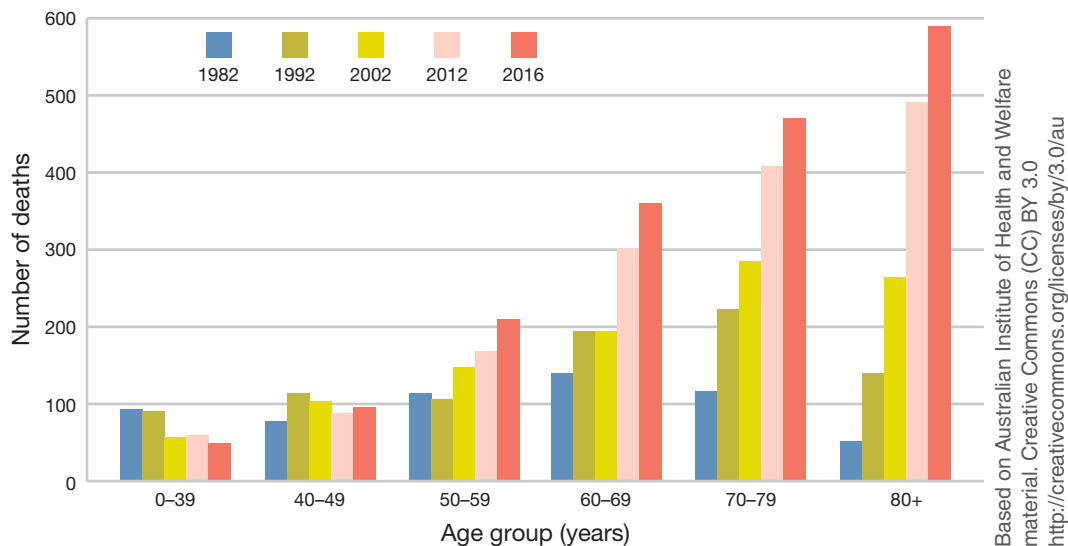


Figure 5.17 Number of deaths from melanoma by age group, 1982, 1992, 2002, 2012 and 2016

Health promotion and SunSmart

The 'Slip! Slop! Slap!' message was first introduced to Victorians in 1981, and was expanded in 1988 to be part of the more comprehensive SunSmart program. VicHealth and Cancer Council Victoria have jointly funded the program since its inception, and this support has ensured that the SunSmart program can continue to be a leader in promoting balance between the benefits and harms of UV radiation, improving people's sun-protective behaviours, and advocating for broad environmental and legislative change.

Ninety per cent of early childhood centres and primary schools are accredited under the SunSmart program. A SunSmart school has a SunSmart policy that outlines safe sun behaviours and meets a range of criteria set out by SunSmart, including providing adequate shade. Safe sun behaviours include the 'slip, slop, slap, slide and seek' message (Figures 5.18 and 5.19). With more research about the impact of UV radiation, the message was expanded to include 'slide on sunglasses' to protect eye health and 'seek shade'.



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of Cancer Council Victoria

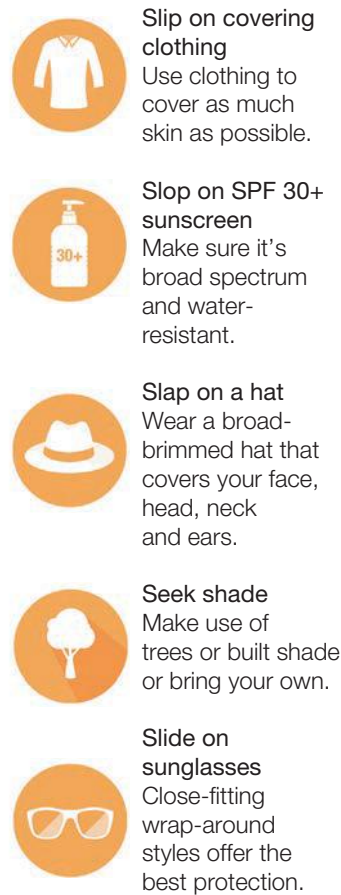


Figure 5.18 The 'slip, slop, slap, seek and slide' logos with information to educate the public on each of the elements of the SunSmart campaign (source: Cancer Council Victoria n/d)



Figure 5.19 The Sid Seagull 'slip, slop, slap, slide and seek' health promotion campaign

SunSmart also has relationships with:

- secondary schools – including offering policy support, templates and curriculum resources
- workplaces – a representative of the SunSmart team supports workplaces in developing occupational health and safety (OH&S) guidelines to ensure they meet their legal requirements under Victorian health and safety legislation to reduce exposure to UV radiation

- local governments – through its own public health platform, including sporting clubs.
According to the SunSmart program, a good school policy will address:
- clothing – uniforms should protect against the sun; this includes collars, wide-brimmed hats, long sleeves and sunglasses
- sunscreen – students are encouraged to have their own SPF 30+ and apply it regularly; if possible, supplies will also be provided by the school
- scheduling – outdoor events should be held outside the highest-risk time of the day for UV radiation (early in the morning or later in the afternoon)
- role modelling – students and teachers act as role models with their own sun-protective behaviour
- shade – shade structures should be considered in planning new outdoor spaces, and outdoor events are held in these shaded areas in summer
- curriculum – information about sun protective/balance behaviours are included in the curriculum and are reinforced by staff and the student representative council of a school (or the workplace reps of a workplace)
- staff occupational health and safety – it is the responsibility of the individual to engage in sun-protective behaviours but this must be adequately supported by the staff, by endorsing correct clothing, sunscreen and shade
- vitamin D – sun protection measures are not be enforced when UV levels are below 3 (usually between May and mid-August in Victoria), so that students get enough exposure to UV radiation to maintain their vitamin D levels and support their bone health.

In addition to the SunSmart message, intensive media campaigns reinforce the key message of the program. Examples are 'UV. It all adds up.' and the National Skin Cancer Action Week, held each November to promote SunSmart behaviour before summer. SunSmart also provides education to general practitioners (GPs) to ensure that they are able to detect early signs of skin cancer and treat appropriately.

As a result of SunSmart, WHO named Cancer Council Victoria a Collaborating Centre for UV radiation. This forms part of WHO's work in its mandated INTERSUN Programme.

In 1992, WHO agreed to research and provide information and support to countries on the impact of UV radiation on health, and to support people and populations in modifying their behaviour to reduce UV-induced health risks.



WATCH

Watch a video about the SunSmart Victoria campaign, such as 'UV. It all adds up'. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

Review and reflect

After watching 'UV. It all adds up', answer the following questions.

- 1 Describe the key message.
- 2 Identify the population groups who would benefit from this campaign. Justify your answer.
- 3 What health and wellbeing benefits could be expected for the Australian population as a result of the video clip?

Table 5.3 Evaluation of the SunSmart program using the Ottawa Charter

Action area of Ottawa Charter	Evaluation
Build healthy public policy	SunSmart has supported workplaces in developing occupational health and safety laws for outdoor workers, in person or via the templates on its website. 'No hat, Play in the shade' policies in schools are a result of the sample policies provided by SunSmart. SunSmart, together with the Cancer Council and other key partners, lobbied the government for 10 years with research and current statistics about the dangers of solariums for skin health. Commercial solariums were banned in Victoria from 2015, and commercial solarium operators are also banned in New South Wales, South Australia, Tasmania, the Australian Capital Territory and Queensland.
Create supportive environments	The SunSmart program supports organisations to develop and include provision for shade structures in public areas such as pools and playgrounds, if not already in existence. It encourages and supports holding sport events out of the middle of the day, to ensure that exposure to UV radiation is kept to a minimum. Encouraging workplaces and schools to provide SPF 30+ sunscreen also creates supportive environments that display SunSmart behaviour.
Strengthen community action	Partnerships between key stakeholders such as WHO and VicHealth ensure that new initiatives and practices introduced to the community are innovative and based on best practice. SunSmart's relationships with schools/early childhood centres, workplaces, local councils and sporting groups ensure that consistent messages are delivered about safe UV radiation exposure: slip, slop, slap, seek and slide when UV levels are 3 or higher, and relax this when UV is below 3 (unless a person is an outdoor worker, or outdoors in highly reflective environments or for extended periods). Sample policy templates empower an organisation to adjust practices to suit its needs.
Develop personal skills	A mixture of mandated policies in certain settings, such as 'No hat, Play in the shade' in schools, support and reinforce to individuals the personal skill of sun-protective behaviour. Education programs in schools, workplaces and media that educate parents, students and the wider community are based on the latest research and provide information to individuals on how to best look after their health.
Reorient health services	SunSmart emphasises prevention and liaises with various health professionals about early detection of skin cancer and promotion of safe sun practices. Non-melanoma skin cancer costs the state health system an estimated \$232 million and melanoma \$65 million (Montague, Borland & Sinclair 2001). However, SunSmart is considered extremely cost effective: for every \$1 spent, there is a \$2.30 net saving. It is one of a few Australian public health interventions considered 'excellent value for money' (Cancer Council Victoria 2017).

The success of SunSmart is evident in a number of key statistics. A report on the success of the SunSmart program in the 20 years since it began presented the finding that since the first slip, slop, slap message followed by the SunSmart program, the number of people reporting sunburn has fallen by 50% (Figure 5.20).

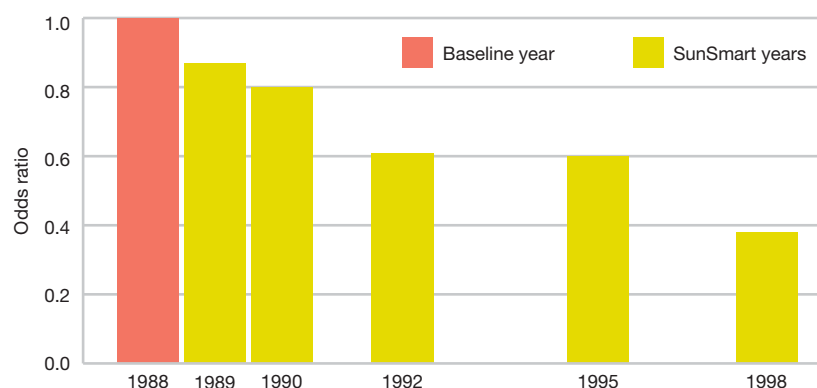


Figure 5.20 Decline in rates of weekend sunburn 1988–1998: the odds ratio has been adjusted for UVR, temperature, month, age, sex and skin type (source: Montague, Borland & Sinclair 2001).

The Cancer Council has also found that:

- 90% of Victorian primary schools are registered SunSmart Schools, reaching 430 000 children. This is the highest participation rate across all Australian states; and the highest participation rate for any public health intervention in Australia. 89% of all Victorian primary schools now have a sun protection policy, compared with 17% in 1993.
- In 1988 2% of Victorian preschools reported that hats were available at preschool – this has now increased to 91%.
- Between 2009–2013, 491 workplace education sessions were conducted at more than 150 workplaces reaching almost 8000 participants.
- The SunSmart app has been downloaded by more than 250 000 users.

Extract from Cancer Council Victoria 2017, SunSmart, History,
<http://www.sunsmart.com.au/about/history>

Improving Indigenous health through health promotion programs

As you read in the previous chapter, there are differences between the health status of non-Indigenous and Indigenous Australians. These variations can be due to biological, sociocultural and/or environmental factors. To improve Indigenous health and wellbeing in Australia, health promotion programs that focus specifically on the Indigenous population are needed. In this section you will read about some successful health promotion initiatives focused on the Indigenous population of Australia.

Closing the Gap

Closing the Gap is an initiative that aims to achieve Indigenous health equality within 25 years. The strategy was endorsed by the Australian Government in 2008 and is overseen by the Council of Australian Governments (COAG). Developed to address the disadvantage faced by Indigenous Australians, it focuses on six key targets:

- health
- housing
- early childhood
- education
- economic participation
- remote service delivery.

Each focus area has measurable targets that will be used to measure performance and ensure the government meets its commitment to Indigenous health. A long-term commitment to the process is required, with a collaborative effort by government, private and not-for-profit sectors, communities and individuals.

The Prime Minister releases a report annually, detailing progress towards targets in each of the focus areas. Some highlights of the work being completed in these focus areas are described below.



Video
tutorial

WATCH

Watch a video about the key target areas reported in the Prime Ministers 2017 annual Closing the Gap Report.

Health

There is a strong connection between good health and improved outcomes for an individual in education, employment status, housing and income. Research by the Closing the Gap campaign has revealed that 83% of Indigenous children in good health attend school at least 80% of the time. Improving the health of Indigenous Australians will help ensure that they have access to opportunities in life that benefit their wellbeing and ensure that future generations have the opportunity to develop to their full potential.

Indigenous life expectancy is far less than for non-Indigenous Australians (see Chapter 2). Although life expectancy has improved for Indigenous Australians, there is much more work to be done via Closing the Gap.

A focus on improving access to health care, reducing smoking rates in the Indigenous population, improving mental health services and ensuring appropriate, culturally sensitive health service delivery has seen improved outcomes for the Indigenous population.

Through Closing the Gap, the Australian Government has developed the Indigenous Australians' Health Programme. This program received \$3.3 billion to improve primary health care and infrastructure, including maternal and child health programs (see page 000).

The health programme includes a number of parts:

- the Tackling Indigenous Smoking Programme, which provides funding to improve Quitline services, as well as grants to allow communities to provide intensive smoking prevention and cessation activities
- improved access to culturally sensitive mental health services, including suicide prevention programs
- improved access to the Medicare Benefits Schedule, which has seen an increase in claims for management plans and team care agreements (Figure 5.21)
- improved access to the Pharmaceutical Benefits Scheme (PBS).

The improved access to Medicare and the PBS suggest that culturally sensitive delivery helps individuals to access appropriate health care when required, and that funding to train and increase the numbers of Aboriginal health care workers support this process.

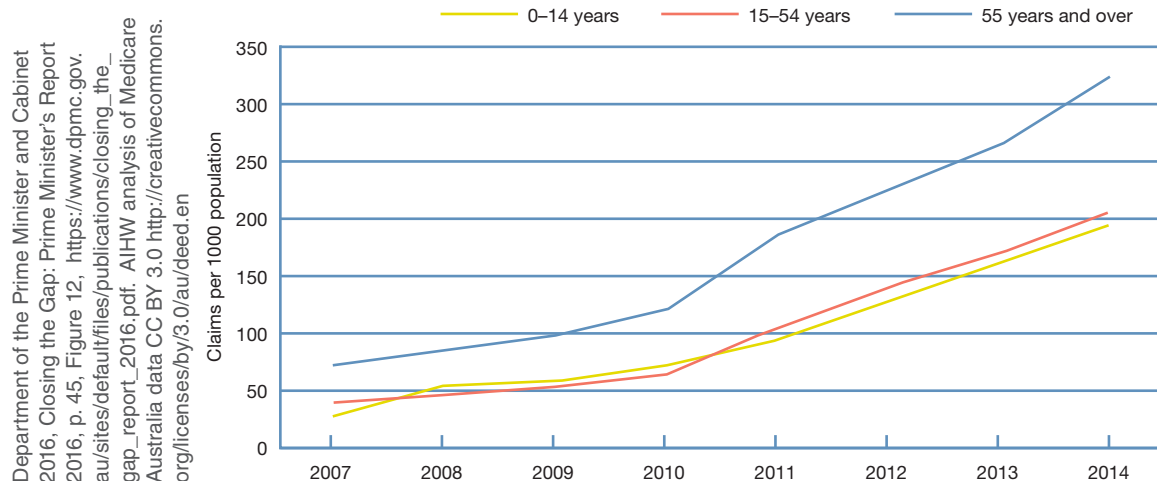


Figure 5.21 Indigenous Australians receiving Medicare Benefits Schedule health assessment, by age group, 2007–2014

Early childhood

Early childhood programs are aimed at providing quality prenatal and postnatal care, and appropriate education, care and intervention to parents of newborns. Elements of this early childhood focus include childcare, early childhood education, parenting support and child protection. Programs such as the Baby One Program, New Directions: Mothers and Babies Services, and the Australian Nurse–Family Partnership Program are all part of the Australian Government's Better Start to Life approach, which has provided \$94 million over three years to this focus area.

These programs are improving health status and reducing child mortality rates in the Indigenous community. Figure 5.22 shows a reduction in child mortality by almost half from 1998 to 2014, and the target set for 2018, of halving the gap in mortality rates for Indigenous children under five within 10 years, is likely to be achieved.

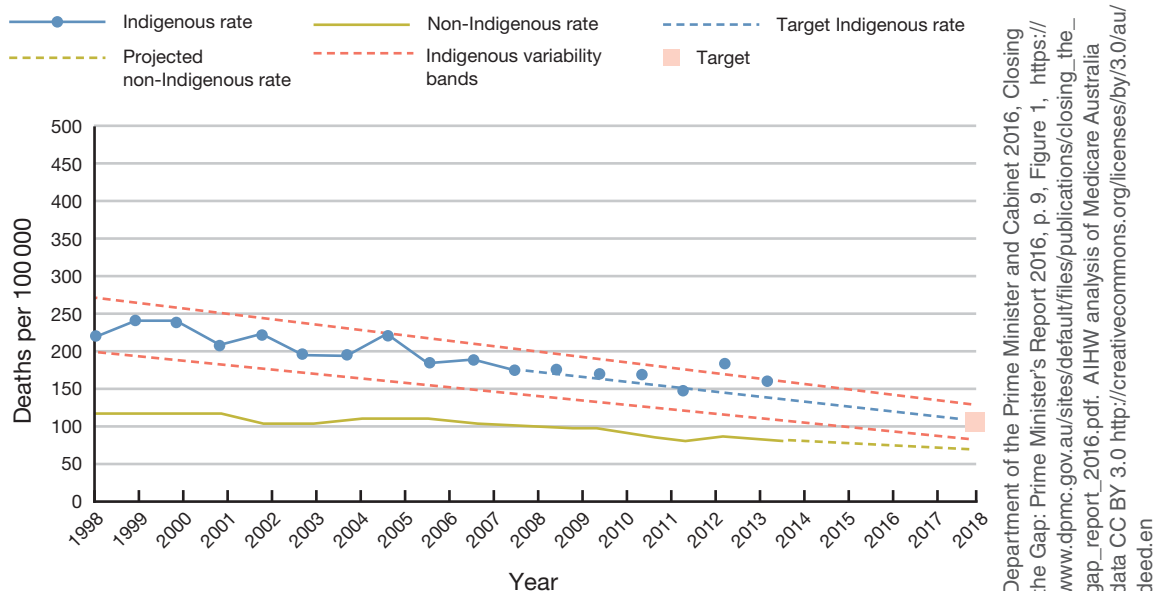


Figure 5.22 Child mortality rates by Indigenous status 1998 to 2018 (projected)

Review and reflect

- 1 Describe the 'Baby One Program'.
- 2 Explain why this program is required for Indigenous Australians. (Use your knowledge and data from Chapter 2 in answering this question.)
- 3 Evaluate the Baby One strategy, using the Ottawa Charter elements of 'Create Supportive Environments' and 'Develop Personal Skills'.

Education

It is important to keep students in school. There is a strong link between years of formal education and the health status and employment an individual is able to attain. A major focus of the education area is to improve school attendance of Indigenous children and help them remain in formal education until Year 12. In 2015, the national attendance rate for Indigenous students was 83.7%. The rate



Weblink

INVESTIGATE

Investigate the Baby One Program further. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

for non-Indigenous students was 93.1%, so there is still work to be done in this area. The government is investing in:

- training teachers who not only have the skills to teach but are knowledgeable in strategies for literacy and numeracy specific to Aboriginal and Torres Strait Islanders
- funding schools that educate students from remote locations who require boarding at school
- mentoring programs aimed at engaging students in education and connecting them with a 'significant other' in their school community
- Australian School-based Apprenticeships and the Flexible Literacy for Remote Primary Schools Program, which targets literacy through direct instruction. Programs in literacy are showing promise (Figure 5.23), and in most states more students are reaching national minimum standards for reading.

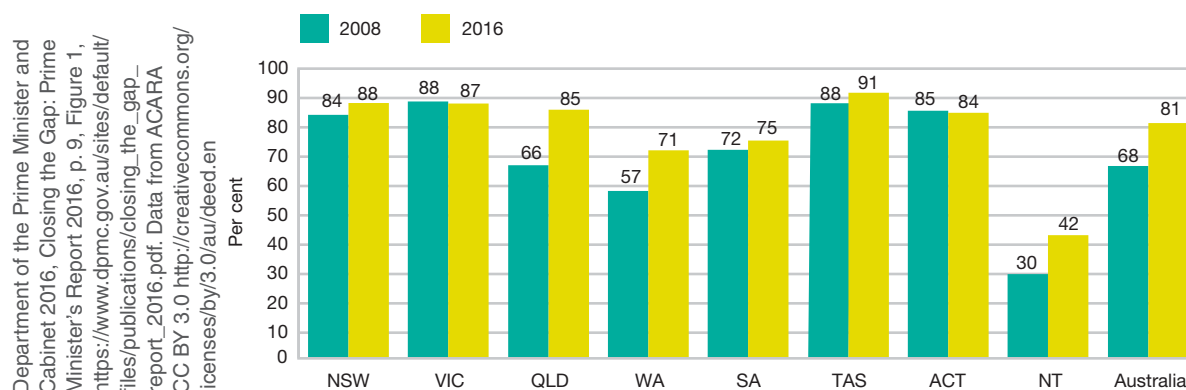


Figure 5.23 Indigenous students reaching National Minimum Standards for Year 3 reading, by state and territory

Investment in education at compulsory school level (K–10) has had a flow-on effect on Indigenous enrolments in higher education, which have increased by 70% between 2007 and 2017. Improved education should lead to gains in other target areas, with an overall improvement in the health and wellbeing of Aboriginal and Torres Strait Islander people in Australia.

Housing

The problems of overcrowding and insecure affordable housing faced by many Indigenous Australians are being addressed through the National Partnership Agreement on Remote Indigenous Housing (NPARIH), which provided \$5.5 billion between 2008 and 2018. In remote Indigenous communities, 4200 new homes were built and 4800 existing homes were upgraded. Providing secure, safe housing reduces the risk of exposure to infectious diseases and allows students to attend school regularly and attain minimum levels of schooling. This improvement and upgrading of housing has also led to opportunities for local Indigenous people to be employed in building the houses and to gain suitable qualifications to carry out the work through the various schemes and programs developed by Closing the Gap.

Economic participation

The Closing the Gap program is providing opportunities for Aboriginal and Torres Strait Islanders to be involved in the economic development of their communities,

by participating in the workforce, gaining an income and becoming self-sufficient, and helping to keep the local businesses sustainable in the long term. Some of the programs are remote business development, focusing on unique opportunities that Indigenous people can deliver, through programs such as the Indigenous Visual Arts Industry Support (IVAIS) program and the Indigenous Language and Arts (ILA) program. These programs support Indigenous people in maintaining and celebrating their culture, deepening their spiritual and emotional health and wellbeing, while also earning an income through education or tourism roles. Indigenous people trained as park rangers can use their knowledge and understanding of the land to help preserve the cultural integrity of local sites while also allowing culturally appropriate economic development of these locations.

Remote service delivery

In all target areas, it is important to ensure that programs and initiatives are accessible by all Indigenous people, including those in remote areas, allowing them to be in contact with the greater Australian population and also to access appropriate services when they need them. There are several ways to achieve this, including mobile units; setting up infrastructure such as improved roads and air services; and digital technology such as the National Broadband Network and mobile phone base stations.

Table 5.4 Evaluation of Closing the Gap initiative using the Ottawa Charter

Action area of Ottawa Charter	Evaluation
Build healthy public policy	The Australian Government has, through COAG, committed funding to support a range of initiatives, strategies and policies through the Closing the Gap initiative, to improve Indigenous health and wellbeing. In particular, \$5.5 billion was allocated from 2008 to 2018 to build 4200 new homes and upgrade 4800 existing homes. Targets have also been set in each of the focus areas to be reported against, to ensure progress and that the money is being used as promised.
Create supportive environments	Committing \$5.5 billion to improved and new housing helps to create safe environments in which to live. The Baby One Program provides mothers with a safe environment for their babies, enables them to check their baby's development meets established milestones and that appropriate intervention is provided if the baby requires extra support.
Strengthen community action	Education sessions on prenatal and postnatal care are provided to women through initiatives such as the Baby One Program. Mothers improve their health and wellbeing knowledge, leading to improved health and wellbeing for the children in their care. Aboriginals and Torres Straight Islanders are trained in skills that enable them to participate in the workforce, earn an income and provide for themselves, including health care, food and appropriate shelter. Training locals in health services ensures culturally sensitive health provision for their community.
Develop personal skills	Programs such as Baby One assist parents to develop skills in caring and providing for a newborn, including being able to recognise illness and signs of slowed development, to ensure early intervention where required and culturally sensitive forms of support.
Reorient health services	Partnerships between federal and state governments, local councils and non-government resources have enabled a coordinated approach to ensuring positive health and wellbeing outcomes for Indigenous people. Training locals to be involved in initiatives helps ensure they remain sustainable beyond the funding initially provided by the government and addresses current health inequalities, to achieve a strong, sustainable community that can provide adequately for its people, including improved health outcomes. This will also allow for the money currently being spent in these areas to be used elsewhere in the community.

Victorian Aboriginal Community Controlled Health Organisation Inc.



The Victorian Aboriginal Community Controlled Health Organisation Inc. (VACCHO) is the state's peak representative health body for Victorian Aboriginal people. VACCHO is affiliated with the national body, the National Aboriginal Community Controlled Health Organisation Inc. (NACCHO). Both bodies are formally recognised by the state and federal governments. The VACCHO website states that its vision:

...is that Aboriginal people will have a high quality of health and wellbeing, enabling individuals and communities to reach their full potential in life. This will be achieved through the philosophy of community control.

Source: Victorian Aboriginal Community Controlled Health Organisation Inc. (VACCHO), <http://www.vaccho.org.au/om/>

VACCHO collaborates with its 30 members to advocate for issues on their behalf and develop policy and programs that are both successful and sustainable. The work of VACCHO has enabled a coordinated state-wide approach to Aboriginal health services and policies, and autonomy for Aboriginal Community Controlled Organisations (ACCO) in determining an approach to health care in their communities that is culturally appropriate and adequately resourced as a primary health care facility.

VACCHO's 30 member organisations are a combination of full and associate members. Full members are all-inclusive centres that provide a holistic approach to care and support for their community, including services in health, child welfare, legal and cultural heritage, while associate member sites are generally focused on one support area, such as health. ACCOs run their own programs, which support their communities and are adjusted to suit local interests.

An example of a program that has been developed and implemented for Indigenous people is the Victorian Aboriginal Health Service Food Share program. VACCHO and Secondbite are working in partnership to provide **food security** for Victorian Aboriginal people in urban, regional and remote areas. Secondbite collects surplus food from various organisations and redistributes it; 95% of this food meets the Australian Dietary Guidelines.

A member organisation of VACCHO, the Victorian Aboriginal Health Service (VAHS) in Fitzroy, Melbourne, has benefited from the partnership with Secondbite as it has developed a food share service at its site. Members of the community come together to package the fresh fruit and vegetables that have been delivered to VAHS, and pass it on to 20–30 families in the Fitzroy area who need the food. This program has been expanded to include vegetable planter boxes being developed at VAHS sites in Fitzroy and Preston, and Minajalku in Thornbury, to ensure sustainable, nutritious food supplies to Aboriginal people in the area.

Life!

According to the Life! program, Indigenous Australians 'are over three times more likely to get type 2 diabetes' than non-Indigenous Australians (source: Life! website). Type 2 diabetes is associated with a range of health problems, such as heart disease, stroke, kidney failure, blindness and risk of amputation, which add to this population group's burden of disease. VACCHO has worked on the Aboriginal Life! health promotion program, the Road to Good Health course, a 6-week course for Indigenous Australians. VACCHO and Diabetes Victoria, who

food security 'when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life' (Source: WHO)

administer the Life! program, work together to deliver the program. It teaches healthy habits, such as reading food labels, spending money appropriately, and choosing and preparing healthy foods, to help prevent type 2 diabetes and address associated issues such as excess body weight, heart disease and high blood pressure. The free program is delivered by Aboriginal health services.

Source: Life! website, 'What is the Life! Aboriginal Health Program?', <http://www.lifeprogram.org.au/contact/9-site/how-to-get-involved/42-what-is-the-aboriginal-and-torres-strait-island-life-program>

Table 5.5 Evaluation of VACCHO using the Ottawa Charter

Action area of Ottawa Charter	Evaluation
Build healthy public policy	VACCHO is the peak body for Indigenous health and wellbeing in Victoria. It is recognised by federal and state governments as the organisation to work with for funding and for policy and program development in Indigenous health. VACCHO has developed a number of partnerships to ensure positive health and wellbeing outcomes for the Indigenous people of Victoria, including working with Secondbite and the member organisations of VACCHO to improve food security, and a partnership with Diabetes Victoria to deliver the Life! program targeted at Indigenous people and known as the Road to Good Health.
Create supportive environments	The programs developed by VACCHO in conjunction with its partners are provided by Indigenous people for Indigenous people, to ensure that cultural sensitivities are addressed, and are conducted at local health organisations so they are accessible to local people.
Strengthening community action	The member organisations of VACCHO deliver health programs that best suit the needs of the local Indigenous people, with the support and backing of VACCHO to represent their ideas and concerns to the government, ensuring better outcomes for Indigenous people.
Develop personal skills	The programs developed by VACCHO in conjunction with its partners are provided by Indigenous people for Indigenous people. A 6-week program, the Road to Good Health, teaches participants the skills to prevent diabetes.
Reorient health services	The partnership between VACCHO and NACCHO provides communication with state and federal government bodies to ensure that funding opportunities are available and that policies are representative of the cultural sensitivities of Indigenous people and lead to positive outcomes in health and wellbeing. VACCHO's partnerships with Secondbite and Diabetes Victoria ensure a coordinated approach to communicating health promotion messages to those who need it.

Fitzroy Stars

The Fitzroy Stars Football and Netball Club was originally formed in the 1970s, and re-formed in 2008, because the Melbourne Indigenous community needed a place to play sport and socialise. A number of organisations – Oxfam Australia, VicHealth and the Darebin City Council – worked collaboratively to support re-forming the club.

The Fitzroy Stars is more than a sporting club. Its aim is to provide a positive, supportive organisation to instil discipline and create better health and wellbeing opportunities for its community. The club's mission is to:

- nurture a culture that promotes a healthy lifestyle
- promote fitness, nutrition, diet and self-esteem
- offer pathways to employment and education
- foster reconciliation by building strong bridges between Indigenous and non-Indigenous communities.

Video
tutorial**WATCH**

Watch a video about the Fitzroy Stars and Netball Club and the benefits of the club to Indigenous health and wellbeing.

The club has developed partnerships with council, government, universities, Oxfam, VicHealth and the AFL. These relationships have ensured that sponsorship dollars are available to improve facilities and offer extra support programs in fitness and nutrition to the Indigenous people involved in the club. Since the club re-formed, membership has grown to 200. It offers a safe place for people of the community to meet and socialise beyond training and game time.

In addition to playing sport, men can take a Well Person's Health Check with the Victorian Aboriginal Health Services. It includes tests for nutrition, smoking and alcohol use, and complements the weekly lifestyle sessions offered outside training time, to educate and support behaviour change for better health outcomes.

Table 5.6 Evaluation of the Fitzroy Stars Football and Netball Club using the Ottawa Charter

Action area of Ottawa Charter	Evaluation
Build healthy public policy	The local council has worked closely with the Fitzroy Stars to ensure they have a suitable playing space and clubrooms that can be used for socialising. VicHealth and Oxfam have supported the initiative financially and with human resources, to improve health and wellbeing outcomes for Indigenous members of the Melbourne community.
Create supportive environments	A safe meeting place for members of the Indigenous community in and around inner Melbourne is provided, to socialise and engage with people of the Indigenous and non-Indigenous communities, promoting a positive environment where people can exercise and have health forums if required to improve health outcomes for individuals.
Strengthen community action	Through the Fitzroy Stars, individuals gain links to a community organisation that then has further links with other community organisations, which can assist members of the club in improving their health and wellbeing.
Develop personal skills	Members of the club are supported in seeking employment or education that will assist themselves and their families to access resources such as health care, and to be independent of welfare in providing basics such as food and clothing for themselves and their families. The club promotes nutrition, fitness and self-esteem through the connectedness of being part of a club.
Reorient health services	Members who play for the club are expected to be drug and alcohol free. The club is a 'dry' club, to encourage people to socialise in an environment free of drugs and to have positive experiences without substance abuse. This supports the health of individuals and reduces the risk of the lifestyle diseases that can result from drug and alcohol abuse. In turn, this will ease the burden on health services in the area and allow funds to be used to further promote good health and wellbeing.

Case study

Deadly Sista Girlz

Deadly Sista Girlz Wirrpanda foundation (different from the Deadly Sista Girlz Aboriginal Corporation) has evolved from the Dare to Dream girls group into a comprehensive program aimed at Aboriginal and Torres Strait Islander girls, to enhance their life opportunities. Established in Western Australia, it is aimed at 8–17 year olds and is delivered by trained role models from the community. The program provides an environment in which the girls can have honest and open discussions about personal issues and be mentored by Indigenous role models. In participating in the program, the girls address concepts of self-esteem and confidence, identity, communication, sexual and women's health, alcohol and other drug use, healthy nutrition, financial literacy and healthy relationships. It is hoped that, once girls have participated in the program, they will go into their communities and schools with the confidence to contribute positively to the community. The site for delivery of the program is the schools that partner with the program.

The Deadly Sista Girlz program is part of the David Wirrpanda Foundation. The foundation aims to develop and deliver programs that increase quality of life for Indigenous people across Australia. It does this through its three pillars: education, employment and health. It ensures that the

programs are authentic and relevant to its participants, by employing local Indigenous role models to lead the programs and increase the communities' capacity to be independent and empowered in improving health. The program has funding agreements and memorandums of understanding with federal and state government authorities, corporate organisations and philanthropic donors.

Among the key achievements of the Deadly Sista Girlz program:

- Since 2007 it has reached 4000 Indigenous girls, and has been delivered at 21 sites nationally, including three in Victoria.
- It has been recognised and awarded by NAIDOC and the Australian Government as a result of the capacity building of the communities it operates in.

Case study questions

- 1 Outline two reasons why it is important to provide Indigenous Australians with health promotion programs specific to their population group.
- 2 Describe the Deadly Sista Girlz program.
- 3 Evaluate the Deadly Sista Girlz program using the Ottawa Charter. To help you do this, Table 5.7 is provided as a guide. Questions are provided in each action area to guide you in evaluating the program.

Table 5.7 Evaluation of Deadly Sista Girlz by the Ottawa Charter

Action area of Ottawa Charter	Evaluation
Build healthy public policy	Does the program or initiative require changes of current laws, or new laws to be developed, to ensure improved health and wellbeing? Is there a change to the organisation's structure or operation as a result of the program/initiative being implemented? Does the program improve equity? Is the program broad and inclusive, taking in environments and populations, not just individuals?
Create supportive environments	Does the program ensure that the environments where people spend most of their time (home/work/leisure) support health promotion messages?
Strengthen community action	Does the program empower the community to take action? Does it allow for the community to be involved? Is it a learning opportunity for better health outcomes and is there funding attached to it?
Develop personal skills	Does the program enhance the personal and social development of participants? Does it enable people to have more autonomy over their health and environment? Is it provided in an education setting (schools, workplace, local council information session)?
Reorient health services	Does the program include partnerships and joining of people and organisations to improve outcomes in developing relationships? Does it respect a range of beliefs and interests?



Weblink

WATCH

Look for the Wirrpanda Foundation's video of the Deadly Sista Girlz program. The program is delivered by strong Aboriginal and Torres Strait Islander role models and mentors, who offer a stable environment in which they can discuss current and personal issues they may be facing.

Chapter summary

- In this chapter we have looked at the role of health promotion in improving population health in three areas: smoking, road safety, and skin cancers. However, the Study Design asks you to focus on *one* of these. Look back at the key knowledge and key skills on page 121 to ensure you are clear on the three aspects of your chosen health promotion area.
- The second half of this chapter discusses initiatives to improve Indigenous health and wellbeing in Australia. You will need to be able to evaluate them.

Smoking

- Smoking is responsible for 9% of the total burden of disease and injury. It causes respiratory illness, cancers, stroke, renal disease, eye disease and diabetes. It also affects the skin, hair and teeth.
- Quit is the major health promotion program that targets the effects of smoking. Quit Victoria works with the Cancer Council Victoria, Heart Foundation of Australia (Victorian Division), VicHealth and Department of Health and Human Services.
- Successes of the Quit program include banning tobacco advertising; banning smoking in public spaces; plain packaging; and Quitline.

Road safety

- Road accidents are the ninth-leading cause of death globally.
- Males and country road users are more likely to die on Victorian roads than other population groups. Drivers are the most likely road users to die; cyclists and pedestrians are most likely to be injured.
- Causes of road accidents include speed, fatigue, distractions (such as mobile phones), and quality of roads and vehicles.
- Key risk factors have been reduced by enforcing slower speed, safety measures (seat belts, bike helmets); safer roads and vehicles; and improving post-crash care.
- TAC works with Victoria Police, VicRoads, Justice Department, Department of Health and Human Services to reduce road accidents.
- TAC's campaign in Victoria, 'Towards zero', aims for safe roads, safe speed, safe vehicles and safe people.

Skin cancer

- Melanoma is the deadliest form of skin cancer. Basal cell and squamous cell carcinomas also require treatment. Males, fair-skinned people and city dwellers are most at risk.
- SunSmart is the largest health promotion program in Australia.
- In Victoria SunSmart works with the Cancer Council and has key partnerships with VicHealth at primary schools, early learning centres, secondary schools, workplaces, local councils and sporting clubs.
- SunSmart addresses all elements of the Ottawa Charter.

Indigenous health and wellbeing

- 'Closing the Gap' is an Australian Government initiative to achieve health equality for Indigenous Australians by 2033 by focusing on six focus areas: health, housing, early childhood, education, economic participation and remote service delivery.
- Successes include more children monitored for growth and development milestones, more people using Medicare services and PBS, improved housing options, reduced child mortality, reduced smoking (which should increase life expectancy and reduce rates of chronic disease).
- VACCHO is the peak representative health body for Aboriginals and Torres Strait Islanders in Victoria. It is involved in the delivery of a number of health promotion programs. Food share was developed in conjunction with Secondbite to promote food security.
- Life! Road to Good Health is the Indigenous diabetes program.
- Fitzroy Stars Football and Netball Club is an Indigenous community sports club. It has partnerships with VicHealth, Oxfam and the local council.

Exam-style question with sample answer

The *key skills* required for all the health promotion programs are to *apply* the action areas of the Ottawa Charter and *evaluate* initiatives in terms of their capacity to improve Indigenous health and wellbeing.

The *knowledge* required to answer the questions includes a strong understanding of the Ottawa Charter and the ability to use it to:

- examine a range of health promotion programs that have made gains in population health in Australia
- reflect on Indigenous health and wellbeing programs.

Read the following information about Kidsafe (the Child Accident Prevention Foundation of Australia).

- Kidsafe is a non-government, not-for-profit charitable organisation established in 1979.
- 'The main goal of Kidsafe has been to reduce the number and severity of unintentional injuries to children [under the age of 15].'
- 'In the 20 years of Kidsafe the number of children killed as a result of injuries has halved.'
- The Victorian branch of Kidsafe is involved with developing relationships with other key organisations to provide injury prevention programs, media campaigns and educational resources.
- Kidsafe Victoria focuses on four key areas: home safety, road safety, water safety and safe play.

The following information is a brief highlight of the work completed by Kidsafe in each of these key areas.

- 1** Home safety – in 1991 only 1% of homes had installed a fire alarm. At this time, Kidsafe partnered with fire authorities to develop a media campaign and promote the benefits of working smoke alarms. By 1998 the proportion of homes fitted with smoke alarms had increased to 84%. It is now mandated by law that all new homes are to be fitted with a working smoke alarm.
- 2** Road safety – the correct fitting of car restraints makes a huge difference to the potential injuries sustained by children in car accidents (Kidsafe Victoria Inc 2016).

Kidsafe Victoria received funding through the Victorian Community Road Safety Partnership Program (VCRSPP) to provide subsidised child restraint fitting education sessions to staff of community organisations in 2014/15.

The two-hour education sessions consist of a theory component – which provides information and advice on the Victorian child restraint road rules, the different types of child restraints and the process of choosing a suitable child restraint – and a practical session – which provides staff with hands on experience at installing various types of child restraints and booster seats.

- 3** Water safety – strong partnerships exist between Kidsafe, the Victorian Government and the Royal Lifesaving Society of Australia to promote and educate the public on safe use of water environments for children under the age of 15. The 2016 campaign was 'Closing the gate on backyard pool drowning', which focused on checking and repairing pool and spa fences in private homes. It is due to the work of Kidsafe that pool and spa fences are mandatory in Victoria.

- 4 Safe play – Kidsafe provides brochures on creating safe play spaces, for parents and other providers of play areas for children. It also works with local councils to review and plan play spaces for children, to reduce the risk of injury through playing in a particular space.

Question

Apply the action areas of the Ottawa Charter (listed below) to the Kidsafe organisation. Use specific examples from the information above to support your answer. **(10 marks)**

- Build healthy public policy
- Create supportive environments
- Strengthen community action
- Develop personal skills
- Reorient health services

Sample answer (2 marks for each part)

Build healthy public policy: Kidsafe has lobbied government with other partners to introduce laws that ensure children are safe from injuries. These include laws about pool fencing, properly fitted child restraints and properly installed smoke alarms.

Create supportive environments: Kidsafe works with local councils to provide safe and engaging play spaces designed to ensure the risk of injuries is reduced when children use the equipment.

Strengthen community action: Providing education sessions to maternal health care centres regarding the installation of child restraints supports the workers at the centre in educating the parents they meet and keeps children safe when travelling in motor vehicles.

Develop personal skills: Fitted child restraints sessions are held in local council facilities to support parents to look after children when travelling in a vehicle.

Reorient health services: Kidsafe has key partnerships with the Victorian Government, firefighting services and the Royal Australian Lifesaving Society. They work together to educate and promote health messages that support people in making changes that will reduce the likelihood of children under the age of 15 sustaining an injury.

Important points:

- Use appropriate examples from the case study to highlight the action area of the Ottawa Charter.
- Work on 2–3 well-structured sentences for 2 marks per action area.

Questions for you to practise

- 1 Outline a health promotion program you have studied that has improved the health and wellbeing of Indigenous Australians. **(2 marks)**
- 2 Use the Ottawa Charter for Health Promotion to evaluate how effective this health promotion program has been in improving the health and wellbeing of Indigenous Australians. **(5 marks)**

Chapter 6: Healthy eating in Australia

Key knowledge

- 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 skill

- draw conclusions as to why dietary improvements are difficult to achieve in Australia

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Key terms

- dental caries
- modifiable risk factors
- nutrition

In this chapter

Eating patterns in Australia	page 152
Initiatives for healthy eating.....	page 154
Australian Dietary Guidelines.....	page 154
Nutrition Australia.....	page 158
Challenges in bringing about dietary change	page 165
Access and equity	page 166

Information, education and marketing	page 167
Income/price	page 170
Health status, culture, knowledge and belief	page 171
Food preparation setting.....	page 171

Eating patterns in Australia

nutrition the intake of food, considered in relation to the body's dietary needs

Nutrition is important! A well-balanced diet provides our bodies with the essential nutrients they require to function properly, allowing us to live. Australians generally experience good health and consume nutritious foods. However, the quantity of food we eat and the balance of food types can be improved. Over 2011–13, the largest and most comprehensive health survey to date was conducted in Australia, with data collected from over 12 000 participants. The survey had four components: the National Health Survey, the National Aboriginal and Torres Strait Islander Health Survey, a National Nutrition and Physical Activity Survey, and a National Health Measures Survey. The data and information from the nutrition component was the first time in 15 years that information had been collected for adults and children aged two years and over.

The nutrition survey produced data about food consumption and behaviour by Australians. It was found that more foods and fluids represented by the five food groups that are high in nutrients and linked to good health outcomes were consumed than discretionary items that people are advised to consume in small amounts (Figure 6.1). However, this data is slightly misleading, because although most people included the five food groups in their diet, they did not meet the minimum number of servings for any of them, such as fruit and vegetables (Figure 6.2), as suggested by the Australian Dietary Guidelines (pages 154–7).

Selected major food groups

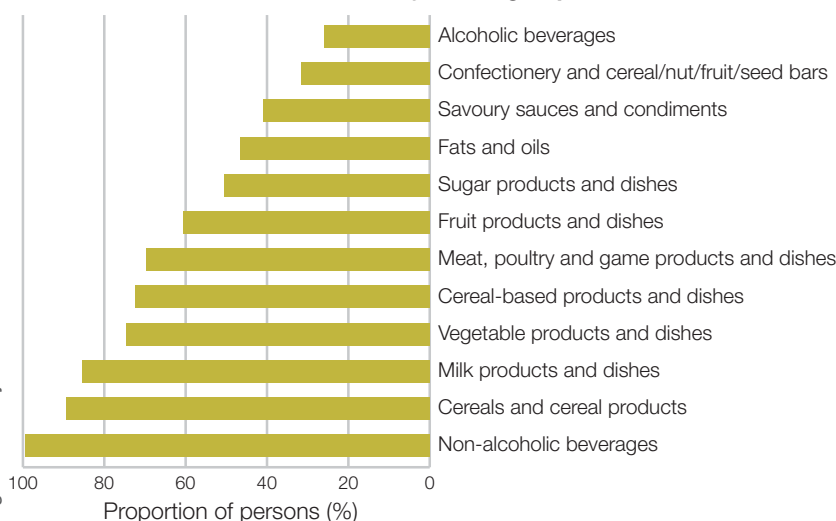
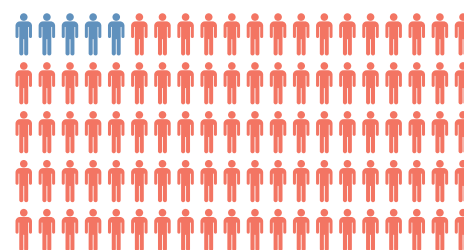


Figure 6.1 Consumption of selected major food groups by people aged 2+ years, 2011–2012



Fruit and vegetables

5 eat the recommended servings

95 do not eat the recommended servings

Figure 6.2 Proportion of adults in Australia who eat the recommended servings of fruit and vegetables

The five food groups

The five food groups provide our bodies with energy, protein, essential fats, vitamins and minerals. Lack of these nutrients in a diet is considered a risk factor in major causes of death, illness and disability. Poor diet is a risk factor for many conditions such as coronary heart disease, stroke, hypertension, atherosclerosis, obesity, some forms of cancer, type 2 diabetes, osteoporosis, dental caries, gallbladder disease,

dementia and nutritional anaemias. A poor diet alone is a risk factor for chronic disease, but the picture is more complex than that. The more **modifiable risk factor** behaviours a person displays (Figure 6.3), the higher their risk of developing chronic diseases such as the ones just listed. In Figure 6.3, a combination of inactivity, obesity and inadequate fruit and vegetable consumption is represented by one-third of the 18-and-over population. These individuals are at greater risk of chronic disease than those who have just one of the modifiable risk factors.

modifiable risk factor

a behaviour or group of behaviours that a person engages in that puts them at risk of illness, disease or death, and can be eliminated or reduced through behavioural or environmental changes

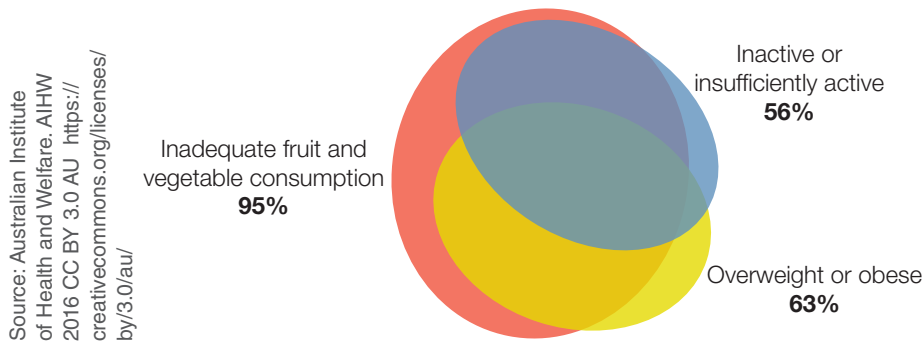


Figure 6.3 Contribution of multiple modifiable risk factors to chronic disease in Australia

Obesity

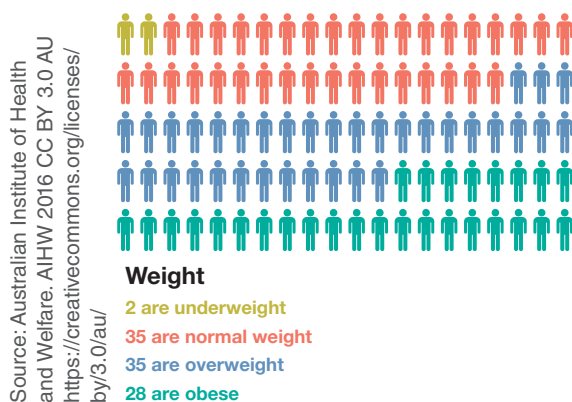


Figure 6.4 Weight proportions of adults in Australia, per 100 people

Obesity is both a chronic condition and a risk factor for the other chronic conditions mentioned earlier. Being overweight or obese is predominantly caused when energy expenditure is less than energy intake, but more importantly when the energy consumed is sourced from poor dietary choices that include food and drink high in saturated fat and sugars. In Australia 63% of adults are overweight or obese (Figure 6.4). This is a concern, because being overweight and obese contributes to all conditions in the top five risk factors for burden of disease in Australia. Diseases that

overweight or obese people are at risk of include those listed in Table 6.1 (page 154). This burden of disease affects the overall health and wellbeing of Australians.

Resulting from poor diet choices and the individual becoming overweight or obese, conditions such as cardiovascular disease (CVD), type 2 diabetes, musculoskeletal conditions, some cancers and mental health conditions not only affect the health and wellbeing of the individual but also place a heavy burden on Australia's health care system and cost governments billions of dollars. Cardiovascular conditions alone accounted for \$5 billion being spent on hospital care in 2012–13. It is for this reason that the Australian Government has played a significant role in improving Australia's health and wellbeing, by addressing the eating patterns of Australians. The Australian Dietary Guidelines and Nutrition Australia provide a range of services aimed at addressing people's food behaviours and supporting individuals in developing improved, nutrient-dense diets.

Table 6.1 Summary of conditions an individual is at risk of due to obesity

Condition	Mortality
Coronary heart disease	19 800
Stroke	8 100
Cancer (combined)	44 100
Type 2 diabetes	15 100
	Morbidity
Dental caries	55% of 6-year-olds have decay in baby teeth 48% of 12-year-olds have decay in adult teeth
Dementia	90 000 diagnosed cases
Obesity	4.9 million diagnosed cases

Initiatives for healthy eating

Australian Dietary Guidelines

The Australian Dietary Guidelines (ADG) and the Australian Guide to Healthy Eating (AGHE) are based on current scientific evidence about the amounts and types of food and drink that promote good health and wellbeing for Australians. The ADG (which includes the AGHE) are part of the Australian Government's Eat for Health Program. They are a practical tool, providing suggestions about foods, serving sizes and alternatives for certain diets, including sample diets, and information for various stages of life. Following the guidelines will help individuals make good food choices and ensure that people consume essential nutrients that can reduce the risk of chronic diseases. The AGHE visually represents the information provided by guidelines 2 and 3 in the ADG; it communicates information about good food choices in an accessible format.

There are five guidelines, and each is presented below.

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.

- 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.

Source: National Health and Medical Research Council
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AUSTRALIAN GUIDE TO HEALTHY EATING



Figure 6.5 Australian Guide to Healthy Eating

Tips for a healthy weight

- Enjoy a healthy breakfast.
- Eat slowly and savour every mouthful.
- Listen to your body. Stop when, or even before, you feel full.

- Don't shop when you're hungry – and use a list.
- Plan healthy, quick and easy meals for busy days.
- Make meal times special occasions for the whole family. And turn off the TV!
- When eating out, make healthy choices. For example, choose grilled or steamed foods and avoid creamy sauces.
- Choose water instead of soft drink, cordial, fruit drinks, vitamin waters, energy drinks, sports drinks or alcoholic drinks.
- When hungry, fill up with fruit and vegetables.
- Don't spend a long time sitting down. Turn off the computer!
- Be physically active every day in as many ways as you can. Go for a walk, play active games, go for a ride, start a vegetable garden. Get the kids involved too.
- Find a friend or family member to help support you to eat healthily and be active.

Source: National Health and Medical Research Council CC BY 4.0 International
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GUIDELINE 2

Enjoy a wide variety of nutritious foods from these five food groups every day:

- Plenty of vegetables, including different types and colours, and legumes/beans
- Fruit
- Grain (cereals) foods, mostly wholegrain and/or high cereal fibre varieties, such as bread, 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 alternatives, mostly reduced fat [reduced-fat milks are not suitable for children under 2 years]
- And drink plenty of water.

Source: National Health and Medical Research Council CC BY 4.0 International
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Guideline 2 encourages people to eat a wide variety of foods, to gain nutrients from a range of food sources in the five food groups. Eating a variety of foods allows people to not only eat for function but also enjoy their food and not become bored with their food choices. The AGHE (Figure 6.5) is part of Guideline 2, as it visually represents the five food groups, with the plate full of food choices from each group. The relative serving size of each food group is represented by the amount of space the wedge takes up on the plate, in proportion to the other food groups. The visual tool also promotes water as the drink of choice to be consumed, with discretionary foods kept to a minimum.

GUIDELINE 3

Limit intake of foods containing saturated fat, added salt, added sugars and alcohol.

- 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.
 - Replace high fat foods which contain predominantly saturated fats such as butter, cream, cooking margarine, coconut and palm oil with foods which 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 2 years.

- b. Limit intake of foods and drinks containing added salt.
 - Read labels to choose lower sodium options among similar foods.
 - Do not add salt to foods in cooking or at the table.
- c. Limit intake of foods and drinks containing added sugars such as confectionary, sugar-sweetened soft drinks and cordials, fruit drinks, vitamin waters, energy and sports drinks.
- 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.

Source: National Health and Medical Research Council CC BY 4.0 International
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Guideline 3 addresses foods that are high in energy and low in nutritional value, usually referred to as discretionary food choices. It is important to acknowledge that these foods are on the market and easily accessible. A health promotion strategy such as the Guidelines can educate people and help them understand that better choices are available, and thereby protect individuals from diseases that they might be at risk of if they consume foods from this group regularly.

GUIDELINE 4

Encourage, support and promote breastfeeding.

Source: National Health and Medical Research Council CC BY 4.0 International
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It is important for a baby's growth and development that they feed on breastmilk exclusively for the first six months of their life, if possible. Research has found that breastmilk can reduce the risk of high blood pressure in childhood and may reduce the risk of becoming obese in childhood, adolescence and adulthood, thereby reducing the potential risk of certain chronic diseases.

GUIDELINE 5

Care for your food; prepare and store it safely.

Source: National Health and Medical Research Council CC BY 4.0 International
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Food not prepared and stored safely has the potential to poison, and so this Guideline has been included to ensure that people enjoy their food without adverse health consequences and receive the nutrition their body requires.

Review and reflect

Complete the following quiz and then answer the questions.

Quiz: are you eating for health?

Take this quick quiz for adults to find out the answer – be honest! Give yourself one point for each box you tick, if you:

- ☐ Eat at least 5 serves of vegetables every day. A serve is $\frac{1}{2}$ cup cooked vegetables (hot chips don't count!) or 1 cup of salad.
- ☐ Eat at least 2 serves of fruit every day. A serve is 1 medium piece or 2 small pieces of fresh fruit, or one cup of chopped or canned fruit (no added sugar).





- Have at least 2 serves of reduced fat milk, yoghurt, cheese or alternatives every day (for example, 1 slice of reduced fat cheese, a small tub of reduced fat yoghurt (preferably no added sugar), 1 cup of milk or 1 cup of soy milk with added calcium).
- Eat mostly wholegrain cereals (such as high fibre breakfast cereal and wholemeal bread).
- Eat at least a small serve of lean meat or chicken (fat and/or skin cut off) or fish, or eggs or some nuts or legumes (for example, lentils, chickpeas, beans such as kidney beans or baked beans) every day.
- Drink plenty of water every day and limit drinks with added sugars, such as soft drinks, cordial, energy drinks and sports drinks.
- Limit takeaway foods such as pizzas, commercial burgers, hot chips or other deep fried foods to once a week or less.
- Limit store-bought cakes, muffins, pastries, pies and biscuits to once a week or less.
- Limit salty foods like processed meats (for example, salami and bacon), crisps and salty snacks to once a week or less, and avoid adding salt during cooking or at the table.
- Drink no more than 2 standard drinks containing alcohol on any one day.

How did you rate?

8–10 points Congratulations, you're already a pretty healthy eater!

6–8 points Keep going, you're nearly there!

4–6 points There's plenty of room for improvement.

Less than 4 It's time for a serious overhaul.

...

Poor eating habits are sometimes hard to break. For adults, it's not too late to make changes if poor eating habits have crept up, but it's important to keep changes realistic.

Source: National Health and Medical Research Council
CC BY 4.0 International
www.creativecommons.org.au

1 Use the Dietary Guidelines and your quiz results to discuss one positive in your diet and one area that needs improvement.

2 Use the Australian Guide to Healthy Eating to identify specific foods you could incorporate in your diet in response to your quiz results, and justify your selection.

Nutrition Australia

Nutrition Australia is a non-government, not-for-profit, community-based organisation that aims to 'promote optimal health for all Australians by encouraging food variety and physical activity' at a national level (Nutrition Australia n/d). It addresses Australians' eating patterns and behaviour by acting as a source of scientific information on key nutrition issues, delivering key messages on nutrition to policy makers, media, educators, the food industry and consumers, providing consultants to key stakeholders, and encouraging innovation in nutritional knowledge.

Nutrition Australia is a national body responsible for policies and national programs. It consists of state divisions that work independently in their respective states or territories, delivering national programs and policies while also responding to local needs. The Nutrition Australia Victoria (South Australia and Tasmania) division has its own vision and mission statements:

Vision: Healthy eating for all Australians.

Mission: Inspiring healthy eating. We do this through community-based education and the provision of credible, current and practical nutrition information

www.nutritionaustralia.org

To deliver on its vision and mission, Nutrition Australia has three priorities: healthy eating for all, supportive food environments, and food literacy for all.

Healthy eating for all

Nutrition Australia promotes the ADG through its food selection tool, the Healthy Eating Pyramid (Figure 6.6). This supports individuals in meeting their nutritional needs when consuming food and drink and in forming a healthy relationship with food and drink consumption. It is acknowledged by Nutrition Australia that food plays a social and cultural role in people's lives and that this needs to be addressed in its various services, to ensure that all people are eating healthily.

Supportive food environments

Nutrition Australia works with key stakeholders to develop supportive food environments. This requires an understanding of what foods are available, their pricing and the marketing in certain environments. Nutrition Australia supports organisations in making changes to these elements at a population level, hopefully leading to changes in food selection behaviour at an individual level.

Food literacy for all

To source, prepare and cook nutritious foods, individuals require knowledge and skills. To empower individuals to develop their knowledge and skills, Nutrition Australia provides programs and educates people through various forums. It acknowledges that developing food literacy is a complex task, as food knowledge is influenced by the home, culture, education, media, marketing and the internet, in addition to physical factors such as access to food and resources to prepare food. Nutrition Australia works towards ensuring that individuals know and understand the place that food has in communities and cultures, so they can make appropriate changes to their diet for a healthy and balanced lifestyle.

The Healthy Eating Pyramid

One of the most identifiable services provided by Nutrition Australia is the Healthy Eating Pyramid (Figure 6.6). This food selection tool is based on the latest research. Its advice is consistent with the Australian Dietary Guidelines. In 2015 the Pyramid was updated, in line with updates made to the Australian Dietary Guidelines in 2013.

The Healthy Eating Pyramid:

- encourages Australians to enjoy a variety of foods from every food group every day
- is a visual tool enabling Australians to identify the types and proportions of food required for a balanced diet
- shows the five food groups, including an added 'healthy fats' group, arranged in a way that represents how much each group should contribute, for a balanced daily diet
- is based on recommended food intake for 19–50 year olds.

The pyramid has three layers.

Foundation layer

The foundation layer includes the two bottom levels of the pyramid – the three plant-based food groups: vegetables and legumes, fruits and grains. This is the largest section of the pyramid and represents foods that should make up 70%

Learning tip

You should be able to discuss the strengths and weaknesses of both the Healthy Eating Pyramid and the Australian Guide to Healthy Eating as initiatives that promote healthy eating.



Figure 6.6 The Healthy Eating Pyramid

of our daily diet. The main nutrients of this layer are carbohydrates and fibre. It advises that older children, teens and adults should aim for two serves of fruit and five serves of vegetables each day. It depicts wholegrains (brown rice, oats and quinoa) and wholemeal varieties of bread, pasta and cereal, to encourage people to select these types of foods when developing or preparing meals.

Middle layer

The middle layer includes the milk, yoghurt, cheese and alternatives food group and the lean meat, poultry, fish, eggs, nuts, seeds and legumes food group. Calcium and protein are the main nutrients of the milk, yoghurt, cheese and alternatives group. The lean meat, poultry, fish, eggs, nuts, seed and legumes food group is protein-rich. Specific foods in this group can also be rich sources of iodine, zinc, iron and vitamin B₁₂. People are advised to choose reduced-fat options in the milk, yoghurt, cheese and alternatives group, to avoid consuming excess kilojoules and prevent excess weight gain.

Top layer

The top layer contains the added group of healthy fats. This layer is important, as a small amount of fats is required each day to support heart health and brain function. It is suggested that, instead of foods and products that can contain saturated fat, people choose plant-sourced polyunsaturated and monounsaturated fats, such as extra virgin olive oil, or nut or seed oil, or consume healthy fats in foods that contain them naturally, such as avocados, nuts, seeds and fish.

Table 6.2 Summary of the Healthy Eating Pyramid

Layer	Food group	Main form of nutrients
Foundation	Vegetables and legumes Fruits Grains	Carbohydrates/fibre Carbohydrates/fibre Carbohydrates/fibre
Middle	Milk, yoghurt, cheese and alternatives Lean meat, poultry, fish, egg, nuts, seeds, legumes	Calcium, protein Protein
Top	Healthy fats	Monounsaturated fat Polyunsaturated fat

The Healthy Eating Pyramid also provides the following messages:

- *enjoy herbs and spices* – herbs and spices are shown in the pyramid to encourage people to add them to food to flavour, and reduce the reliance on salt for seasoning food
- *choose water* – a big green tick is shown next to a cup of water. Water should be the main source of drinks in an individual's diet, as water supports body function and keeps you hydrated. Soft drink, sports and energy drinks should be avoided, as they have added sugar
- *limit salt and added sugar* – salt and sugar should be avoided when cooking, in processed and packaged foods, and in drinks. Salt occurs naturally in foods and this amount will usually satisfy the body's needs. Consuming added salt puts the body at risk of certain dietary diseases. Likewise, sugar occurs naturally in foods, and consuming fruit will satisfy the body's requirements. Consuming excess sugar puts the body at risk of excess kilojoules and therefore weight gain, and can also cause **dental caries**.

dental caries damage to teeth resulting from softening of the enamel, leading to cavities and decay

National Nutrition Week

Nutrition Australia's National Nutrition Week is in October each year. The week coincides with World Food Day, and its purpose is to raise awareness of food and its impact on health and to promote healthy eating in the community. An organisation that signs up to participate in the week is provided with a promotional kit, along with recipes and other resources developed specially for the week.

Health Eating Advisory Service

The Healthy Eating Advisory Service is delivered by the Nutrition Australia Victoria division, funded by the Victorian Government. Experienced dietitians and nutritionists provide information and resources to support schools, early learning centres, workplaces and hospital food outlets in providing healthy food options. It helps the organisation to:

- take steps to make healthy changes in the organisation
- understand how to implement government policies and guidelines
- train cooks, chefs, food service and other key staff
- discover healthy recipes, food ideas and other helpful resources
- provide healthy menus and products.



Further information about the Healthy Eating Advisory Service can be found at its website. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

Figure 6.7 Healthy Eating Advisory Service web page

This support is provided through their website, phone advice and face-to-face consultations. The Service assists schools by helping with planning menus, promoting healthy food choices, reviewing and improving vending machine options, and training staff. Training can be through online modules or face-to-face, and includes topics such as planning healthy menu options, and the food and drink categories of green, amber and red foods.

Food and drink assessment

Nutrition Australia also provides product, menu and recipe assessment via its Victorian Government-funded Healthy Eating Advisory Service. This service assesses the suitability of foods and drinks to be provided in a range of settings, such as schools and early learning childhood centres, to promote healthy eating. It also assesses menus and vending machines in workplaces, hospitals, and sport and recreation settings.

The Australian Dietary Guidelines and the services provided by Nutrition Australia support food providers, individuals and population groups in improving their dietary behaviour. No single initiative or strategy on its own can achieve this for everyone who needs it. Nutrition Australia has strong partnerships with government and non-government bodies to ensure that healthy eating behaviours are supported in Australia. It is important for organisations, policy makers and health promoters such as the Australian Government and Nutrition Australia to understand the challenges faced by individuals who are trying to improve their diet, to ensure that initiatives provided to help with this are purposeful and accessible. The next section of this chapter looks at some of the challenges individuals face when trying to improve their diet.

Victorian Healthy Eating Enterprise fruit and vegetable network

Nutrition Australia's Victoria Division coordinates the Victorian Healthy Eating Enterprise (VHEE) fruit and vegetable network, a group of organisations such as government departments (state and local), industry, health education providers and community organisations that are working towards improving the supply and consumption of fruit and vegetables in Victoria. The network meets four times a year to share information and resources, represent and promote each other's initiatives within their own networks, and collaborate on initiatives to ensure a consistent and collaborative approach to improving the consumption of fruit and vegetables in Victoria.

Review and reflect

- 1 Describe the Healthy Eating Pyramid.
- 2 a Using the table below as a guide, record the food and drink you consume in a 24-hour period.



Food/drink consumed	Layer of the pyramid	Nutrients provided to the body from the food/drink	Food and drink that could replace current food/drink choices according to the pyramid



- > b Reflect on your food choices and outline changes you would make to your diet, based on the information provided in the Healthy Eating Pyramid.
- c Complete the following table by providing two strengths and two limitations of the Healthy Eating Pyramid compared with the Australian Guide to Healthy Eating in promoting healthy eating to Australians.

	Strengths	Limitations
Australian Guide to Healthy Eating		
Healthy Eating Pyramid		

Case Study

Buckley Park College

Read the following case study, then answer the questions that follow.

Buckley Park College has been able to maintain a financially viable canteen since working with the Healthy Eating Advisory Service to implement the Victorian School Canteens and Other School Food Services Policy.

Background

Buckley Park College, with a population of 900 students, began its quest to promote healthy eating to its community in 2013. The school successfully achieved a menu which meets the Victoria School Canteens and Other School Food Services Policy that same year. [This case study describes] the changes Buckley Park College has made to achieve a healthier menu.

Steps to a successful healthy canteen

Successful healthy eating changes were achieved based on a whole of school approach which included:

- Developing a nutrition committee comprised of six students and staff members to lead the changes
- Updating the school nutrition policy and promoting it through the school's website and handbooks to ensure the community was aware of the healthy eating priorities and changes to the canteen are supported and long term.
- Surveying many students, families, volunteer parents and teachers to see what new food and drinks trialed they preferred. This resulted in a high uptake of the new healthier menu items.

Healthy (and delicious) menu changes

Since starting the process, Buckley Park College has incorporated many changes into its menu that were desired and supported by the 700 students who attend the canteen daily!

Popular new foods on the canteen menu include:

- Fresh fruit, including watermelon
- Carrot with Tzatziki dip and hummus dip
- Sushi (which is delivered twice a week)

- Yoghurt with berries
- Poached chicken and salad sandwiches

The financial impact

Since 2013, Buckley Park College has found their canteen has not undergone any negative financial impact by implementing and supporting a healthy canteen menu. If anything, sales have slowly increased. Students haven't noticed many of the changes, as only minimal foods were removed from the menu and instead healthier choices and more variety were included so the students have been more willing to go and purchase from the canteen.

Ongoing strategies for success

- Specials or healthier items are promoted on the canteen blackboard or through pamphlets.
- Year 10 food technology classes are involved in new menu item development and trialling.
- Small and regular healthy changes continue to be made to the menu.
- Student involvement in the canteen continues to be encouraged which ensures they feel involved and have some control over the changes.
- Preparing and cutting up food in advance helps to make it available in a short time-frame.
- Being familiar with weekly special catalogues from the supermarket/distributor ensures food sold is cost effective.

Extract from Healthy Eating Advisory Service 2016, School Case Study, Buckley Park College, http://heas.health.vic.gov.au/sites/default/files/SCH-case-study-Buckley-Park-2016_0.pdf

Case study questions

- 1 Describe how the food selection now available at Buckley Park Secondary College reflects the Australian Guide to Healthy Eating.
- 2 Identify four challenges in bringing about the dietary changes in the Buckley Park case study.
- 3 Evaluate how these four challenges have been addressed at Buckley Park, to support students in improving their dietary behaviours.

Learning tip

When answering questions in SACs and exams, if you are provided with stimulus material such as a case study, include information from the case study in your answer, to demonstrate that you understand the case study and how it relates to the information you have been learning.

Challenges in bringing about dietary change

Food selection by individuals is a complex process. To assist people to make better food choices, a multifaceted approach is necessary. Figure 6.8 identifies the major influences on how Australians select food. Australians spend about one-fifth of their total household budget on food and beverages. Because food and beverage consumption is closely linked to individual and population health outcomes, it is important to understand the factors that influence how wisely Australians purchase and consume food and beverages.

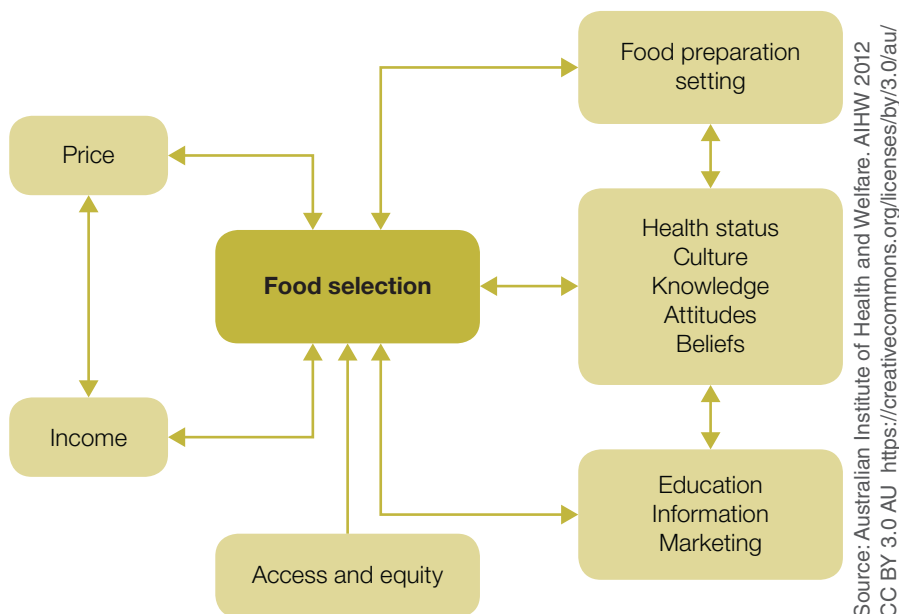


Figure 6.8 Major influences on food selection

The major influences on food selection are:

- access and equity
- education, information and marketing
- income/price
- health status, culture, knowledge and belief
- food preparation setting.

Access and equity

People's access to food is influenced by factors including their geographical location and that of their food supplies, and the variety of food supplies in a particular location, such as supermarkets, butchers, fruit and vegetable stores. In Australia, food prices have increased, particularly for healthy foods in regional and remote areas, which affects both access and equity in relation to food supply. The increase in food prices is due to supply costs, the cost of transporting food, the size and characteristics of demand, and local competition. In addition to food having to be transported to remote locations, individuals need to get to their supermarkets or food stores to buy the food, while it still has a good shelf life. If fresh food cannot reach the customer, it is not financially viable for the food supplier to continue to stock these products, and so they will reduce the variety of food products on their shelves, which in turn affects people's food selection and therefore nutrient intake.

Food security

Food security is another factor that affects individuals' food choices and consumption in Australia. Food security has four dimensions:

- *availability* – consistently available quantities of food
- *access* – access to resources such as income, geographical location of the person in relation to their food supply, and illness, can all affect the individual's ability to obtain appropriate food for a nutritious diet. Reasons for lack of access can include poverty, remoteness, limited physical access to food, social isolation, frailness and chronic illness
- *use* – an individual's ability to prepare food safely is affected by their knowledge of nutrition and experience in using food preparation equipment and facilities, as well as their level of education and financial knowledge, and access to food preparation equipment
- *stability* – consistent access to and availability of a food supply over time.

If one of these dimensions is absent, an individual or population experiences food insecurity. Food security can be seen as a continuum (Figure 6.9), with secure continual access to foods at one end, and at the other end a food supply that is insufficient to meet the person's nutritional requirements, resulting in hunger. Some people are always at the secure end of the continuum, but others may move along it because of access and/or equity issues, depending on availability, access, use and stability of their food supply.



Figure 6.9 Continuum of food security

Availability

Food availability in Australia is generally not a problem, as there is sufficient food available for its population. Vulnerable groups such as regional and remote communities, the socially disadvantaged, and Aboriginal and Torres Strait Islander people are more likely to experience equity issues and suffer from food insecurity, which can reduce their ability to access food in a range of situations. Here are some examples of food security issues in Australia.

- People who live in advantaged neighbourhoods have a greater number of supermarkets, and fruit and vegetables stores within 2 km of their home than people in disadvantaged neighbourhoods (Ball et al. 2009, cited in AIHW 2012).
- People in metropolitan areas travel less than 5 km to shop, while those in regional areas travel 10 km or more.
- Migrants who transfer from a traditional diet have limited knowledge of the local equivalent food options available to replace the foods they no longer have access to. This, combined with language barriers and financial reasons, can cause food insecurity due to access and use issues.
- Access for people with mobility issues or chronic illnesses can also be problematic, as meal preparation, shopping for food, and leaving the house to socialise, can leave them vulnerable to insecurity of food supply.
- Economic factors such as loss of employment, insecure employment and government benefit payment schedules can affect the stability of an individual's food supply from week to week.

Information, education and marketing

Information

In Australia, packaged food must be labelled in a way that enables consumers to make safe and informed choices. Food labelling in Australia is regulated by the Food Standards Australian and New Zealand (FSANZ) code. The labelling must be in English, legible and prominent. It must be truthful and include information about the weight of the product and the ingredients, including additives and potential allergens. Date marking and country of origin must also be included (Figure 6.10). Consumers can use the information in food labels to reduce their fat intake, and avoid added salt, sugar or foods that could adversely affect their health, such as allergens. Food labelling can also help consumers check claims about the product, such as 'low fat', by checking the nutrition panel.

Marketing

An individual's food choices can also be influenced by advertising and marketing. As well as the information required by law to be included in food labelling, manufacturers put a lot of effort into the rest of the packaging of the food product to make it desirable, and can include statements about its benefits. The Health Star Rating System (Figure 6.11) is a national program developed by the Australian, state and territory governments along with industry, public health and consumer groups. It was developed to help consumers compare similar foods quickly and easily, with more stars indicating a 'healthier' product. The calculator to determine the Health Star Rating was developed in conjunction with FSANZ, and it is up to manufacturers to correctly use the calculator and attach an accurate Health Star Rating on their product. The Health Star Rating aims to help consumers make healthier food choices at the supermarket, and to overcome

FOOD LABELS

WHAT DO THEY MEAN?

1 Nutrition information panel

This panel shows the average amount of energy, protein, fat, saturated fat, carbohydrate, sugars and sodium in a serve and in 100 g (or 100 ml) of the food. The amount of any other nutrient or substance about which a nutrition content or health claim is made must also be shown (e.g. the amount of calcium must be shown if a claim about calcium is made).

2 Percentage labelling

Food labels must show the percentage of the key or characterising ingredients or components in the food. This allows similar foods to be compared. The characterising ingredient for this strawberry yoghurt is strawberry and the ingredient list states that it contains 7% strawberries.

3 Food identification

To help identify a food, food labels must show:

- the name of the food
- the name and business address in Australia or New Zealand of the supplier of the food
- the lot identification of the food.

The name or description of the food must reflect its true nature (e.g. strawberry yoghurt must contain strawberries). If the yoghurt contained strawberry flavouring rather than real fruit, then the name would need to indicate that it is strawberry-flavoured yoghurt.

4 Information for people with food allergies or intolerances

Some food ingredients and substances can cause severe allergic reactions and must be declared when present in a food. These ingredients are peanuts, tree nuts (e.g. cashews, almonds, and walnuts), crustacea, fish, milk, eggs, sesame, soybeans, and wheat. Sulphites (if added at 10 mg or more per kg of food) and cereals containing gluten (e.g. wheat, oats, barley, rye and spelt) also need to be declared.

5 Date marking

Foods that should be eaten before a certain date for health or safety reasons must be labelled with a use-by date. Otherwise a best-before date is required if the food has a shelf life of less than two years. Although it may be safe to eat a food after its best-before date, it may have lost quality and some nutritional value.

6 Ingredient list

Ingredients must be listed in descending order (by ingoing weight). So if an ingredient is listed near the start of the list, then the food contains more of this ingredient than others lower down the list.

7 Labels must tell the truth

Under Australian and New Zealand consumer laws, labels must not be false, misleading or deceptive. Suppliers must also label foods with accurate weights and measures information. The National Measurement Institute in Australia (www.measurement.gov.au) and the Ministry of Consumer Affairs in New Zealand (www.consumerprotection.govt.nz) ensure that correct weight and measurement information is used on food labels.

8 Food additives

Food additives must be identified in the ingredient list, usually by their class name (e.g. 'thickener' or 'colour') followed by the food additive name or number. A thickener has been used in this yoghurt and is labelled as 'thickener (1442)'. A full list of food additive names and numbers is available from www.foodstandards.gov.au

12 Nutrition and health claims

Nutrition content claims are claims about the content of certain nutrients or substances in a food, (e.g. 'contains calcium'). Health claims refer to a relationship between a food and health. There are rules for when nutrition content or health claims are made on food labels.

11 Country of origin

Australia and New Zealand have different country of origin labelling requirements.

In Australia, the country of origin of packaged and some unpackaged foods must be stated on the label. Read more about country of origin labelling on the Australian Competition and Consumer Commission website at www.accc.gov.au

In New Zealand, country of origin labelling is required on wine only. Further information is available on the Ministry for Primary Industries website at www.foodsafety.govt.nz/industry/sectors/wine/labelling-composition

10 Legibility requirements

Any labelling requirements must be in English, be legible and prominent so as to contrast distinctly with the background on the label.



For more information on food labelling

Visit www.foodstandards.gov.au/foodlabelling

Or follow us on [Facebook](https://www.facebook.com/FoodStandards) www.facebook.com/FoodStandards and [Twitter](https://twitter.com/FSANZnews) [www.twitter.com/FSANZnews](https://twitter.com/FSANZnews)

Disclaimer: This poster has been produced as a guide to consumers only. Industry and enforcement agencies should refer to the Food Standards Code.

Figure 6.10 Example of information that must be included on food packaging in Australia

the challenges some people may face when reading nutrition panels and not understanding the information provided, by rating the product for them. It is hoped that this rating will support people in making healthier food choices.

Food advertising on television and radio is another form of marketing. In Australia this is monitored by the Australian Communications and Media Authority. There are currently no laws banning food advertising during children's screen time. However, manufacturers have been asked to sign on to the Responsible Children's Marketing Initiative. Signatory manufacturers must not advertise to children under age 12 unless they are advertising a nutritious dietary choice. The internet is another form of communication and this is a concern for nutrition policy makers as there are currently no regulations governing food advertising on the internet in Australia. Without regulation of advertising, individuals can be exposed to messages that may be factually incorrect, which impairs their ability to make informed decisions, as the advertising can make certain unhealthy food choices seem desirable and appropriate even though they are not the most nutritious option available.

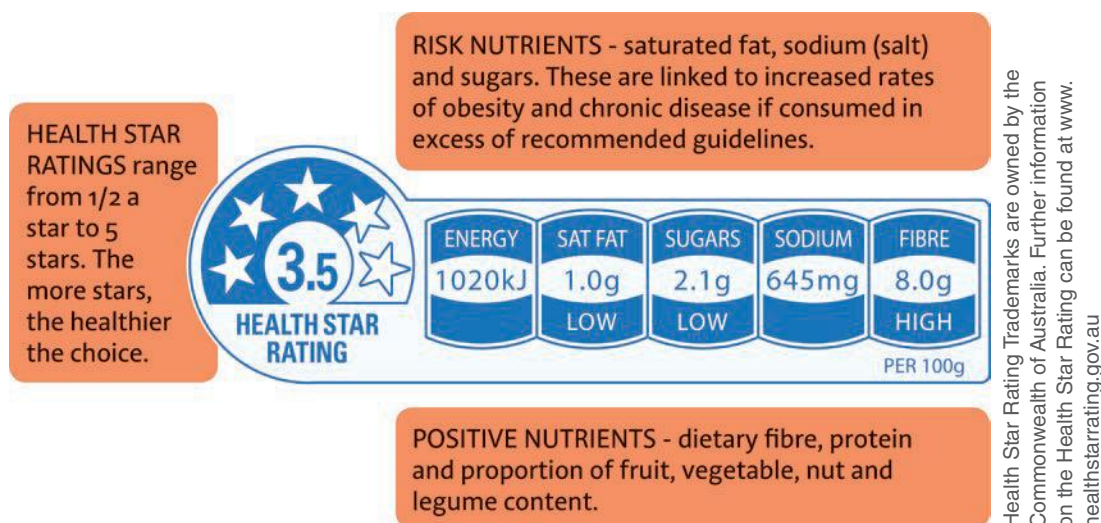


Figure 6.11 The Health Star Rating system

Education

While some Australians have access to sound nutritional knowledge from early in life, others might not, which makes them vulnerable to poor dietary choices. To help Australians gain the knowledge they need to make good food selections, the government has developed guidelines and other initiatives based on scientific fact, delivered in both written and visual form, and suitable for people with a range of educational backgrounds. As discussed earlier in this chapter, the Australian Dietary Guidelines are a major source of sound nutritional information to support individuals in improving their food intake and knowledge, so their nutritional requirements are met, and good health outcomes follow. Other government initiatives that deliver accurate information and improve the food education of Australians include the Healthy Weight website. Non-government organisations that support people by providing nutrition information include Nutrition Australia (discussed earlier) and the National Heart Foundation.



Another important place for individuals to receive education about food is in formal education settings, such as kindergartens/early learning centres, schools and universities. A curriculum that informs students about health and food choices, and develops their skills in food preparation, can have a positive impact on their food choices and improve their knowledge, so they continue to make appropriate and wise food choices into adult life. Policies developed for schools, such as the School Canteens and Other Food Services Policy, aim to ensure that the foods delivered in schools and similar services provide healthy and nutritious options for students. The policy categorises foods as red, amber or green (Figure 6.12), and this forms the basis of menus in school canteens that should enable students to meet their nutritional requirements as outlined in the Australian Dietary Guidelines or the Healthy Eating Pyramid.



Figure 6.12 Food categories as listed in the Schools Canteen and Other School Food Services Policy

Income/price

Income

Employment and a regular income enable an individual to buy food regularly. In *Australia's Food and Nutrition 2012* report (AIHW 2012), it was found that high-income earners spend more on food than low-income earners. In general, low-income earners purchased more fruit and vegetables, meat and seafood than their high-income counterparts. However, the health gains made as a result of these choices are adversely affected as low-income earners purchase more condiments, confectionary, food additives and prepared meals than any other category of income earner (Figure 6.13).

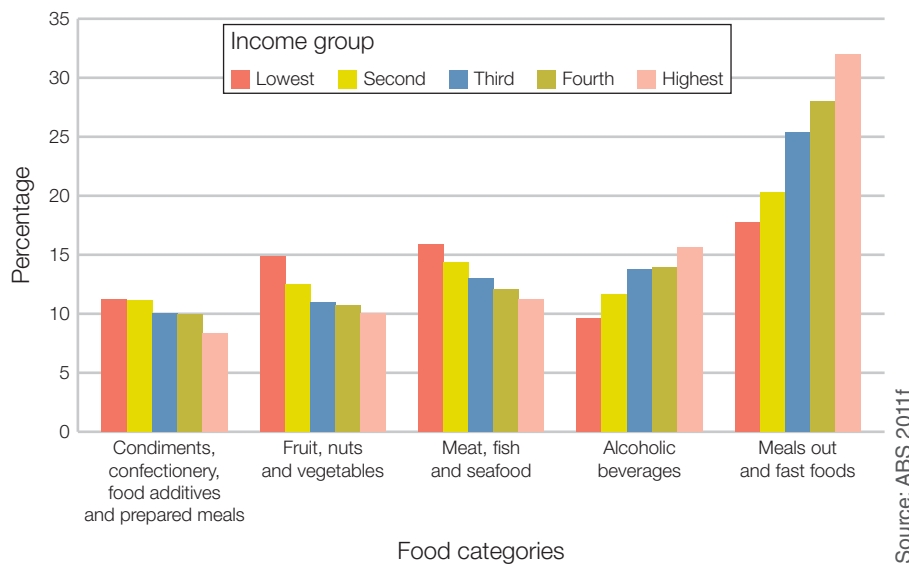


Figure 6.13 Proportion of weekly food expenditure spent by different income groups on the top five food categories

Price

Price also affects food selection, and this can have an adverse impact on health. For example, fruit and vegetables are 30% more expensive in remote locations, which could lead to people altering their food choices and selecting inferior food options. It could also be a reason that those in remote locations in Australia generally experience a lower level of health than their metropolitan counterparts, as their ability to afford nutrient-dense diets for improved health outcomes is limited.

Health status, culture, knowledge and belief

A person's food choices and preference evolve over their life span due to their health status, knowledge, culture and beliefs. Family and peers also play a significant role in shaping a person's food choices and behaviours. Parents generally introduce toddlers to food, and the child's food choices and preferences are usually the same as their parents' for the first few years of life. As the person grows and enters other social settings such as school, these preferences and behaviours can be altered and influenced due to food education at school and the food choices of their peers.

Health status

A person's state of health can affect their food selection and behaviour. It is well publicised and understood that good nutrition contributes to significant health gains. Some individuals may choose healthier options as they have the knowledge and access to nutritious options, and eat for good health. However, other individuals may not have the same knowledge and may consume a diet that doesn't allow for good health, which can lead to overweight and obesity including other chronic health conditions. Diet is important in controlling weight gain, high blood cholesterol, allergies, kidney disease, coeliac disease and type 2 diabetes. The general advice is to eat a well-balanced diet, but some people may have to

make further alterations to experience good health – for example, people with lactose intolerance may need to replace dairy products with soy products.

Culture

Food is a significant part of certain cultural celebrations and observances, and this affects how and when people purchase and consume food. As Australia's population has diversified, with migrants coming from a range of countries, different cuisines have been introduced, which has increased the variety of foods available to Australians to enjoy and explore, for enjoyment as well as nutrition.

Food preparation setting

Settings for preparing food include the home, workplace, schools and restaurants. These settings influence the types of foods people choose to buy and eat. In Australia, home-cooked dinners are generally the most popular setting for food preparation and consumption. The content of home-cooked meals is decided by the occupants, and their choice is affected by factors such as income, knowledge and access. In settings such as schools and workplaces, the availability of foods is determined by resources such as storage facilities. State government school food policies can also have an impact on the food selection offered to individuals in these settings.

Case study

Going soft drink-free in YMCA Victoria aquatic and recreation centres

Read the case study below and then answer the questions.

Introduction

YMCA Victoria, a large not-for-profit community organisation, is Victoria's biggest provider of community recreation, managing local aquatic and recreation centres on behalf of approximately 24 local governments across the state. Collectively these centres attract 17 million visits every year.

In 2014, YMCA Victoria announced a Healthy Food and Beverage Policy to be implemented over 2015–17, across the organisation in kiosks, cafes and catering services attached to 70 aquatic and recreation centres. As part of this policy, YMCA initiated a 'Soft Drink Free Summer' campaign, which aimed to phase out regular soft drinks from all centres by December 2015. This evaluation summary discusses the impact of this campaign, including the extent of implementation, change in customer drink purchases, and potential financial impact at nine YMCA Victoria centres.

The evaluation of YMCA Victoria's changes fills a gap in knowledge about the impact of healthy choice strategies from the perspective of the retailer. It concludes with a number of useful recommendations for organisations planning to undertake similar policy changes to improve population health,

based on the Victorian Government's *Healthy Choices: policy guidelines for sport and recreation centres* (DHHS 2014). The *Healthy Choices: food and drink classification guide* (DHHS 2015) uses a traffic light system to classify food and beverages as 'green' (best choice), 'amber' (choose carefully) or 'red' (limit intake).

The evaluation of YMCA Victoria's campaign was carried out by Deakin University, with funding from VicHealth. For more information and additional resources, visit www.vichealth.vic.gov.au/easychoice.

...

Key findings

Extent of implementation of soft drink removal at nine YMCA Victoria centres

The proportion of available 'red' food and drink items decreased from 71% to 45% across nine centres, while the proportion of 'green' items increased from 13% to 28%, from June 2014 to June 2016.

As part of the overall Healthy Food and Beverage Policy, YMCA Victoria promoted a 'Soft Drink Free Summer' in the summer of 2015/16 with the aim of removing all regular soft drinks by February 2016. All nine centres achieved this campaign goal.

In addition to centres being soft drink free, more healthy choices were placed in the drink fridges. There was a large decrease in the availability of 'red' drinks, as well as a





moderate increase in 'green' drinks, and a small increase in 'amber' drink availability. Across all nine centres the proportion of available 'red' drinks decreased from 62% to 25%, while the proportion of 'green' drinks increased from 32% to 66%. In addition, three centres had met the end of 2016 policy target of 10% or less of fridge space allocated to 'red' drinks.

Financial impact of removal of soft drinks at nine YMCA Victoria centres

Sales analysis showed that while there was a clear decrease in the total beverage dollar sales for 'red' drinks, there was no change in overall beverage dollar sales. *This data suggests that it is possible to remove sugary drinks from venues such as these without an overall decline in drinks dollar sales.* [These analyses do not, however, cover other potential costs or real profit margins from drinks.]

Enablers

The experiences of YMCA Victoria suggest that the following factors have been important in the successful implementation and outcomes of the soft drink free summer:

- Commitment within the YMCA Victoria executive and management teams to improving community health.
- Gradual implementation with initial removal of soft drinks and the aim of removal of 'red' foods in future years.
- Provision of resources by YMCA Victoria Health Promotion and Advocacy Team, including case by case advice, a toolkit, approved product list, planograms for recommended fridge layouts, and promotional material highlighting the sugar content of drinks and rationale for the campaign.
- Support provided by health promotion staff with implementation advice and information.
- Engagement of suppliers to ensure their support of the policy and supply of potential substitutes for the 'red' drinks being removed.

Conclusion

All YMCA Victoria centres analysed in this report were successful in their aims of removing all soft drinks from display

and increasing the availability of more 'green' and 'amber' drink options. To meet their end of 2016 goal of 10% or less of fridge space filled with 'red' drinks, YMCA Victoria will work closely with its centres to reduce the availability of sports drinks.

A large reduction in 'red' drink choices was seen – around 2000 fewer cans of soft drink purchased per month across the nine centres.

Furthermore, the analysis of dollar sales suggests that within the context of the variety of drinks sold across the nine YMCA Victoria centres, customers are willing to switch to healthier drink options with no decrease in overall dollar sales.

As a result of the YMCA Victoria's Healthy Food and Beverage Policy and its recent 'Soft Drink Free Summer' campaign, YMCA Victoria centres have made substantial reductions in the availability of 'red' food and beverages, and should be commended for their initiative and leadership in creating healthy food environments for adults and children. Not only will this campaign have direct benefit to the clients of YMCA Victoria, particularly the children attending the centres, but it is also likely to support the spread of healthier food environments more broadly.

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Case study questions

- 1 **a** Identify two dietary guidelines that are being addressed in the YMCA case study.
- b** Explain each of the guidelines you identified in part **a**.
- 2 **a** List three challenges to healthy food selection the YMCA has considered in the changes to its food and drink offerings at its sports and aquatic venues.
- b** Evaluate the effectiveness of these changes.
- c** Could these food changes lead to improved health outcomes for individuals purchasing food from the YMCA? Use the Healthy Eating Pyramid to justify your answer.



Unit 3, Area of
Study 2 revision
cards

Chapter summary

Eating patterns in Australia

- Australians eat all five food groups, but do not meet the daily minimum serve requirements for health benefits.
- A poor diet (high in fat and sugar) is low in nutrition and puts an individual at risk of a range of chronic conditions: coronary heart disease, stroke, hypertension, atherosclerosis, obesity, some forms of cancer, type 2 diabetes, osteoporosis, dental caries, gallbladder disease, dementia and nutritional anaemias.
- Better diet choices can come from changing both the individual's behaviour and the environment in which they live, work and play.

Australian Dietary Guidelines

- An Australian Government initiative based on scientific knowledge. The guidelines include the Australian Guide to Healthy Eating.
- The five Australian Dietary Guidelines are:
 - 1 To achieve and maintain a healthy weight, be physically active and choose nutritious foods and drinks in amounts that meet your energy needs.
 - 2 Enjoy a wide variety of nutritious foods from these five food groups every day: vegetables and legumes; fruit; grains; lean meat, poultry, fish and legumes; milk and alternatives.
 - 3 Limit intake of foods with saturated fat, added salt and sugars, and alcohol.
 - 4 Encourage, support and promote breastfeeding.
 - 5 Care for your food; prepare and store it safely.

Nutrition Australia

- Nutrition Australia is a non-government, not-for-profit, community-based organisation that supports people to make better food choices. Services and initiatives include: the Healthy Eating Pyramid, National Nutrition Week, Healthy Eating Advisory Service, VHEE fruit and vegetable network.
- The Healthy Eating Pyramid has three layers: foundation, middle and top.

Challenges in bringing about change

- Challenges in bringing about dietary change include:
 - *access* – geographical location and variety of food supplies
 - *equity* – food security (availability, access, use, stability)
 - *education* – e.g. school curriculum and policies
 - *information* – e.g. food labelling and the Australian Dietary Guidelines
 - *marketing* – e.g. Health Star Rating, a national program
 - *employment and income* – affect food choice and availability
 - *price* – food in rural and remote locations can cost up to 30% more
 - *culture and belief* – certain foods and drinks may only be eaten for festivals and celebrations
 - *culture* – has increased the variety of foods available to Australians
 - *food preparation setting* – home is the most common place for meals to be prepared and consumed.

Exam-style questions with sample answers

The *key skills* state that you need to draw conclusions. The *key knowledge* requires you to understand Australian initiatives to promote healthy eating, including the Australian Dietary Guidelines and the work of Nutrition Australia (e.g. its initiative, the Healthy Eating Pyramid, among other initiatives discussed in this chapter).

VCAA HHD Exam 2016

- 1 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. **(4 marks)**

Sample answer

- To achieve and maintain a healthy weight, be physically active and choose amounts of nutritious foods and drinks to meet your energy needs.
 - The proportions of foods that people should eat each day are represented visually, with foods that should be eaten most in the foundation layers and those that should be eaten less in the upper layers of the pyramid. This would assist in maintaining a healthy weight.
 - The diagram advises people to eat more vegetables, fruit, legumes and grains, and fewer foods that contain fat. Healthy fats are located at the top of the pyramid. This will help people to maintain a healthy weight.
 - There is a statement at the bottom of the pyramid advising people to be active every day.
- Enjoy a wide variety of nutritious foods from the five food groups each day.
 - The Healthy Eating Pyramid arranges foods according to the five major food groups. Vegetables, fruits, grains and legumes make up the foundation layers, which indicates that these food groups should be eaten in larger quantities. The middle layer includes meat (and alternatives) and dairy (and alternatives).
- Limit intake of foods containing saturated fat, added salt, added sugars and alcohol.
 - Sugar and salt sit outside the pyramid and are marked with a cross, to indicate that they should be limited in the diet. Foods high in saturated fats, such as meat, are towards the top of the pyramid, indicating that they should be eaten less frequently.
 - The diagram makes it clear that fats should only be eaten in smaller portions, as they sit at the top of the pyramid, and it refers to healthy fats, which are not saturated fats.

Important points

- Four marks are awarded for this question: one mark for correctly listing each of the two dietary guidelines, and two marks for explaining how each guideline is represented in the Healthy Eating Pyramid.
- Your knowledge should be in-depth enough that you can recall each guideline correctly and understand how each guideline is aimed at promoting positive dietary changes in Australians.
- The Healthy Living Pyramid is no longer in use and has been replaced by the Healthy Eating Pyramid.

Questions for you to practise

- 1 Identify one strength and one limitation of the Australian Dietary Guidelines in promoting healthy eating. (2 marks)
- 2 List and explain two dietary guidelines provided to Australians by the Australian Dietary Guidelines. (4 marks)
- 3 Discuss two challenges that the Australian Government faces in bringing about dietary change for all Australians. (4 marks)
- 4 Who is responsible for the Australian Dietary Guidelines and what is their purpose? (2 marks)
- 5 Explain one way Nutrition Australia attempts to address access and equity in bringing about dietary changes in Australians. (1 mark)
- 6 Provide two similarities between the Australian Dietary Guidelines and Nutrition Australia's Healthy Eating Pyramid. (2 marks)
- 7 Discuss how culture can play a role in bringing about improvements in the diet of Australians. (2 marks)

Unit 4

Health and human development in a global context

Area of Study 1:

Health and wellbeing in a global context

Chapter 7: Health in a global context	178
Chapter 8: Sustainability and human development	221
Chapter 9: Implications of global trends for health and wellbeing	246

Area of Study 2:

Health and Sustainable Development Goals

Chapter 10: The UN's Sustainable Development Goals	278
Chapter 11: The WHO and Australian aid	317
Chapter 12: NGOs and effective aid programs	353



Chapter 7: Health in a global context

Key knowledge

- characteristics of high-, middle- and low-income countries
- similarities and differences in health status and burdens 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

Key skills

- describe characteristics of high-, middle- and low-income countries
- evaluate data to describe 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

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Key terms

- burden of disease
- characteristics
- discrimination
- health
- health status
- high-income countries
- inequality
- low-income countries
- middle-income countries
- poverty
- sanitation

In this chapter

Characteristics of high-, middle- and low-income countries	page 179
High-income countries	page 180
Middle-income countries	page 181
Low-income countries	page 183
Comparison of health status and burden of disease	page 185
Health status	page 185
Burden of disease	page 188

Reasons for similarities and differences in burden of disease	page 192
Access to safe water	page 192
Sanitation	page 197
Poverty	page 202
Inequality and discrimination	page 205
Global marketing and distribution of tobacco, alcohol and processed foods	page 209

Characteristics of high-, middle- and low-income countries

Countries can be classified in a number of ways – for example, by their geographic location, their Human Development Index or their health status. Another way of classifying countries is by their level of income. According to the World Bank, economies can be classified into four income groups:

- low-income
- lower-middle income and upper-middle income (together referred to as middle-income)
- high-income.

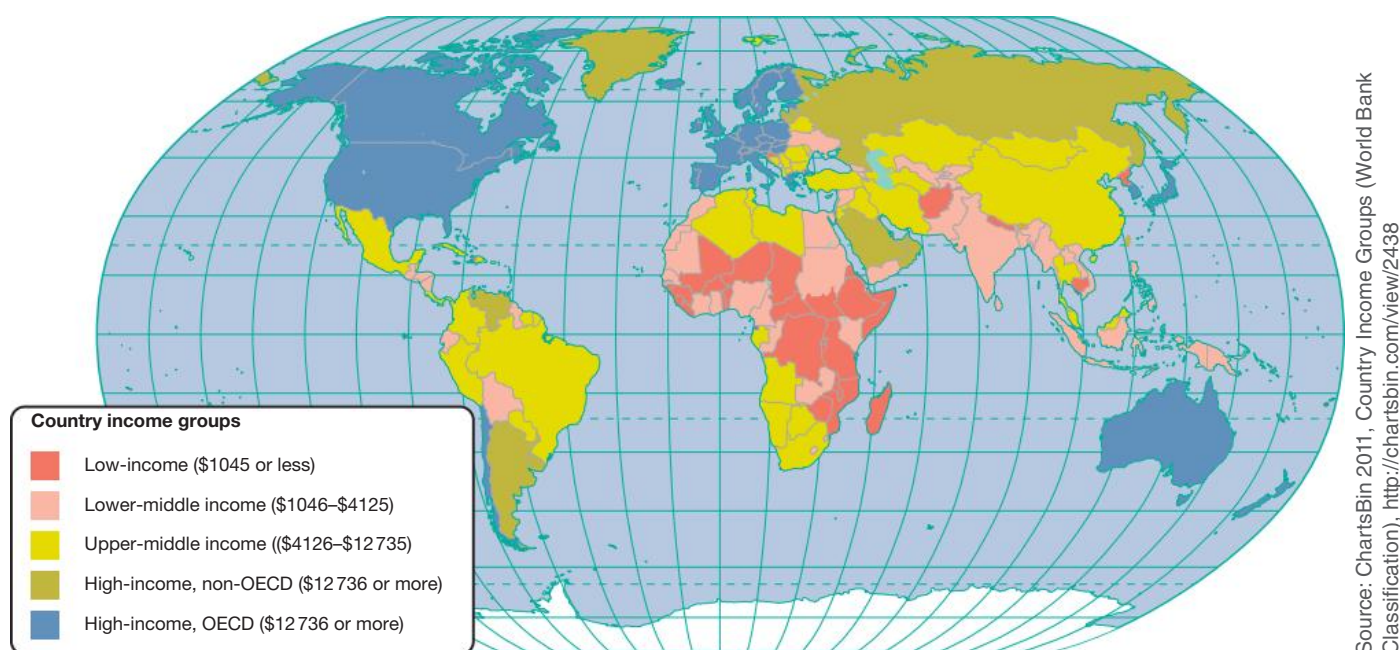


Figure 7.1 World Bank Group Classification of Countries according to income groups, 2016

A country's income is measured using gross national income (GNI) per capita, in US dollars, converted from local currency. Each country is reclassified at the beginning of each financial year (1 July), based on its GNI per capita for the previous calendar year (World Bank n/da).

The **characteristics** of high-, middle- and low-income countries can have a dramatic impact on the **health** and **health status** of their population. In the following section, the social, economic and environmental characteristics of each income group are described.

It is important to note that not all the characteristics described below fit all countries within a particular income group, as individual countries are unique and have specific features – one size does not fit all. The discussion below describes characteristics that are shared by several or many of the countries within an income group.

characteristic a distinguishing feature or quality

health a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity

health status the level of health that is experienced by an individual or a population at a particular time

high-income country a country that has a GNI per capita above a certain amount set by the World Bank annually (e.g. \$12 476 in 2017)

per capita for each person

High-income countries

In 2017, **high-income countries** were classified by the World Bank as those with a GNI **per capita** of \$12 476 or more in 2015. This figure changes annually (World Bank, n/db).

Social characteristics

High-income countries have high levels of education and, therefore, high literacy rates. Large amounts of money are generated through taxation to fund schooling, and so many people are able to attend school and stay at school longer. Being in school allows most young people to learn how to read and write, which makes them more employable and also more likely to take important health promotion messages on board.

Gender equality is more evident in high-income countries. Gender equality is a human right, and a necessary foundation for a peaceful, prosperous and sustainable world. Women are entitled to live with dignity and freedom, and free of fear, and this is typically the case in high-income countries. This freedom empowers women, and empowered women contribute to the health and productivity of families and communities, and improve the prospects of the next generation (UNPF n/d; UN n/da).

High-income countries are not dependent on foreign aid – this is not to say that they never receive it, just that they are able to operate without relying on it.

Typically, in high-income countries the human rights detailed in the United Nations *Declaration of Human Rights (1948)* are upheld. Examples of these human rights include:

- the right to life and liberty
- the right to a fair trial
- freedom from slavery (UN 1948).

Economic characteristics

High-income countries have strong economies and economic growth, and are highly industrialised, meaning they have a large number of industries engaging in trade. They prosper with a strong and capable workforce, an abundance of natural resources, quality infrastructure and a peaceful environment. They export a number of goods and hence make enough money to fund essential services such as education, health care, a police force and so on.

High-income countries have a high GNI per capita due to low levels of unemployment, and many people earn a high level of income compared to those in middle- and low-income countries.

Figure 7.2 A higher level of education and more peaceful environment in high-income countries leads to a more prosperous workforce and better infrastructure.



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Environmental characteristics

Populations in high-income countries typically have good water quality and **sanitation**. This includes clean water to drink, and ample water to bathe in, wash clothes and water crops. People also have access to adequate toilets that remove human waste safely, and a hygienic environment, including regular garbage removal and wastewater disposal (WHO 2017a). Indoor air quality in people's homes is high because there is good ventilation.

High-income countries have a highly developed infrastructure, including:

- *high-quality roads* – durable, well-designed, with ample space and a stable surface, enabling safe transportation of people and products
- *good-quality housing* – enough housing for the majority of the population, and facilities for those who cannot afford their own housing. Housing is secure, with heating, running hot and cold water, a functioning toilet and appropriate ventilation.
- *advanced technology* – access to the internet and mobile phone communication, and technology to assist with agriculture, mass production of goods, and education, all of which enhance industry and people's quality of life (WHO 2017b).

sanitation the hygienic means of promoting health through prevention of human contact with hazardous waste (e.g. faeces)

Review and reflect

1 List three ways to classify countries. 2 List and describe: - a two social characteristics of high-income countries	- b two economic characteristics of high-income countries - c two environmental characteristics of high-income countries.

Middle-income countries

In 2017, lower middle-income countries/economies were defined by the World Bank as those that had a GNI per capita between \$1026 and \$4035 or less in 2015. Upper middle-income countries had a GNI per capita between \$4036 and \$12 476 (World Bank n/db). In this section, these countries will all be referred to as 'middle-income'. However, there is great variation among them in their social, economic and environmental statistics and progress.

The number of **middle-income countries** (MIC) is growing. Although many of these nations have seen a downturn in **poverty** rates and improvement in health- and education-related Millennium Development Goals (MDGs), much of this progress has been uneven. Hunger and poverty are still major issues in many MICs, and environmental sustainability is yet to be achieved. The level of human development achieved in this group of nations also varies greatly (UNDP 2012).

Social characteristics

In middle-income countries, **inequality** can be severe, with some groups socially excluded. For example, in some countries, women often experience high levels of **discrimination**, and less access to education.

These countries have some dependence on foreign aid, although less than low-income countries.

The level of support for human rights varies – some countries in this category uphold the human rights of their people, others do not.

middle-income country a country that had a GNI per capita between \$1026 and \$12 475 or less in 2015

poverty when people lack the resources to meet their basic needs; the World Bank defines extreme poverty as living on less than US\$1.90 per day

inequality an unfair situation in which some people have more opportunities, money, etc. than other people

discrimination treating a person or particular group of people differently (particularly worse) than the way in which you treat other people, because of their skin colour, sex, sexuality, etc

Levels of literacy and education vary – some countries have high levels of literacy and education systems that are improving, while others have high levels of illiteracy and poor access to quality schooling.

Economic characteristics

Middle-income countries have moderate income per capita – some people earn a lot of money, but there are still relatively high levels of poverty in many countries. According to the United Nations Development Program (UNDP 2012), 'an estimated 960 million poor people, 72 per cent of the world's poor, live now in these countries, and the distribution of income tends to be more unequal there, compared to low- and high-income countries' (UNDP 2012, p.2).

Economic growth in middle-income countries is relatively high. There is openness to trade and integration with the global economy – most are aiming to boost their economies. They are generally keen to establish favourable trade arrangements so they can make more money and contribute to development in their nation. However, although the economies of middle-income countries are growing, they remain vulnerable to global financial downturns, with sudden changes in petrol and food prices.

Industrialisation is increasing in middle-income countries, especially in urban areas, and dependence on agriculture is reducing. Industrialisation supports trade, transport and other economic activities.



Figure 7.3 Economies of middle-income countries are growing, with increases in trade and industrialisation.

Environmental characteristics

There is great variation in the degree of environmental degradation among middle-income countries. Some have policies to slow environmental degradation, but others experience a rapid deterioration of the environment through destruction of ecosystems, high levels of pollution and degraded water supplies.

- The quality of water and sanitation varies.
- Indoor air quality is often poor for many people.
- The quality of roads is inconsistent, and the quality of housing varies widely.
- Some areas have high levels of technology, while in others the level of technology is poor.

Review and reflect

- 1 List and describe:
 - a two social characteristics of middle-income countries
 - b two economic characteristics of middle-income countries
 - c two environmental characteristics of middle-income countries.

Low-income countries

In 2017, **low-income economies** were defined by the World Bank as those that had a GNI per capita of \$1025 or less in 2015 (World Bank n/db).

low-income country a country that had a GNI per capita of \$1025 or less in 2015



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Figure 7.4 Low-income countries tend to have low economic growth, and therefore lower employment opportunities. The poverty cycle is difficult to overcome in such circumstances.

Social characteristics

Low-income countries often have:

- low levels of education and low rates of literacy
- low gender equality: women in many low-income countries are rarely given the same respect or opportunities as men. Women experience poorer access to employment, food and health care, more discrimination and have lower representation in leadership roles than men
- low levels of employment opportunities
- high dependence on foreign aid, needing assistance from high-income nations to fund programs
- high susceptibility to disasters, dramatic changes in the international financial climate and upsurges in food and petrol prices
- ineffective law enforcement or emergency management plans
- abuses of human rights.

Economic characteristics

Low-income countries often have:

- low levels of economic growth and weak economies. There are often high levels of debt, and people often struggle to overcome a cycle of poverty
- poor trade agreements and therefore struggle to overcome their difficult financial circumstances
- a low GNI per capita as there are high rates of poverty within these nations and therefore high levels of associated conditions/illnesses, including malnutrition
- a strong dependence on agriculture to generate jobs and income. Because this sector is highly dependent on natural factors, it is subject to uncertainty and unpredictability, which can result in fluctuations in income.

Environmental characteristics

According to the WHO:

From longstanding to emerging hazards, environmental factors are a root cause of a significant burden of death, disease and disability – particularly in [low-income] countries. The resulting impacts are estimated to cause about 25% of death and disease globally, reaching nearly 35% in regions such as sub-Saharan Africa. This includes environmental hazards in the work, home and broader community/living environment.

Extract WHO 2017, The Health and Environment Linkages Initiative (HELI) Health and Environment Linkages Policy Series, 'Priority risks and future trends' (<http://www.who.int/heli/risks/ehindevcoun/en/>)

Low-income countries suffer from:

- poor water quality and availability, and poor sanitation
- poor outdoor air quality (caused by vehicles, industries and energy production)
- poor indoor air quality (indoor smoke from heating and cooking)
- greater exposure to toxic substances (toxic chemicals and pesticides at work and at home)
- poor waste disposal
- poorly developed infrastructure, including poorly designed irrigation and water systems, poor-quality roads, inadequate and poor-quality housing.

These countries are significantly affected by the effects of global environmental change, such as extreme weather events, changed patterns of disease and their impact on agricultural production (WHO 2017b).

Review and reflect

- 1 List and describe:
 - a two social characteristics of low-income countries
 - b two economic characteristics of low-income countries
 - c two environmental characteristics of low-income countries.

Comparison of health status and burden of disease

In order to describe similarities and differences in health status and burden of disease between low-, middle- and high-income countries, including Australia, key indicators are used to help interpret the data. The comparisons in this chapter are based on the following indicators:

- health status:
 - life expectancy
 - mortality rates
 - morbidity rates
- burden of disease
 - disability-adjusted life years (DALYs).

We will compare data for the following countries:

- high-income countries – Australia, France, Sweden
- medium-income countries
 - upper middle-income – Lebanon, China
 - lower middle-income – Sudan
- low-income countries – Chad, Uganda, Niger (World Bank n/db).

Health status

Health status is discussed in Chapter 2, from page 32.

Life expectancy at birth, total years

Australia's life expectancy is among the highest in the world (Table 7.1), even compared to other high-income countries (life expectancy is discussed in Chapter 2).

As countries' incomes fall, so too do their life expectancies. This also proves true when comparing the health-adjusted life expectancy (HALE) of countries see (Figure 7.5) (You can review HALE in Chapter 2).



Weblink

INVESTIGATE

The statistics used in this chapter are from the World Health Organization Data Repository, which has an extensive list of indicators to enable comparisons between countries and regions. To visit the data repository, go to <http://hhdvce3and4.nelsonnet.com.au> and click on the link.

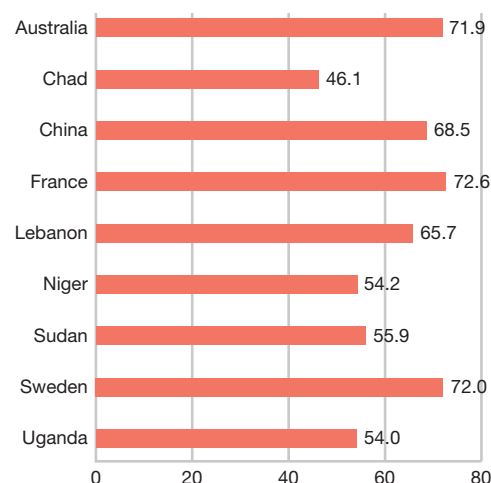


Figure 7.5 HALE at birth (years), 2015
(source: WHO 2016a)

Table 7.1 Life expectancy at birth (years), 2015

Country	Life expectancy at birth (years)		
	Male	Female	Both sexes
Australia	80.9	84.8	82.8
Chad	51.7	54.5	53.1
China	74.6	77.6	76.1
France	79.4	85.4	82.4
Lebanon	73.5	76.5	74.9
Niger	60.9	62.8	61.8
Sudan	62.4	65.9	64.1
Sweden	80.7	84.0	82.4
Uganda	60.3	64.3	62.3

(source: adapted from WHO 2016, Global Health Observatory data repository, 'Life expectancy, data by country', <http://apps.who.int/gho/data/node.main.688?lang=en>)

Review and reflect

- Using the data in Table 7.1, compare Australia's life expectancy to those of Sweden and Niger.
- Using the data in Figure 7.5, compare Australia's HALE to those of China and Lebanon.
- Life expectancy and health-adjusted life expectancy (HALE) are two health status indicators that can be used to compare countries. List three others that could be taken into account.

Mortality and morbidity rates

Various indicators demonstrate the large differences in mortality and morbidity rates between Australia (as an example of a high-income country) and middle- and low-income countries. Reasons for these differences are explored later in the chapter. Two important health status indicators that give an overall picture of the level of development in a country are maternal mortality rate and under-five mortality rate (U5MR).

Australia has one of the lowest maternal mortality rates in the world (Table 7.2): approximately 6 per 100 000 live births, which is slightly higher than Sweden (4 per 100 000 live births) but lower than France (8 per 100 000 live births). Australia's U5MR is similar to those of Sweden and France.

The adage that, 'The wealthier you are, the healthier you are' is often true. Low-income countries experience the highest maternal and under-five mortality rates. Middle-income countries have a wide range of outcomes, but in general, the higher the income of a country, the lower the mortality rates.

High-income countries have systems in place for collecting information on causes of death, while many low- and middle-income countries do not. As a result, the numbers of deaths from specific causes have to be estimated. Collecting accurate data on causes of death in these countries is important in improving health and reducing preventable deaths (WHO 2017d).

Table 7.2 Mortality rates per 100 000 live births for selected countries, 2015

Country	Maternal	Under-five
High-income		
Australia	6	3.8
Sweden	4	3.0
France	8	4.3
Middle-income		
Lebanon	15	8.3
China	27	10.7
Sudan	311	70.1
Low-income		
Niger	553	95.5
Uganda	343	54.6
Chad	856	138.7

(source: adapted from WHO 2015a WHO Global Health Observatory (GHO) data. Annex B, Tables of health statistics by country, WHO region and globally, Part 1. http://www.who.int/gho/publications/world_health_statistics/2016/EN_WHS2016_AnnexB.pdf?ua=1 Review and reflect)

Review and reflect

Using the data in Table 7.2:

- 1 Compare Australia's maternal mortality rate to those of one middle-income country and one low-income country.
- 2 Identify two trends for these nine countries. Table 7.2 has been converted to a graph on your student website, to help you identify trends.
- 3 Using an example from the data, discuss the relationship between level of income and under-five mortality rate for one of these countries.

Case study

Leading causes of death by income group

The leading causes of death differ for different income groups, due to a variety of factors, including the social, economic and environmental characteristics of countries. Use the information provided below to answer the questions that follow.

According to the WHO (2017e):

More than half (52%) of all deaths in low-income countries in 2015 were caused by ... conditions which include communicable diseases, maternal causes, conditions

arising during pregnancy and childbirth, and nutritional deficiencies. By contrast, less than 7% of deaths in high-income countries were due to such causes. Lower respiratory infections were among the leading causes of death across all income groups.

Non-communicable diseases (NCDs) caused 70% of all deaths globally, ranging from 37% in low-income countries to 88% in high-income countries. All but one of the 10 leading causes of death in high-income countries were NCDs. In terms of absolute number of deaths, however, 78% of global NCD deaths occurred in low- and middle-income countries.



➤ Injuries claimed nearly 5 million lives in 2015. More than a quarter (27%) of these deaths were due to road traffic injuries. Low-income countries had the highest mortality rate due to road traffic injuries with 28.5 deaths per 100 000 population – the global rate was 18.3. Road injuries were also among the leading 10 causes of

death in both lower-middle- and upper-middle-income countries.

Extract from WHO 2017e, WHO Media Centre, 'The top 10 causes of death. Leading causes of death by economy income group'.
<http://www.who.int/mediacentre/factsheets/fs310/en/index1.html>

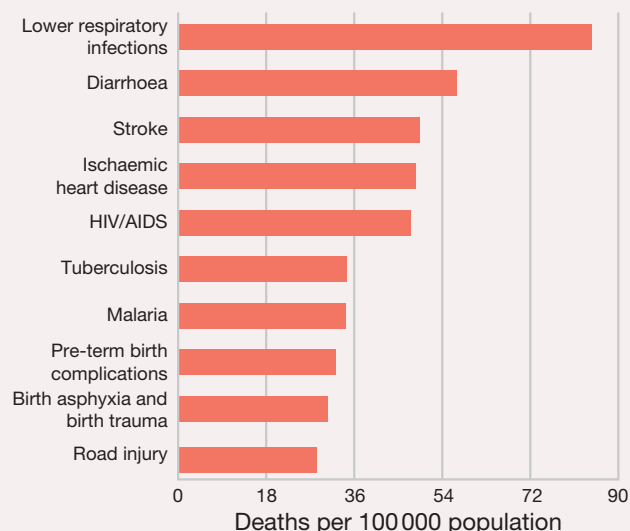


Figure 7.6 The top 10 causes of death in low-income countries in 2015 (source: WHO 2017e)

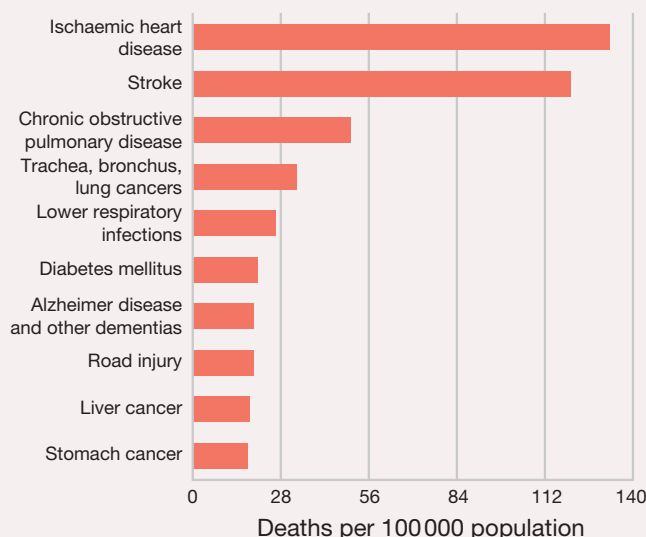


Figure 7.7 The top 10 causes of death in lower-middle-income countries in 2015 (source: WHO 2017e)

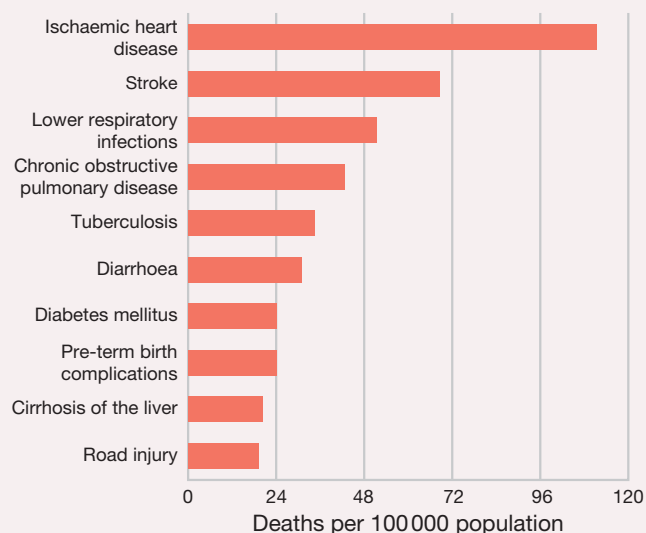


Figure 7.8 The top 10 causes of death in upper-middle-income countries in 2015 (source: WHO 2017e)

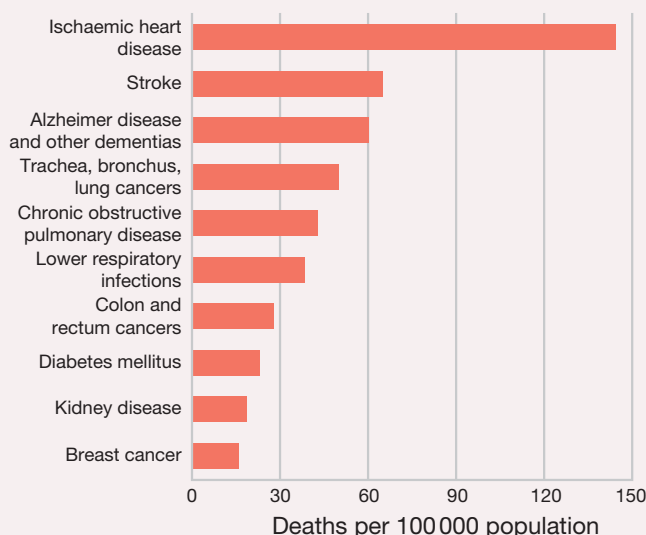


Figure 7.9 The top 10 causes of death in high-income countries in 2015 (source: WHO 2017e)

Burden of disease

As discussed earlier, burden of disease is measured in a unit called disability-adjusted life years (DALY), and takes into account both fatal (mortality) and non-fatal (morbidity) disease burden. This is, therefore, a key indicator to look at when comparing health status between high-, middle- and low-income countries.

High-income countries (including Australia)

In high-income countries, non-communicable diseases (NCDs) feature heavily in the top 10 contributors to burden of disease. NCDs include cardiovascular diseases, malignant neoplasms (tumours), mental and substance use disorders, musculoskeletal conditions and unintentional injuries (Table 7.3) (WHO 2015c).

Table 7.3 Top 10 DALYs by cause, high-income countries, 2015

	Cause of death	Number
	Population	1 172 854 000
	All causes	313 515 900
1	Non-communicable diseases	265 640 499
2	Malignant neoplasms	59 813 332
3	Cardiovascular diseases	54 817 899
4	Mental and substance use disorders	32 670 235
5	Ischaemic heart disease	28 437 526
6	Injuries	27 519 232
7	Musculoskeletal diseases	23 365 08
8	Neurological conditions	22 790 061
9	Communicable, maternal, perinatal and nutritional conditions	20 053 785
10	Unintentional injuries	18 609 624

(source: WHO, Global Health Estimates 2015: DALYs by cause (both sexes), High income countries, http://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html)

Case Study

Australian Burden of Disease Study findings 2011

Below is an extract from a study of Australian burden of disease conducted by the Australian Institute of Health and Welfare (AIHW) in 2011. The extract focuses on the impact and causes of illness and death in Australia in 2011. Read the extract, then answer the questions that follow.

Most of the burden of disease in 2011 was from chronic diseases. Cancer caused the greatest amount of burden (19%), followed by cardiovascular diseases (15%), mental and substance use disorders (12%), musculoskeletal conditions (12%) and injuries (9%). Together these disease groups accounted for around two-thirds of the total burden of disease in Australia. The six leading specific causes of burden in Australia in 2011 were: coronary heart disease, other musculoskeletal

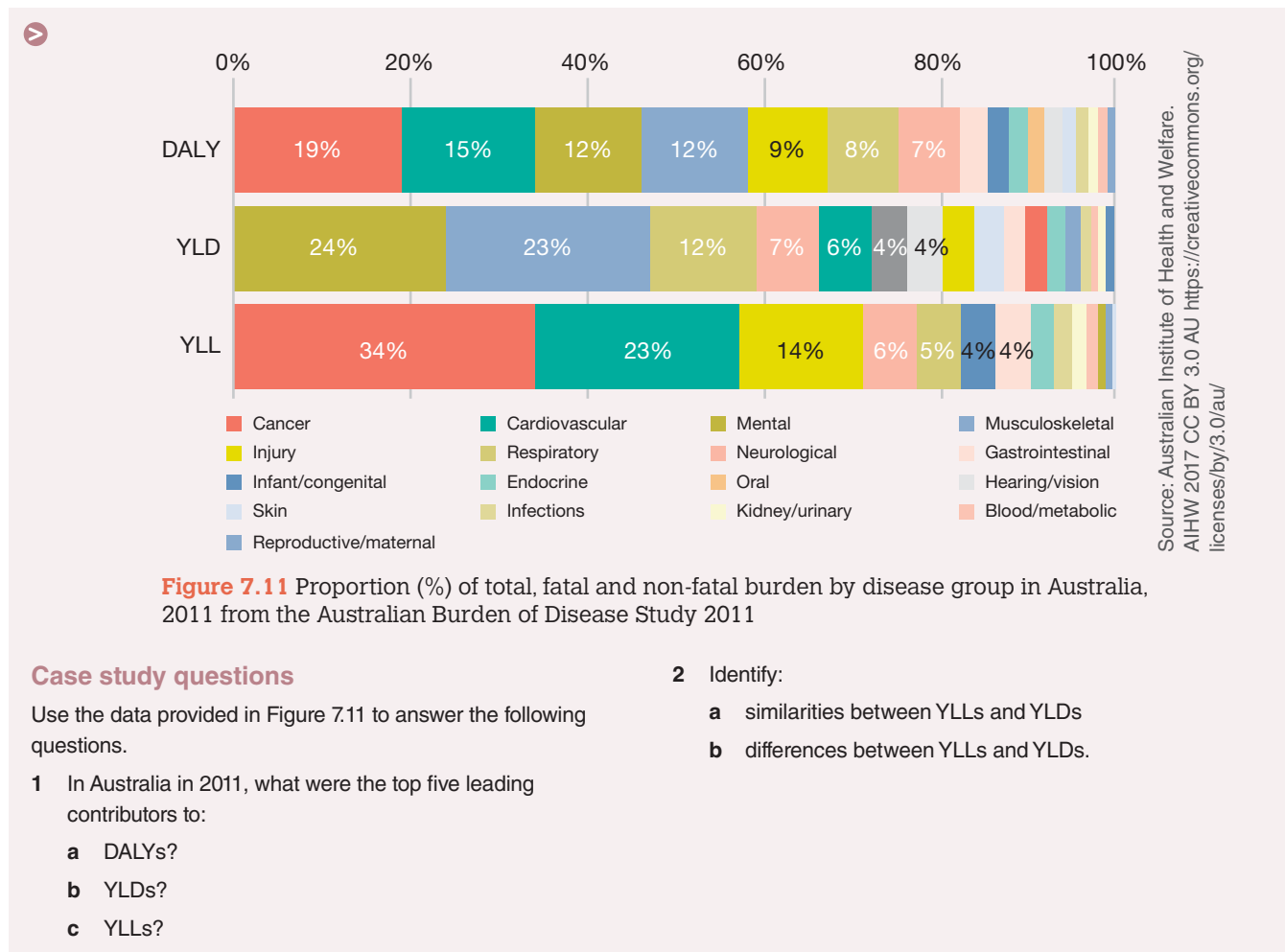
conditions (which includes chronic pain in joints, muscles and other soft tissue, and systemic lupus erythematosus), back pain and problems, chronic obstructive pulmonary disease, lung cancer and dementia.

After accounting for population increase and ageing between 2003 and 2011, there was a 10% reduction in total burden. The greatest reductions were seen in fatal burden and for total burden due to cardiovascular diseases.

About a third of the burden experienced by the population could be prevented by reducing the exposure to modifiable risk factors. The risk factors causing the most burden were tobacco use, high body mass, alcohol use, physical inactivity and high blood pressure.

Source: Australian Institute of Health and Welfare. AIHW 2017 CC BY 3.0 AU <https://creativecommons.org/licenses/by/3.0/au/>





Middle-income countries

In upper-middle-income countries, the leading contributors to disease burden include a range of conditions. As with high-income countries, NCDs are the leading cause of DALYS per 100 000 population. Communicable diseases rank third – much higher than in high-income nations. NCDs such as cardiovascular disease and injuries are in the top 10, while infectious and parasitic diseases are ranked 10th. This is evidence of the ‘**double burden of disease**’ experienced by many upper-middle-income countries (and lower-middle-income and lower-income countries).

NCDs account for close to two-thirds of all deaths globally. This is due to people living longer, coupled with the risk factors associated with urbanisation and globalisation, and the fact that many people consume calorie-dense food and fail to engage in adequate amounts of physical activity (WHO 2015b).

Many lower-income countries battle high rates of pneumonia, diarrhoea and malaria; particularly for children under 5 years (WHO 2015b).

double burden of disease

non-communicable diseases (NCDs) make up 66% of all deaths, but in all except high-income countries infectious (communicable) diseases are also very high, causing a ‘double burden’.

Table 7.4 Top 10 DALYs by cause, upper-middle-income countries, 2015

	Cause of death	Number
	Population	2 607 063 000
	All causes	766 102 605
1	Non-communicable diseases	566 139 277
2	Cardiovascular diseases	167 509 005
3	Communicable, maternal, perinatal and nutritional conditions	111 075 841
4	Malignant neoplasms	103 408 482
5	Injuries	88 480 652
6	Ischaemic heart disease	72 200 971
7	Stroke	66 548 521
8	Mental and substance use disorders	63 253 274
9	Unintentional injuries	61 774 028
10	Infectious and parasitic diseases	42 897 729

Source: WHO 2015, Global Health Estimates 2015: DALYs by cause (both sexes), upper middle income countries, http://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html

In lower-middle-income countries, NCDs are the leading contributor to DALYs, and communicable diseases are ranked second. The top 10 includes a variety of NCDs (including cardiovascular diseases and injuries).

Table 7.5 Top 15 DALYs by cause, lower-middle-income countries, 2015

	Cause of death	Number
	Population	2 926 159 000
	All causes	1 215 812 519
1	Non-communicable diseases	604 303 785
2	Communicable, maternal, perinatal and nutritional conditions	478 281 019
3	Infectious and parasitic diseases	203 481 107
4	Cardiovascular diseases	161 510 097
5	Neonatal conditions	140 671 834
6	Injuries	132 446 562
7	Unintentional injuries	98 102 907
8	Ischaemic heart disease	83 366 872
9	Respiratory infections	80 564 201
10	Lower respiratory infections	77 768 601
11	Preterm birth complications	67 137 205
12	Malignant neoplasms	66 602 295
13	Mental and substance use disorders	61 519 586
14	Diarrhoea	52 442 979
15	Stroke	52 022 877

Source: WHO 2015, Global Health Estimates 2015: DALYs by cause (both sexes), upper middle income countries, http://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html

Low-income countries

In lower-income countries, communicable diseases are the leading contributor to disease burden, with NCDs second. As with middle-income countries, low-income countries experience the double burden of disease discussed on page 190.

Table 7.6 Top 10 DALYs by cause, low-income countries, 2015

	Cause of death	Number
	Population	638 286 000
	All causes	372 864 364
1	Communicable, maternal, perinatal and nutritional conditions	220 008 257
2	Non-communicable diseases	110 344 646
3	Infectious and parasitic diseases	108 723 712
4	Neonatal conditions	50 444 254
5	Injuries	42 220 302
6	Respiratory infections	37 017 530
7	Lower respiratory infections	36 163 707
8	Unintentional injuries	33 720 261
9	Diarrhoea	25 595 269
10	Parasitic and vector diseases	24 335 040

(source: WHO 2015, Global Health Estimates 2015: DALYs by cause (both sexes), upper middle income countries, http://www.who.int/healthinfo/global_burden_disease/estimates/en/index2.html)

Review and reflect

Use the data in Tables 7.3 to 7.6 to answer the following questions.

- 1 Identify two similarities between high-, middle- and low-income countries in relation to burden of disease.
- 2 Identify two differences between high-, middle- and low-income countries in relation to burden of disease.
- 3 Identify two contributors to burden of disease that feature in the top 10 for low-income countries but not high-income countries, and discuss why this might be the case.
- 4 List two differences between middle-income countries and high-income countries.
- 5 List two differences between middle-income countries and low-income countries.

Reasons for similarities and differences in burden of disease

Access to safe water

Good health depends on having access to safe water, for drinking, cleaning, cooking, generating electricity, food production and recreation. Having access to safe water can help to boost the economic growth of a country, play a key role in reducing levels of poverty, and dramatically improve health and wellbeing.

In 2010, the UN General Assembly recognised the human right to water and sanitation, acknowledging that ‘everyone has the right to sufficient, continuous, safe, acceptable, physically accessible and affordable water for personal and domestic use’ (WHO 2016b). By 2015, improvements had been made, yet some 663 million people still lacked access to an improved drinking water source (one that is protected from contamination, particularly human waste) (see Table 7.7 and Figure 7.12), and so this is still a cause of a large number of global DALYs and deaths worldwide (WHO/UNICEF 2015).

Table 7.7 Population using improved drinking water sources (%), 2015

Country	Proportion of population using improved drinking water (%)
Australia	100
Chad	50.8
China	95.5
France	100
Lebanon	99
Niger	58.2
Sudan	62
Sweden	100
Uganda	79

Source: WHO 2015, WHO Global Health Observatory data repository, ‘Exposure data by country’, <http://apps.who.int/gho/data/node.main.46>

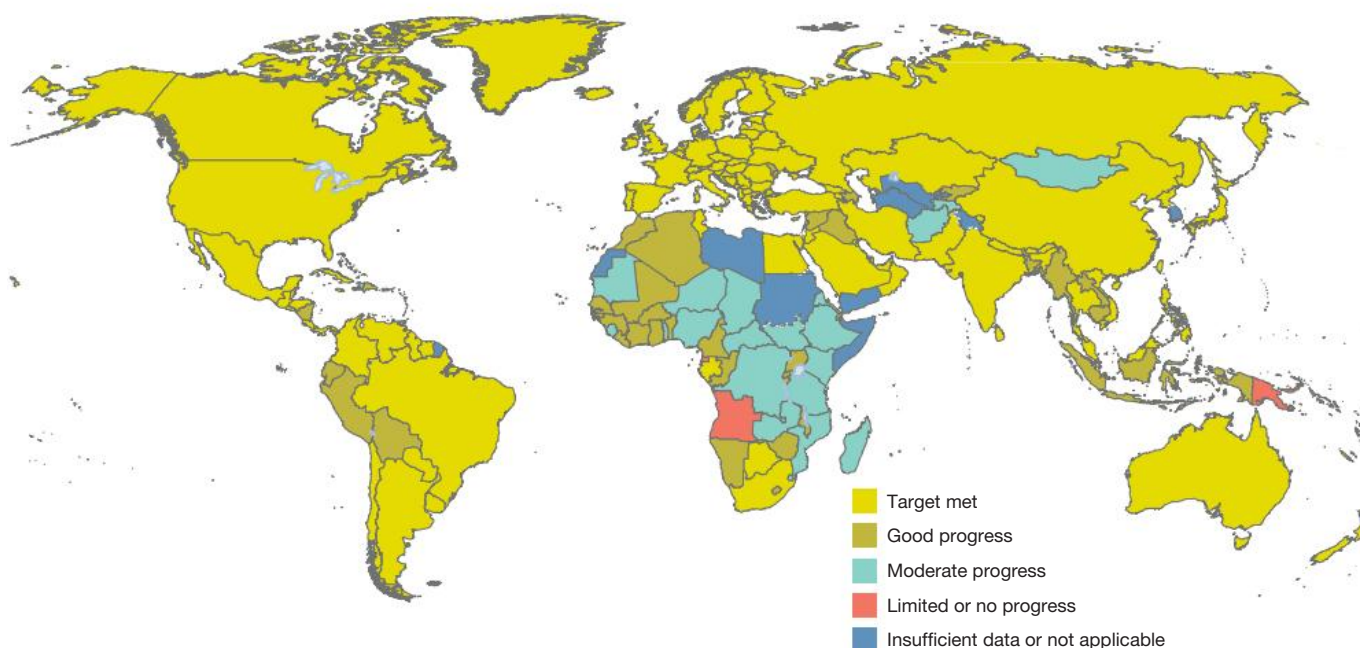


Figure 7.12 Proportion of the population using improved drinking water sources in 2015. Orange areas: less than 50 per cent of the population have improved drinking water. (source: WHO/UNICEF 2015)

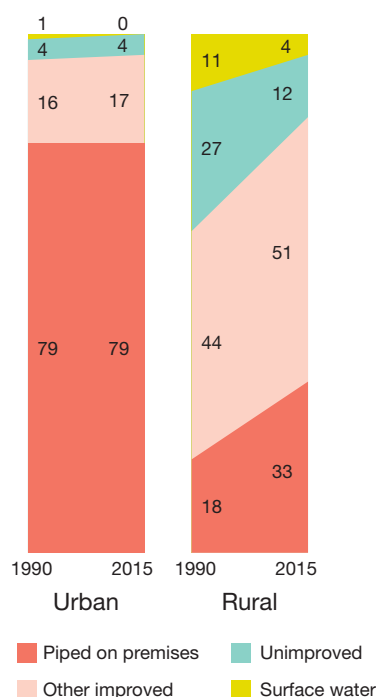


Figure 7.13 Trends in drinking water quality for rural and urban residence. Global rural–urban differences have lessened, but large gaps remain (source: WHO/ UNICEF 2015).

Waterborne diseases are caused by consuming dirty or contaminated water. Poor management of urban, industrial and agricultural wastewater means the drinking water of hundreds of millions of people is dangerously contaminated or chemically polluted. This contaminated water can transmit diseases such as diarrhoea, cholera, dysentery, typhoid, hepatitis A and polio. All these conditions are more prevalent in low-income countries and middle-income countries than in high-income countries. Contaminated drinking water is estimated to cause 502 000 diarrhoeal deaths each year.

People living in rural and remote areas in low-income countries are also less likely to have access to clean and adequate amounts of water, and this affects their health status significantly.

Some 842 000 people are estimated to die each year from diarrhoea as a result of several factors including unsafe drinking water, poor sanitation and poor hand hygiene. Where water is not easily accessed, people often don't wash their hands after defecating, and this adds to the risk of diarrhoea and diseases. Again, this occurs more frequently in low- and middle-income countries.

Water can be dangerous in a number of ways.

- Diarrhoea results in the body becoming dehydrated, but if the only water available is contaminated, the individual may continue to consume it, which creates a vicious circle.
- Drinking contaminated water and suffering from extreme diarrhoea can also lead to malnutrition. This weakens the immune system and leaves the sufferer more susceptible to other illnesses and, in many low-income countries, can result in death.
- Approximately 240 million people are affected by schistosomiasis. This is an acute and chronic disease caused by parasitic worms through exposure to infested water. When contracted by children it can cause anaemia, stunted growth and reduced ability to learn, although its effects can be reversed with treatment. Chronic schistosomiasis can affect people's ability to work and can result in death (WHO 2016c).
- Intestinal infections can be caused by many things, including drinking or swimming in contaminated water. Examples of intestinal infections include whipworm, hookworm and roundworm. In most instances, infections of the intestines result in diarrhoea or dysentery, nausea, vomiting and abdominal cramping (ATSU 2016).
- Stagnant water can be a breeding ground for insects that carry and transmit diseases such as dengue fever and malaria. In 2015, there were roughly 212 million malaria cases and an estimated 429 000 deaths from malaria (WHO 2016d).



image folk/Yogesh S. More

Figure 7.14 People can be infected with schistosomiasis during routine agricultural, domestic and recreational activities or while doing their job, if they are exposed to infected water.

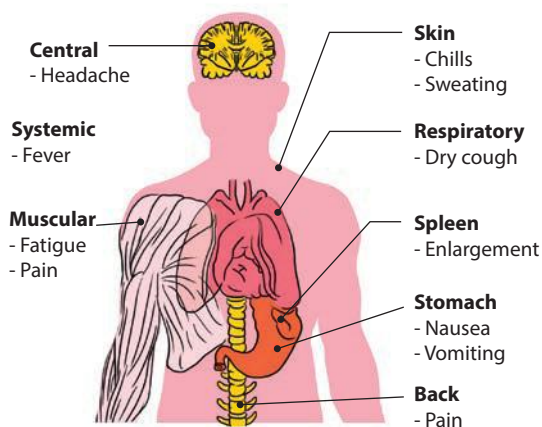


Figure 7.15 Symptoms of malaria (source: MPharma Co. Ltd 2014)

Waterborne diseases have an impact on education levels, when children miss school due to being unwell after consuming contaminated water. Economic opportunities are lost due to illness and the time-consuming processes of acquiring water where it is not readily available. Children and women are most affected, as they often walk long distances to get water. This also often leads to significant injuries including back and shoulder ailments (NAS 2007).



Getty Images/Corbis/Peter Turnley

Figure 7.16 Consuming contaminated water can have an impact on education levels if children miss school due to waterborne diseases. This in turn can affect economic opportunities.

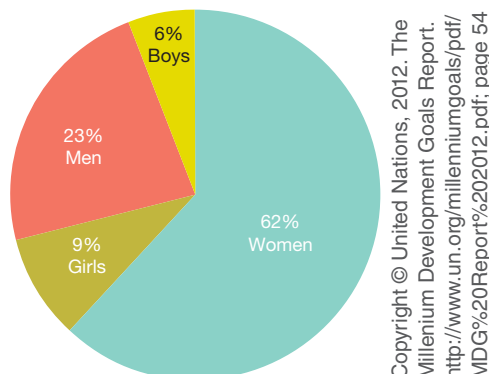
In health care facilities, patients and staff are placed at additional risk of infection and disease when water, sanitation and hygiene services are lacking. In low- and middle-income countries, 38% of health care facilities lack an improved water source. Globally, 15% of patients develop an infection during a hospital stay, and this proportion is much greater in low-income countries (WHO 2016b).

Women bear the main burden for collecting water in sub-Saharan Africa

Where water supplies are not readily accessible, water must be carried from its source. According to an analysis of data from 25 countries in sub-Saharan Africa, representing 48 per cent of the region's population, women and girls bear the primary responsibility for such water collection [Figure 7.17].

Only one-quarter of the population in these countries had water on their premises in 2010. For the remaining 75 per cent, water had to be collected from some distance. The time and energy devoted to this manner of water collection is considerable, even under the most conservative assumption of only one trip per day. For the 25 countries combined, it is estimated that women spend at least 16 million hours each day per round trip; men spend 6 million hours; and children, 4 million hours.

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Figure 7.17 Distribution of the water collection burden among women, children under age 15 and men, in households without piped water on premises, sub-Saharan Africa, based on population-weighted averages from 25 countries, 2006/2009 (percentage)

Review and reflect

- 1 Water is essential for good health. List five things water is required for that are essential for optimal health and wellbeing.
- 2 Identify the major cause(s) of most waterborne diseases.
- 3 List three diseases that can result from contaminated water.
- 4 List two conditions/illnesses associated with contaminated water that are more prevalent in low-income and some middle-income countries than in high-income countries (including Australia). Discuss why this is the case.
- 5 What is schistosomiasis? What can some of its impacts be for children who suffer from it?
- 6 Low- and middle-income countries account for 91% of unintentional drowning deaths. Identify and discuss two reasons for this.
- 7 Some children have to walk long distances to collect water. List two impacts that this can have on a child's health and wellbeing.

Sanitation

In 2010, the UN General Assembly acknowledged that, as with clean drinking water, access to sanitation is a human right, and highlighted the need for the global community to take action and assist countries who struggle to provide safe, clean, readily available and affordable drinking water and sanitation. 'Sanitation' generally refers to facilities and services for the safe disposal of human urine and faeces – including flushing toilets, which are sometimes referred to as 'latrines'. The word 'sanitation' also refers to the maintenance of hygienic conditions, through garbage collection and wastewater disposal (WHO 2016f).



© UNICEF/UNI137336/LeMoyné

Figure 7.18 One in three people worldwide do not have access to improved sanitation, and nearly 1 billion people, most in low-income countries, defecate in the open. This has a significant impact on health and wellbeing.

In high-income countries, sanitation is generally good, with most households having flushing toilets, effective infrastructure in place for the removal of wastewater and regular garbage collection. In middle-income countries, the quality of sanitation varies – good in some, inadequate in others. Low-income countries typically experience widespread inadequate sanitation, and this is linked to high levels of disease – cholera, diarrhoea, dysentery, hepatitis A, typhoid and polio. It is estimated that inadequate sanitation is the cause of 280 000 diarrhoeal deaths each year. Sanitation is considered a major factor in some other tropical diseases, including intestinal worms, schistosomiasis and trachoma. In low- and middle-income countries, 19% of the population do not have improved sanitation, and 35% lack water and soap for handwashing, which increases the prevalence of diarrhoea (WHO 2016b).

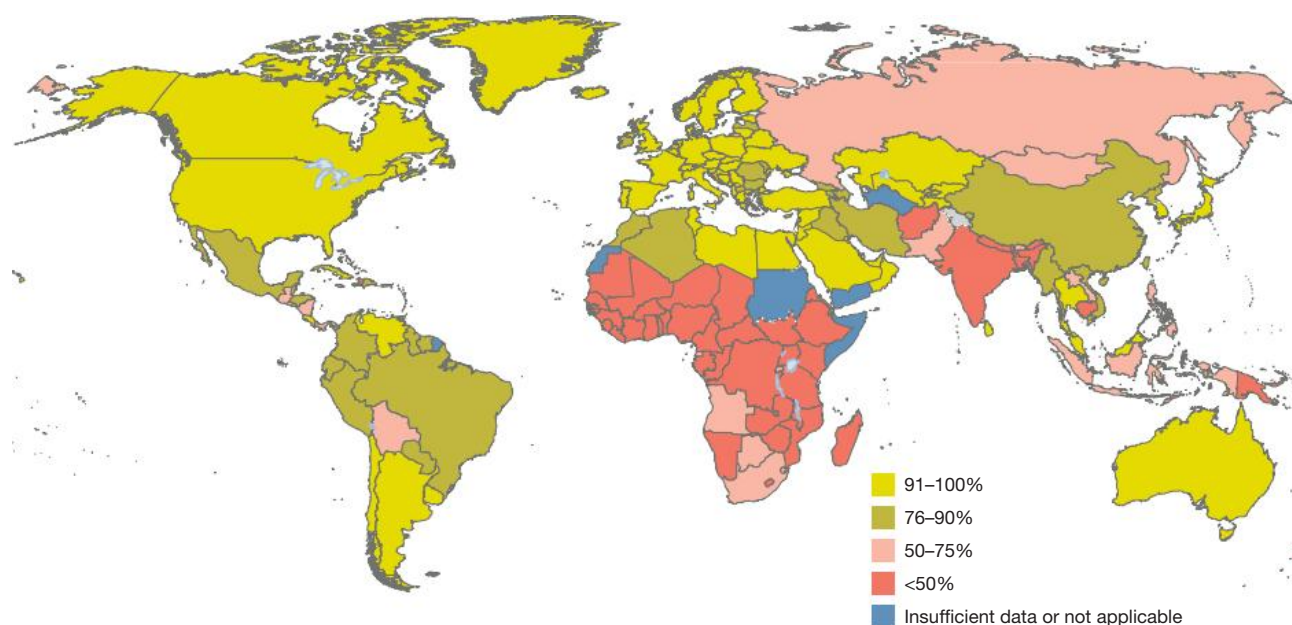


Figure 7.19 Proportion of population using improved sanitation. In 47 low- or middle-income countries, or territories, less than half the population used improved sanitation in 2015 (source: WHO/UNICEF 2015).

Table 7.8 Population using improved sanitation facilities (%), 2015

Country	Percentage of population
Australia	100
Chad	12.1
China	76.5
France	98.7
Lebanon	80.7
Niger	10.9
Sudan	25.4
Sweden	99.3
Uganda	19.1

(source: WHO 2015, WHO Global Health Observatory data repository, 'Exposure data by country'; <http://apps.who.int/gho/data/node.main.46>)

Table 7.9 Mortality rate attributed to exposure to unsafe WASH* services (per 100 000 population), 2012

Country	Mortality (per 100 000)
Australia	<0.1
Chad	92.8
China	0.4
France	0.5
Lebanon	0.4
Niger	69.2
Sudan	34.6
Sweden	1.1
Uganda	30.3

*WASH: water, sanitation and hygiene

(source: WHO 2016, Global Health Observatory data repository, 'Burden of disease. Data by country', <http://apps.who.int/gho/data/node.main.INADEQUATEWSH?lang=en>)

Poor sanitation also contributes to higher levels of malnutrition. As much as 50% of undernutrition is linked to chronic diarrhoea, intestinal worms and other infections caused by unsafe water, poor sanitation and insufficient hygiene, including not washing hands with soap) (WaterAid Australia 2016).

'Sanitation is a cornerstone of public health,' said WHO Director-General Dr Margaret Chan. 'Improved sanitation contributes enormously to human health and well-being, especially for girls and women. We know that simple, achievable interventions can reduce the risk of contracting diarrhoeal disease by a third.'

Extract from WHO 2008, Media Centre, 'Poor sanitation threatens public health. 6 in 10 Africans remain without access to proper toilet.' Joint News Release, WHO/UNICEF, <http://www.who.int/mediacentre/news/releases/2008/pr08/en/>

In 2015, 68% of the world's population had access to improved sanitation facilities, although 2.4 billion people still do not have basic facilities such as toilets or latrines (WHO/UNICEF 2015). Of these, 946 million still defecate in the open, for example in street gutters, behind bushes or into open water (rivers, lakes or streams) (WHO 2016f).

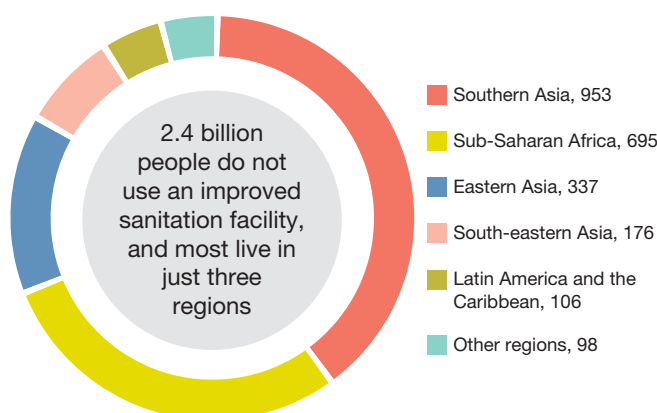


Figure 7.20 Population (millions) without improved sanitation in 2015, by region (sources: WHO/UNICEF 2015)

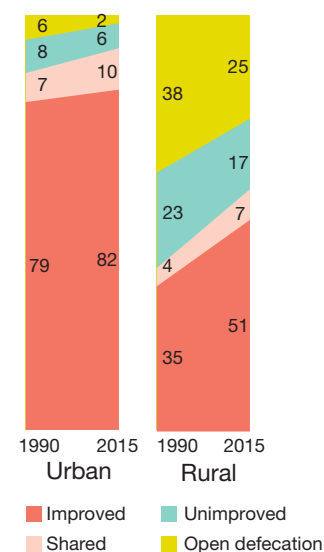
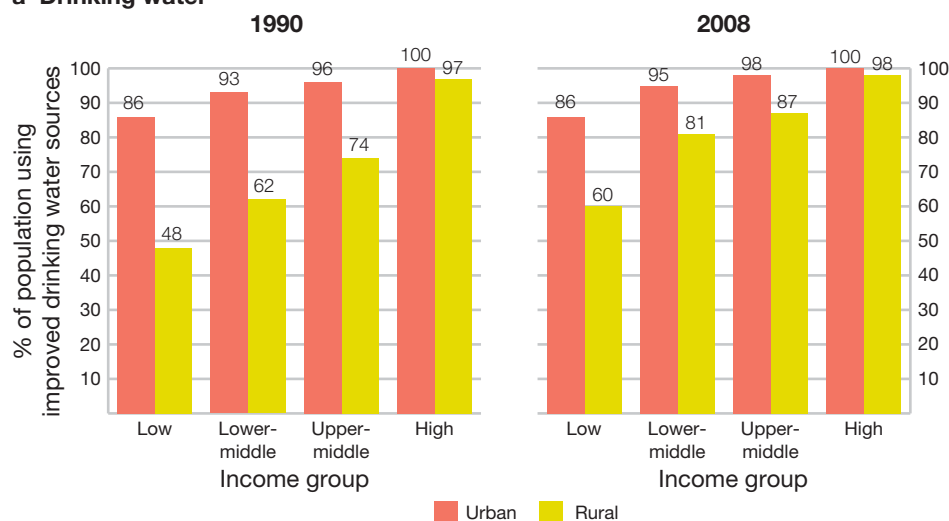


Figure 7.21 Urban-rural trends in sanitation coverage (%), 2015 (source: UNICEF and WHO 2015). Despite progress, sanitation coverage in rural areas still lags behind urban areas

Globally, it is estimated that 82% of the urban population now uses improved sanitation facilities, compared with 51% of the rural population (WHO/UNICEF 2015). As a result, 90% of those people who defecate in the open live in rural areas (WHO/UNICEF 2015). However, with more people moving from rural to urban areas, the total number of sanitation facilities must continue to grow, to prevent this practice becoming more widespread.

Within low- and middle-income countries, in spite of improvements, there is still inequality in access to sanitation (Figure 7.21). People in urban areas are far more likely to access improved sanitation.

a Drinking water



b Sanitation

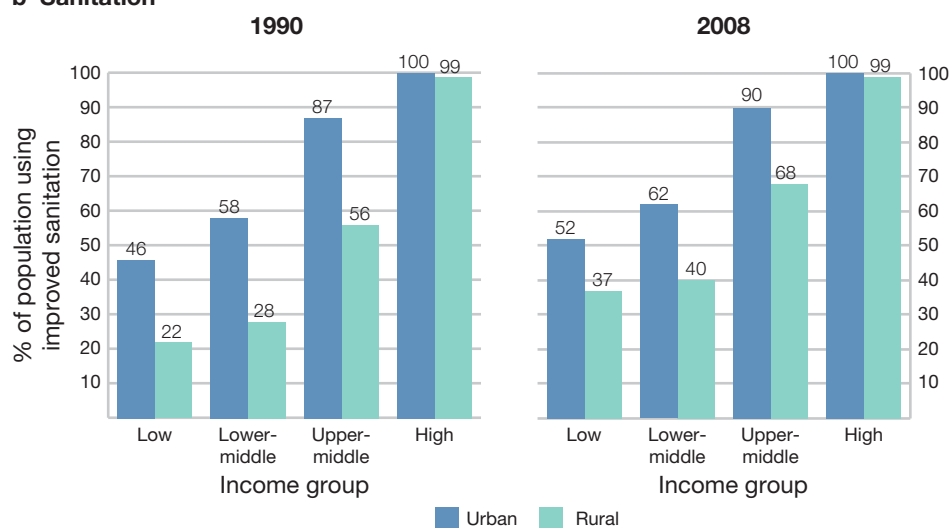


Figure 7.22 Access to **a** improved water and **b** sanitation, by country and by income group, 1990 versus 2008. Although improvement occurred between 1990 and 2008, the trend remains the same: as income group decreases, so too does access to improved drinking sources and improved sanitation (source: WHO 2011, Millennium Development Goals Report 2012, table 5, p.104)

ACCESS TO WATER & SANITATION

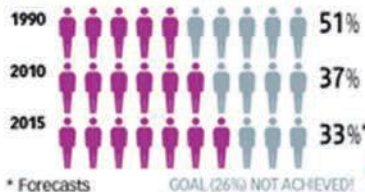
MILLENNIUM DEVELOPMENT GOALS: MIXED RESULTS

► In 2000 the UN Member States adopted eight Millennium Development Goals (MDGs) to be achieved by 2015. As part of the 7th goal (ensure environmental sustainability), target 7.C concerned water and sanitation.

REDUCE BY HALF THE NUMBER OF PEOPLE WITHOUT ACCESS TO SAFE DRINKING WATER BETWEEN 1990 AND 2015

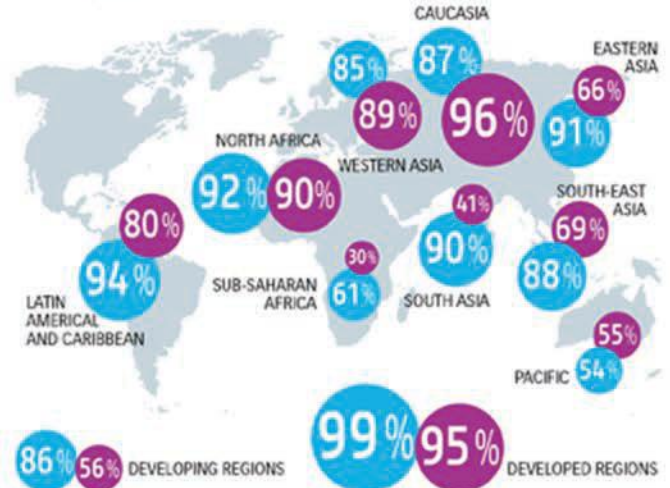


REDUCE BY HALF THE NUMBER OF PEOPLE WITHOUT IMPROVED OR SHARED SANITATION FACILITIES BETWEEN 1990 AND 2015

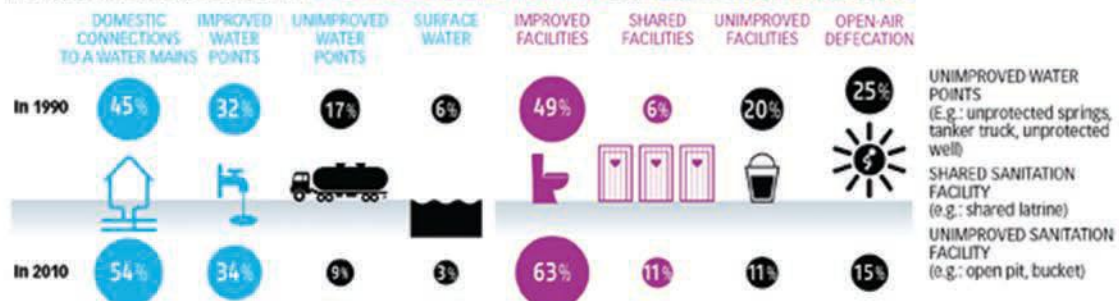


COVERAGE IN TERMS OF IMPROVED WATER POINTS AND IMPROVED SANITATION FACILITIES

● SUPPLY VIA IMPROVED WATER POINTS (E.G.: protected canalization or well) ● SUPPLY VIA IMPROVED SANITATION FACILITIES (E.g.: individual toilets)



POPULATION COVERED BY TYPES OF WATER POINTS OR SANITATION FACILITIES



DIFFERENCES BETWEEN URBAN AND RURAL AREAS

► The improvement in access to water and sanitation is not keeping up with the rapid increase in the population. Consequently the number of people without access to the service in urban areas is also increasing.

CHANGE IN ACCESS TO WATER AND SANITATION IN RURAL AND URBAN ZONES

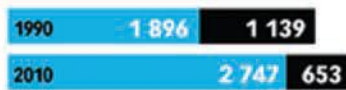
POPULATION WITH ACCESS TO:
 ■ AN IMPROVED WATER POINT
 ■ AN UNIMPROVED WATER POINT

POPULATION WITH ACCESS TO:
 ■ AN IMPROVED SANITATION FACILITY
 ■ AN UNIMPROVED SANITATION FACILITY

URBAN AREAS
IN MILLIONS



RURAL AREAS
IN MILLIONS



eMag

MARCH 2013 <http://www.emag.suez-environnement.com/en/infographics>

SOURCES: "PROGRESS ON DRINKING WATER AND SANITATION" 2012 REPORT BY UNICEF AND THE WHO



Figure 7.23 Global access to water and sanitation

A lack of separate sanitary facilities has adverse effects on the school attendance of girls, who often feel embarrassed and/or unsafe when sharing facilities with male students. Where there are poor sanitation facilities, girls and women often have to walk to dark and dangerous locations to find a private space to relieve themselves, and this makes them more vulnerable to harassment, threats of violence, and physical and sexual assault.

Poor sanitation affects the health expenses of a nation, its productivity, and increases premature death rates.

Review and reflect

- 1 What does sanitation refer to?
- 2 a Describe the differences in sanitation levels between low-, middle- and high-income countries.
b Describe and discuss the impact these different levels can have on health and wellbeing in low-, middle- and high-income countries.
- 3 'Sanitation is a cornerstone of public health', said WHO Director-General Dr Margaret Chan. What do you think she means by this statement?
- 4 List and discuss two ways in which poor access to basic sanitation facilities affects the health and wellbeing of women.

Poverty

Remember the saying, 'the wealthier you are, the healthier you are'? Generally speaking, countries that have high levels of poverty have a relatively low life expectancy compared with countries where poverty levels are low. Countries with high GNI per capita (high-income countries) have high life expectancy compared with countries where GNI per capita is low (low-income countries). There are differences in the leading contributors to burden of disease between these two extreme groups, while middle-income countries also have their own unique data.

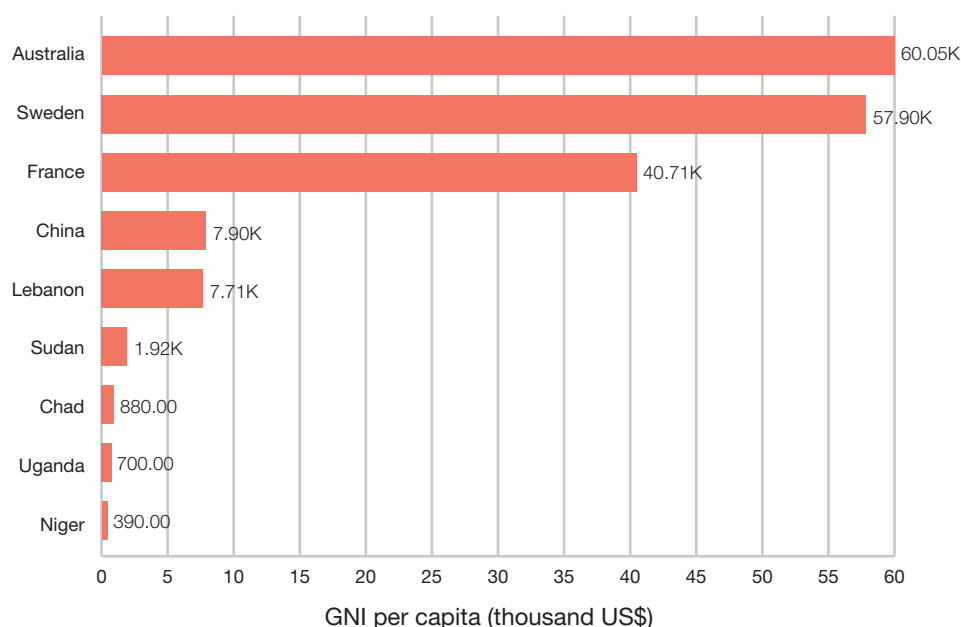


Figure 7.24 Gross national income by country, 2015 (source: World Bank 2017)

About half of the world's poor live in lower middle-income countries, including India, Indonesia and Nigeria (UN n/db), with the vast majority of the rest living in low-income countries.

Defining 'poverty' is not straightforward. Poverty is often defined in terms of income.

- 'Extreme poverty' or 'absolute poverty' is typically defined as living on less than a certain amount of money per day. This amount is updated by the World Bank, and in 2015 it was US \$1.90 (World Bank 2015). At the World Summit on Social Development, held in Copenhagen in 1995, 'absolute poverty' was defined as: a condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services.

www.poverty.ac.uk

- 'Relative poverty' is defined in relative terms, and so its dollar value depends on where you live – it means living on less than approximately 50% of your country's average income (The Poverty Site n/d).

While poverty is associated with lacking sufficient income and resources to ensure a sustainable livelihood, it encapsulates much more. In 1998 the United Nations released a statement, signed by the heads of all UN agencies, that discussed poverty:

Fundamentally, poverty is a denial of choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society. It means not having enough to feed and cloth [sic] a family, not having a school or clinic to go to, not having the land on which to grow one's food or a job to earn one's living, not having access to credit. It means insecurity, powerlessness and exclusion of individuals, households and communities. It means susceptibility to violence, and it often implies living on marginal or fragile environments, without access to clean water or sanitation.

Statement for Action to Eradicate Poverty, adopted by the Administrative Committee on Coordination (ACC) in May 1998. © United Nations 1998. Reprinted with the permission of the United Nations. From University of Bristol n/d, 'Indicators of poverty and hunger', 'UN definition of poverty', http://poverty.ac.uk/sites/default/files/indicators-of-poverty-and-hunger_UNpoverty.pdf

Although there have been significant improvements in poverty rates globally over the past 25 years, one in five people in low-income regions still live on less than \$1.25 a day. This doesn't take into account the millions more who make just a fraction more than this daily amount, putting them at high risk of slipping back into poverty.

The impact of high levels of absolute poverty on a population, are many, varied and typically tragic. They include:

- high levels of hunger and malnutrition
- limited access to education and other basic services (such as health care)
- lower levels of literacy
- social discrimination and exclusion
- lack of participation in decision-making
- poor-quality shelter (including lack of heating). (UN n/dc)

Where absolute poverty levels are typically high, the effects on health outcomes are significant, and include:

- lower life expectancy and higher mortality rates, including higher infant mortality rates and under 5 mortality rates – due to poor access to many of the prerequisites for health (such as education, health care, food, shelter, etc.)

- higher levels of malnutrition – those living in absolute poverty struggle to afford the nutritious, healthy foods required to maintain a strong immune system, which makes them more susceptible to disease and infection
- higher maternal mortality rates – due to poor access to health care prior to, during and after childbirth, as well as poor access to hygienic facilities, education and the latest technology to assist with caesarean births and abortions.

Ill-health is a major cause of poverty, partly because of the costs of seeking health care, including paying for tests, medication and consultations, as well as transportation to and from a GP, which can often be expensive. In low-income countries, poverty can also result from the loss of income of the main breadwinner, who most likely isn't receiving any sick pay, and also of family members who may be required to stop working or stop attending school to take care of their ill relative. On top of this, many poor families dealing with an illness may be forced to sell any assets they have acquired to cover essential medical expenses. Alternatively, they may need to borrow money at high interest rates, which plunges them even further into poverty (World Bank 2014).

While there are high rates of poverty in low-income countries, there are also typically a small number of people who are extremely wealthy. As a result, while these countries have high levels of communicable diseases and lower life expectancy, they also have high rates of non-communicable diseases typically associated with wealth, such as obesity, type 2 diabetes and cardiovascular disease. This is the 'double burden of disease' (WHO 1999).

In many low- and middle-income countries, many people have some form of employment, but still struggle to escape poverty. These people are often referred to as the 'working poor' (Rahman 2011). Many may work in unsafe environments and in jobs that are unstable for a variety of reasons (e.g. climate change). Because these jobs pay poorly and may be highly unstable, it is all but impossible for these workers to escape the cycle of poverty.



Figure 7.25 Absolute poverty is associated with poor shelter, food insecurity, poor mental health and lower life expectancy.

Review and reflect

- 1 It is often said that the wealthier you are, the healthier you are. As a general rule, what is the relationship between poverty rates and life expectancy?
- 2 What is the difference between 'extreme poverty' and 'relative poverty'?
- 3 The UN identified what living in poverty means. List two things the UN discussed, and then describe how each could affect health and wellbeing.
- 4 List two things associated with high rates of poverty in low-income countries, and discuss how they affect health status in these nations.
- 5 Briefly explain the interrelationship between ill-health and poverty.
- 6 Describe the 'double burden of disease'.
- 7 Explain two challenges faced by the 'working poor'.
- 8
 - a Referring to Figure 7.24, compare Australia's GNI per capita with that of China and Niger.
 - b Discuss the impact these figures may have on the health and wellbeing of people in these countries.

Inequality and discrimination

Discrimination refers to behaviours and practices that result in avoidable and unfair inequalities between groups in society, based on factors including race, religion, gender/sex and others (Trenerry et al. 2012). Discrimination is more than one-off acts of unfairness; it is a broader pattern that maintains privileges for members of dominant groups at the cost of the rights of others (Klocker et al. 2011). Discrimination and the marginalisation of particular groups within communities and countries have a negative effect on health status.

'Inequality' refers to a disparity existing between two things, often with unjust results. Many people, particularly those in low-income countries, experience inequality of outcomes, such as level of income or level of educational attainment, compared with those in high-income nations. People who experience inequality of outcomes also typically experience inequality of opportunities, including social (unequal access to employment or education), economic and political opportunities. Unequal opportunities and, in turn, unequal outcomes, play a key role in determining variations in human health and wellbeing (UNDP 2014).

Sex or gender identity

Women

Many women in some low-income and middle-income countries are still treated like second-class citizens; they are often denied equal access to education, food, water and opportunities. Women are often disempowered and denied choice, and therefore are often unable to make important decisions on issues that affect their lives. As a result, many women in low-income and some middle-income countries experience disadvantage in many areas of life. Females in these countries:

- are often forced to leave school early – many girls in low-income and some middle-income countries are required to care for sick relatives. They are also often required to help raise their younger siblings, as well as carry out domestic duties, ranging from cleaning and cooking, to collecting water from long distances, to planting and caring for crops

- have higher rates of illiteracy – because many girls leave school early, women are often forced into dangerous, labour-intensive jobs, as their inability to read and write limits what employment they can gain. In extreme situations, some women are forced into a life of prostitution, which increases sexually transmitted infection rates, including HIV/AIDS
- are less represented in positions of leadership, including as elected parliamentarians – women are not in positions where they can champion women's rights and discuss topics from the perspective of a woman in that particular country, and so the process of changing outdated and prejudiced policies is often slow and drawn out
- have higher rates of unemployment – women are more likely to be unemployed than men in low-income and most middle-income countries
- earn less money on average – when women do work, they are often underpaid
- have higher rates of maternal mortality – during pregnancy and childbirth, and after childbirth, due to poor access to prenatal and postnatal care, and a large number of births without skilled health personnel (e.g. a midwife)
- are expected to obey their husband or father – cultural expectations in many low- and some middle-income countries are that women will be subservient to their fathers or husbands and follow orders without question
- are often forced into early marriage against their will – in sub-Saharan Africa, approximately 25% of girls marry before the age of 18. According to UNICEF, 76% of girls in Niger and close to 70% of girls in Central African Republic and Chad marry before they turn 18. In Malawi, 50% of girls marry before the age of 18 (Human Rights Watch 2014)
- are last to eat – many women in low-income countries eat last, if food supplies are limited. This leaves them more prone to malnourishment and being underweight, and therefore to having weakened immune systems, making them more vulnerable to other infections and disease.

Generally speaking, women in high-income countries experience gender equality, and as a result have vastly better health outcomes than females in most low- and middle-income countries.

Figure 7.26 A woman with mobility impairments uses a hand-cranked bicycle to move around her village. After 20 years of displacement and war in northern Uganda, women with disabilities face an even more complex and gruelling process of return and relocation than their neighbours. They experience stigma and sexual violence and are often denied access to health care and justice.



Alamy Stock Photo/Kumar Sriskandan

Men and boys

Despite generally enjoying more opportunities, privileges and power than women, boys and men continue to have substantially worse health outcomes than girls and women, in most parts of the world. The Global Burden of Disease study led by the Institute for Health Metrics and Evaluation in 2010 (GBD 2010 study) showed that from 1970 to 2010, women had a longer life expectancy than men (Wang et al. 2012). Over that 40-year period, female life expectancy at birth increased from 61.2 to 73.3 years, while male life expectancy rose from 56.4 to 67.5 years. Over those 40 years, the gap in life expectancy at birth widened between the sexes, to men's disadvantage. By 2010, on the whole women were outliving men by an average of almost six years (Baker/WHO 2014).

It is suggested that this is due to several factors, including that:

- males are more likely to work in jobs where they are exposed to physical and chemical hazards
- males are more likely to engage in risk-taking behaviour as part of being 'macho'
- men are less likely to visit a doctor when they are ill and, when they do, they are less likely to report the symptoms of a disease or condition.

Race and religion

Race and religion are also the basis for discrimination around the globe. At the UN's Fourth World Conference on Women, held in Beijing in 1995, attention was drawn to the fact that as well as women experiencing discrimination on the basis of their gender, factors such as age, religious beliefs, levels of disability, socio-economic status or belonging to a particular ethnic or racial group are also causes of unfair treatment and therefore poor health outcomes. In 2001, the United Nations held a World Conference against Racism, Racial Discrimination, Xenophobia and Related Intolerance (UN 2001) to draw further attention to these issues and discuss strategies to tackle them.

Race

The *Oxford Dictionary* defines 'race' as 'the fact or condition of belonging to a racial division or group; the qualities or characteristics associated with this; a group of people sharing the same culture, history, language, etc.; an ethnic group; a group or set of people or things with a common feature or features'. And 'racism' is defined as 'prejudice, discrimination, or antagonism directed against someone of a different race based on the belief that one's own race is superior'. Racism leads to poorer health outcomes for marginalised groups in many nations.

Religion

Freedom of religion is a universal human right, as stated in Article 18 of the UN's *Universal Declaration of Human Rights* (1948):

Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his [sic] religion or belief, and freedom, either alone or in community with others and in public or in private, to manifest his [sic] religion or belief in teaching, practice, worship and observance.

<http://www.un.org/en/universal-declaration-human-rights/>

Discrimination that occurs on the grounds of religion or belief (referred to as 'religious discrimination') is often included under the broader terminology of 'race-based discrimination'. This is because constructions of ethnicity, culture, race and religion are often interrelated (VicHealth 2011).

Effects of racial and religious discrimination

Individuals who experience religious and racial discrimination (or who are denied religious freedom) are likely to be susceptible to a range of negative health outcomes, including:

- adverse effects on social relations between people of differing religions, cultures, gender, race and sexual orientation – discrimination includes stereotyping, which can discourage people from networking or associating with those who are related to a particular group based on race, gender, religious preference or culture
- increased stress for those being discriminated against – stress can be linked with stomach pains, ulcers, hypertension and poorer cardiovascular health
- increased chance of experiencing poverty if overlooked for work opportunities
- increased rates of depression and anxiety – increased fear and stress may be caused by being treated poorly
- negative physiological effects – the immune, endocrine and cardiovascular systems may all be adversely affected by feelings of fear and anxiety
- increased rates of psychiatric disorders
- decreased life satisfaction
- lower self-esteem
- increased rates of injury from physical assaults
- limited or reduced access to resources essential for good health, such as employment, housing and education.

There is also tentative evidence of a link between discrimination and low birth weight and increased cardiovascular reactivity.

Religious and race-based discrimination encourages risky behaviours which in turn are associated with poor health outcomes. For example:

- increased alcohol use/abuse
- increased drug use/abuse
- increased rates of smoking (VicHealth 2011).

Sexual orientation and gender identity

Lesbian, gay, bisexual and transgender (LGBT) people often experience poorer health outcomes in comparison to the general population. In many countries, LGBT people are exposed to discrimination and prejudice, resulting in a higher prevalence of mental health disorders and associated behaviours, including suicide attempts, eating disorders, substance-use disorders, panic attacks, depression and anxiety (WHO, 2013).

Although data on morbidity and mortality, and access to health services for LGBT communities is scarce, and their relationship with discrimination not clear, trends suggest:

- alcohol and substance abuse were found to be higher among LGBT populations
- obesity is more prevalent among lesbian women than heterosexual women (Sandfort et al. 2006)
- HIV/AIDS is more prevalent among LGBT people

- LGBT people are more likely to experience violence against them and injuries associated with assault (Blondeel et al. 2016).

SOURCES: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1470639/>; <https://equityhealth.biomedcentral.com/articles/10.1186/s12939-016-0304-1> (Blondeel et al, 2016); http://www.ghwatch.org/sites/www.ghwatch.org/files/B133-6_LGBT.pdf (WHO, 2013)

Review and reflect

1 a What is discrimination? - b List three global causes of discrimination that are linked to poor health outcomes. 2 What is inequality? 3 Explain why women who are forced to leave school early are often susceptible to poor health outcomes. 4 Describe the impact that low levels of female literacy in low-income countries can have on women's health status. 5 Identify and discuss three reasons that females in low-income countries experience poorer health outcomes than females in high-income countries. 6 In spite of the fact that men generally enjoy more opportunities, privileges and power than women,	their health outcomes are substantially worse than among girls and women, in most parts of the world. List three possible reasons and briefly discuss each, linking the reasons with health status outcomes. 7 Compare the terms 'race' and 'racism'. 8 List and discuss three effects that discrimination against a person based on their race or religion can have on an individual's health and wellbeing. 9 List three behaviours that are linked to religious and race-based discrimination, and discuss how these behaviours can have a negative impact on the health status of a population.

Global marketing and distribution of tobacco, alcohol and processed foods

The increase in global marketing of tobacco, alcohol and processed foods has increased the prevalence of non-communicable diseases in many low- and middle-income countries. As many of these nations continue to struggle with issues associated with high rates of infectious diseases and malnutrition, there is also a rapid rise in non-communicable diseases and conditions such as obesity, cardiovascular disease, type 2 diabetes and lung, throat and liver cancer. This means many low- and middle-income countries now have a double burden of disease – communicable and non-communicable. The presence or absence of certain laws and regulations influence how tobacco, alcohol and processed foods are distributed in different countries, with many middle- and low-income countries lacking the policies to effectively discourage the use or consumption of these items.

Global marketing and distribution of tobacco

The tobacco epidemic is one of the world's biggest public health threats – it is a leading cause of death, illness and impoverishment globally. Tobacco products are made entirely or partly of leaf tobacco as raw material, and are smoked, sucked, chewed or snuffed. All contain the highly addictive psychoactive ingredient nicotine. The WHO lists tobacco as a risk factor to public health (WHO 2017):

Tobacco use is one of the main risk factors for a number of chronic diseases, including cancer, lung diseases, and cardiovascular diseases. Despite this, it is common throughout the world.

Extract from WHO 2017, 'Health topics. Tobacco', <http://www.who.int/topics/tobacco/en/>

Table 7.10 Prevalence of smoking any tobacco product among adults aged ≥ 15 (2006) and prevalence of tobacco use among adolescents aged 13–15 years (%) (2000–2010)

Country	Prevalence of smoking any tobacco product among adults aged ≥ 15 years (%), 2006		Prevalence of tobacco use among adolescents aged 13–15 years (%), 2000–2010	
	Male	Female	Male	Female
Australia	22.0	19.0	...	...
Chad	15.3	2.3	20.9*	13.9*
China	59.5**	3.7**	7.1*	4.1*
France	36.4	26.9	...	...
Lebanon	30.6	7.1	65.8	54.1
Niger	...	...	11.8	5.6
Sudan	27.8	3.0	9.5	4.3
Sweden	17.3	23.3	...	...
Uganda	18.9	4.2	17.3	15.3
Income group				
Low-income	30.9	4.8	14.3	10.9
Lower middle-income	47.7	4.4	14.4	7.4
Upper middle-income	41.1	19.1	26.3	21.8
High-income	33.1	19.8	17.3	13.4
Global	41.1	8.9	17.0	10.5

*City surveys were extrapolated into country figures reported here.

**Data not approved by national authorities.

(source: adapted from WHO 2011, World Health Statistics 2011, http://www.who.int/whosis/whostat/EN_WHS2011_Full.pdf?ua=1, Table 5 Risk factors, p.105)

second-hand smoke smoke in the air near a smoker that is inhaled by a non-smoker

More than 5 million of those deaths are due to the direct use of tobacco, more than 600 000 are the result of non-smokers being exposed to **second-hand smoke**.

Low- and middle-income countries

Nearly 80% of the world's 1 billion smokers live in low- and middle-income countries. This can be linked to a number of factors, including:

- lower education levels and therefore reduced likelihood that health promotion programs will be effective. In a 2009 survey conducted in China (middle-income country) only 38% of smokers knew that smoking causes coronary heart disease and only 27% knew that it causes stroke (euronews 2013)
- fewer health promotion programs highlighting the dangers of smoking

- fewer restrictions on advertising and marketing of cigarettes – only 29 countries, 12% of the world's population, have completely banned all forms of tobacco advertising, promotion and sponsorship
- fewer taxes on tobacco – a tax increase of 10% reduces tobacco consumption by about 4% in high-income countries and about 5% in low- and middle-income countries. In spite of this, the strategy of high tobacco taxes is not often used. Only 33 countries, with 10% of the world's population, have introduced a 75% tax on tobacco products
- fewer laws focusing on packaging requirements – only 42 countries, 19% of the world's population, meet the best practice for pictorial warnings, which includes making the warnings in the local language and covering at least half of cigarette packets. Most of the countries not meeting best practice are low- or middle-income countries
- fewer (or less stringently enforced) laws focusing on a minimum age to buy tobacco, where tobacco can be sold, where it can be smoked. Over 1.3 billion people, or 18% of the world's population, are protected by national smoke-free laws, mostly in high-income countries. Around one country in three has minimal or no restrictions on tobacco advertising, promotion and sponsorship
- less support for quitting. In 25% of low-income countries, there are no support programs for quitting.

Many children in low-income countries smoke cigarettes, as they lack education about the dangers of smoking and are able to access cigarettes due to a lack of regulations.

bidis small, thin, hand-rolled cigarettes, sometimes flavoured. Tobacco is rolled in a leaf.

Second-hand smoke

Second-hand smoke is the smoke that fills enclosed spaces when people cigarettes, **bidis** and water pipes. Of over 4000 chemicals found in tobacco smoke, at least 250 are hazardous to health, and over 50 are linked to an increased risk of cancer.

In adults, second-hand smoke has been shown to cause cardiovascular and respiratory diseases, including coronary heart disease and lung cancer. In infants, it has been linked to sudden death, and in pregnant women, it can cause low birth weight of the baby. When children are regularly exposed to air polluted by tobacco smoke, this exposure is linked to asthma and other respiratory conditions.



Reproduced with the permission of the World Health Organisation
<http://www.who.int/campaigns/no-tobacco-day/2016/en/>

Figure 7.27 Plain packaging laws are encouraged by the WHO, and have been linked to a reduction in the prevalence of smoking in many high-income countries.

Review and reflect

- 1 List three chronic diseases associated with tobacco smoking.
- 2 Nearly 80% of the world's 1 billion smokers live in low- and middle-income countries. List and discuss three reasons that this is the case and what impact this could have upon health outcomes for these nations in the future.
- 3 What is second-hand smoke?
- 4 List and discuss illnesses/conditions that are commonly linked to second-hand smoke.
- 5 Most countries not meeting best practice for pictorial warnings on cigarette packets are low- or middle-income countries. Describe how pictorial warnings act as a deterrent for smoking.

Global marketing and distribution of alcohol

Approximately 3.3 million deaths worldwide every year result from harmful use of alcohol. Harmful use of alcohol causes more than 200 disease and injury conditions, and 5.1% of the global burden of disease and injury is attributable to alcohol.

Alcohol consumption is linked to death and disability early in life, with approximately 25% of total deaths between the ages of 20–39 linked to alcohol. Excessive alcohol consumption is also linked to a range of mental and behavioural disorders, including alcohol dependence, other non-communicable conditions (such as liver cirrhosis, cardiovascular disease and some cancers including liver cancer), as well as injuries occurring as a result of violence, traffic accidents, self-harm, suicide, and trips and falls.

Alcohol consumption by a pregnant woman may result in foetal alcohol syndrome and pre-term birth complications. Beyond this, excessive consumption of alcohol is also linked to many social and economic issues for both the individual and the community.

A number of factors influence the levels and patterns of alcohol consumption, how alcohol is distributed and alcohol-related issues within a community. These factors include:

- the culture of a community (including religious beliefs and the role that alcohol plays within a particular community at events such as celebrations or commiserations)



Figure 7.28 In many low-income countries, alcohol is home-made, cheap and dangerous.

- the availability of alcohol
- the presence and enforcement of alcohol policies (such as minimum age laws, advertising laws, packaging laws, extra taxes on top of normal price, health promotion campaigns to raise awareness about the dangers of excessive drinking, and so on). These significantly impact the distribution of alcohol in a country.

Fast facts about alcohol

According to the *IWSR Duty Free/Travel Retail Summary Report 2015* (IWSR 2015):

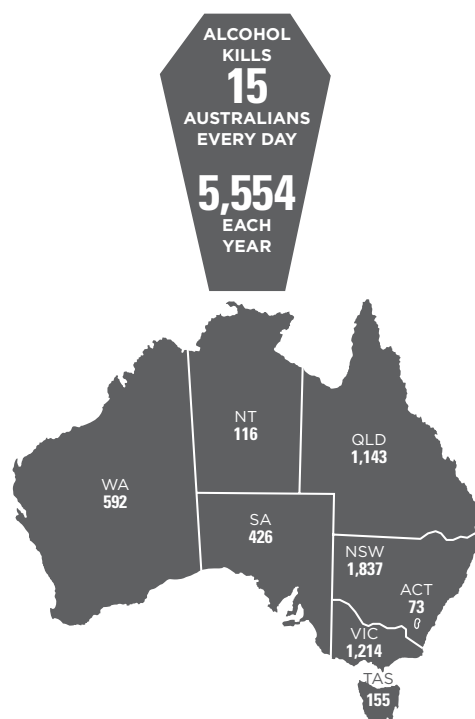
- Volume sales of alcohol grew globally by 2% in 2014; the fastest-growing regions were Africa and the Middle East (both with many low- and middle-income countries), where volume sales grew 9% and value sales grew 16.2%.
- India and China, both middle-income countries, have made a significant contribution to the rise in demand for alcoholic beverages, because of their growing populations.
- In low- and middle-income countries, alcohol is now being aggressively marketed to people who previously did not drink it.
- The Asia-Pacific region is the fastest-growing market for alcoholic drinks, especially China and India.
- Consumption of alcoholic beverages is highest in Europe (France is ranked number one, ahead of Germany, Spain, Italy and the UK, all high-income countries), Brazil (a middle-income country) will have the highest per capita consumption of whisky globally in the coming years, based on market predictions.
- In China, sales of imported spirits have increased fourfold in the past 10 years.
- The Indian alcohol market has been flourishing since 2001 and has grown 7–12% since 2011.

Just as it is a major contributor to burden of disease in many low- and middle-income countries, excessive alcohol consumption is also an issue in Australia. A report funded by VicHealth and the Foundation for Alcohol Research and Education (FARE) revealed that, in Australia in 2010, 15 deaths and 430 hospitalisations were caused by alcohol each day. In the 10 years of the study, deaths increased by 62%. For men, most alcohol-related deaths were due to injuries (36%), cancers (25%) and digestive diseases (16%). For women, most alcohol-related deaths were due to heart disease (34%), cancers (31%) or injuries (12%). (VicHealth 2014a)

Review and reflect

1 Make a list of disorders, non-communicable diseases and injuries associated with excessive alcohol intake – aim for at least 8–10. 2 Identify and discuss one trend in alcohol consumption. 3 In India and China, both middle-income countries, increasing amounts of alcohol are being consumed.	4 Predict and briefly discuss what impact this emerging trend may have on the health status of these nations over the next decade. 5 Discuss the impact that excessive alcohol consumption has had on people's health in Australia. 6 List two factors that influence the distribution of alcohol and discuss how they do this.

ALCOHOL DEATHS



Gao, C., Ogeil, R.P., & Lloyd, B. (2014). *Alcohol's burden of disease in Australia*. Canberra: FARE and VicHealth in collaboration with Turning Point.

Data used in this report is from 2010

Figure 7.29 Alcohol causes many deaths in Australia (2010 data) (source: VicHealth 2014b)

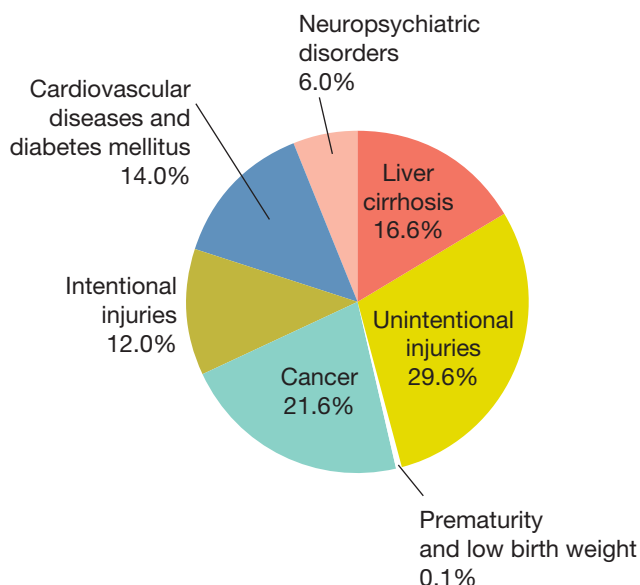


Figure 7.30 Global distribution of all alcohol-attributable deaths by disease or injury, 2004 (source: WHO 2011d, p.26, Fig 13)

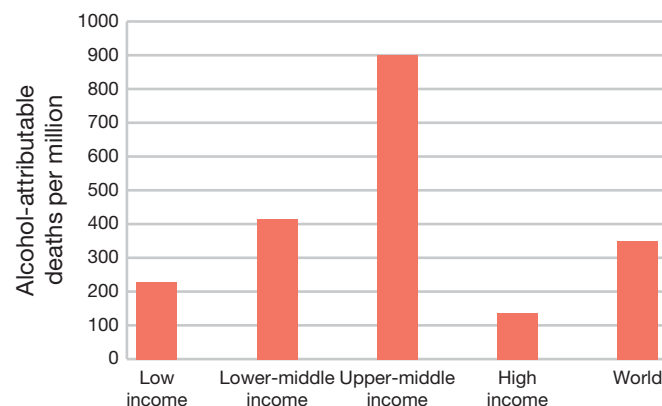


Figure 7.31 Alcohol-attributable deaths worldwide, 2004. Middle-income countries, such as Brazil and China, have relatively high numbers of alcohol-attributable deaths. The relatively low overall mortality in high-income countries is due to the drinking patterns in these countries and to the age structure of the population. (source: WHO 2011d, p.28)

Global marketing and distribution of processed foods

The term 'processed food' can be applied to any food that has been changed from its natural state: for safety, convenience of eating and to make it more attractive to buy. Not all processed foods are unhealthy. However, it is unhealthy to eat a lot of foods which contain added salt, sugar and saturated fat. Processed foods have long been popular in high-income countries such as the United States and Australia, and they are also growing in popularity in low- and middle-income countries. This has resulted in a surge in diet-related diseases in these countries, including hypertension, obesity and type 2 diabetes, directly related to the consumption of processed foods and sugary drinks.



image folk/Jeff Greenberg

Figure 7.32 Fast food restaurants now have a greater presence in many low- and middle-income countries than ever before.

Table 7.11 (page 216) shows the annual growth rate of volume consumption of ultra-processed foods per person in low-, middle- and high-income countries from 1997 to 2009. Ultra-processed foods contain processed ingredients, and usually additives such as sweeteners, preservatives, colours and flavours (Garduno Diaz 2013). From the table it can be seen that in low- and middle-income countries, consumption is growing most rapidly.

The change from traditional diets of whole or minimally processed foods to highly processed foods and drinks is accelerating rapidly. This is largely because multinational companies are now aggressively marketing their products in these nations due to loss of revenue in many high-income countries, and have now achieved a similar level of sales in middle-income countries to those they have reached in high-income countries.

Table 7.11 Annual growth rate (%) of volume consumption per person in low-, middle- and high-income countries between 1997 and 2009

Product	Annual growth in consumption (%)	
	Low- & middle-income countries	High-income countries
Packaged food	1.9	0.4
Soft drinks	5.2	2.4
Processed food	2	1.4
Oils and fats	1.6	-0.1
Snacks, snack bars	2.4	2
Alcohol	2.8	1.1
Tobacco (per person)	2	0.1

Stuckler D, McKee M, Ebrahim S, Basu S (2012) 'Manufacturing Epidemics: The Role of Global Producers in Increased Consumption of Unhealthy Commodities Including Processed Foods, Alcohol, and Tobacco'. PLoS Med 9(6): e1001235

According to international researchers:

... there is significant penetration by multinational processed food manufacturers such as Nestle, Kraft, PepsiCo, and Danone into food environments in LMICs [low-and-middle-income countries], where consumption of unhealthy commodities is reaching – and in some cases exceeding – a level presently observed in HICs [high-income countries].

Extract from Stuckler D, McKee M, Ebrahim S et al. 2012, 'Manufacturing Epidemics: The Role of Global Producers in Increased Consumption of Unhealthy Commodities Including Processed Foods, Alcohol, and Tobacco'. PLoS Med 9(6): e1001235, <http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001235>

The increased consumption of processed foods in these countries has been the result of several factors – increasing levels of urbanisation, a growth in average incomes, greater exposure to mass media and hence marketing campaigns, higher rates of female employment, less leisure time and a strong desire to want to 'be like Westerners'. Some countries are moving away from their traditional diets, and increasingly eating foods high in salt, sugar and saturated fat. So cardiovascular disease, obesity, type 2 diabetes, and other diet-related diseases in these low- and middle-income countries (Kearney 2010). Distribution of processed foods has also increased in these countries due to limited or no laws around food labelling or restricting advertising, and minimal, if any, extra taxation placed on processed foods.

Children

According to WHO, the cruel fact is that:

Children in low- and middle-income countries are more vulnerable to inadequate pre-natal, infant, and young child nutrition. At the same time, these children are exposed to high-fat, high-sugar, high-salt, energy-dense, and micronutrient-poor foods, which tend to be lower in cost but also lower in nutrient quality. These dietary patterns, in conjunction with lower levels of physical activity, result in ... increases in childhood obesity [among these populations] while undernutrition issues remain unsolved.

Extract from WHO 2016, WHO Media Centre, Fact Sheet, 'Obesity and overweight, <http://www.who.int/mediacentre/factsheets/fs311/en/>

Infants and young children in these nations remain more likely to have inadequate nutrient intake during these all important formative years, as well as during their prenatal development, as a result of their mother not consuming appropriate amounts of protein, folate and nutrient-dense foods. When coupled with lower levels of physical activity, this results in increased childhood obesity rates.

Case study

Obesity growing at an alarming rate: UK research

According to a report from the Overseas Development Institute, the number of obese and overweight adults in developing countries has nearly quadrupled to approximately 1 billion since 1980.

The Future Diets report indicates that, in high-income countries, that figure increased by 1.7 times in the same time period.

As of 2008, 34 per cent of adults were classified as either obese or overweight. This is an increase from 23 per cent in 1980. Most obese and overweight adults are from developing countries with rising incomes, such as Mexico and Egypt.

In adults, obesity is classified as a body mass index (BMI) of greater than 30.

The Future Diets report suggested that sedentary lifestyles and shifting dietary trends are to blame for the upward trend.

Lifestyles are growing increasingly sedentary, with people from rich and emerging middle-income countries more likely to be less active than ever.

Coupled with less activity is food overconsumption, and greater consumption of animal produce, fats, sugar and oils, with less emphasis on cereals and grains.

According to the Future Diets report, 'The world has seen appreciable increases in the amount of food available per person over the past half century, across all groups ... For people on high incomes, food has become so abundant that they can choose their diet with few concerns over cost.'

The report also concluded that the increase in economic growth, incomes and urbanisation, have seen diets following

the same pattern. People tend to shift from consuming large amounts of grains and staple foods to meet their daily energy requirements cheaply, to replacing part of their staple diet with fruit and vegetables, and finally, most of all, with intake of greater proportions of fats, sugar, oils and animal produce.

Such dietary trends have seen a huge spike in heart attacks, stroke and diabetes. Excessive salt and fat consumption also links to an upward trend in non-communicable diseases, such as certain cancers, diabetes, heart disease and stroke.

Case study questions

- 1 Compare the growth in the number of overweight and obese adults in the developing world with that in high-income countries since 1980. Use data to support your answer.
- 2 Adults are classified as obese if their body mass index (BMI) is greater than 30. What is 'body mass index'? Research 'body mass index' and provide a brief overview of what is taken into account when making BMI classifications, as well as a weakness of this method.
- 3 List three diet-related diseases that have increased in prevalence as a result of the shift from traditional diets to diets with more animal produce, oils, fat and sugar.
- 4 'Lifestyles are growing increasingly sedentary, with people from rich and emerging middle-income countries more likely to be less active than ever.' Briefly explain what the term 'sedentary' means and how a sedentary lifestyle can lead to obesity.

Review and reflect

- 1 Define 'processed food'.
- 2 List the three additions that often make processed foods unhealthy.
- 3 Discuss what impact the increase in consumption of processed foods has had on health and wellbeing in low- and middle-income countries.
- 4 List and briefly discuss the factors that have resulted in an increase in the consumption of processed foods in low- and middle-income countries.

Chapter summary

- The social, economic and environmental characteristics of high-, middle- and low-income countries impact dramatically on health and health status.
- Low-income countries: low per-capita income, high poverty rates, high levels of malnutrition, poorly developed infrastructure, strong dependence on agriculture, and low levels of employment opportunities, equality, education, and literacy rates.
- Middle-income countries: moderate per-capita income, increasing industrialisation, inequality in relation to poverty, gender equality and employment, and reduced dependence on agriculture.
- High-income countries: high per-capita income, developed infrastructure and high literacy rates, highly industrialised and technologically advanced.
- The leading causes of death in low-income countries in 2015 were communicable diseases, maternal causes, conditions arising during pregnancy and childbirth, and nutritional deficiencies.
- Lower respiratory infections were among the leading causes of death in all income groups.
- Non-communicable diseases (NCDs) caused approximately 70% of all deaths in 2015, varying from 37% in low-income countries to 88% in high-income countries.
- Safe water can help to boost the economic growth of a country, reduce poverty, and dramatically improve health and wellbeing outcomes.
- Waterborne diseases, including diarrhoea, cholera and dysentery, are caused by contaminated water. Many children under 5 die each year as a result.
- Sanitation refers to the provision of facilities and services for the safe disposal of human urine and faeces. It also refers to the maintenance of hygienic conditions, such as garbage collection and wastewater disposal. Low-income countries typically have widespread inadequate sanitation, linked to high levels of disease.
- Generally speaking, if a country has high levels of poverty, life expectancy is low compared with countries where poverty levels are low.
- Many people in low-income countries experience inequality of outcomes, such as level of income or education. Females in particular often experience discrimination and poorer levels of income, education and health status.
- The increase in global marketing of tobacco, alcohol and processed foods in many low- and middle-income countries has increased the prevalence of non-communicable diseases. Many of these countries now face a double burden of disease.
- Tobacco use is a risk factor for chronic diseases, including cancer, lung diseases, and cardiovascular diseases.
- Approximately 3.3 million deaths globally every year result from harmful use of alcohol.
- 'Processed food' is any food altered from its natural state, for safety or convenience. Not all processed foods are unhealthy, but those that are (when eaten in excess) result in increased prevalence of diet-related diseases.

Exam-style questions with sample answers

- 1 List three characteristics of low-income countries. (3 marks)

Sample answer:

Low GNI per capita

Low levels of literacy / high rates of illiteracy

High dependence on foreign aid

- 2 Referring to the data in the table below, explain how the difference in GNI per capita could impact on the health and wellbeing of people living in Australia and those living in Niger. (4 marks)

GNI per capita, PPP (current international \$), 2013

Country	GNI per capita (\$)
Australia	44 330
Niger	890

Sample answer: In Australia, the GNI per capita is quite high (\$44 330), and as a result access to affordable food is good, resulting in low levels of malnutrition and associated conditions. It also means that life expectancy is high as people are more likely to be able to afford medication and health care, which can result in conditions being detected early and treated appropriately.

On the other hand, in Niger the GNI per capita is relatively low (\$890) and as a result access to food is poor for many people, and hence levels of malnutrition are high. This also is linked to a low life expectancy for those living in Niger as people struggle to afford quality housing, medication, access to health care and other essentials, meaning people are less likely to live long lives.

- 3 Referring to the data in the table below, compare the percentage of Australia's population using improved sanitation facilities with those of two other countries listed in the table. (2 marks)

Population using improved sanitation facilities (%), 2015

Country	Total
Australia	100
Chad	12.1
China	76.5
France	98.7
Lebanon	80.7
Niger	10.9
Sudan	25.4
Sweden	99.3
Uganda	19.1

(Source: WHO 2015, Global Health Observatory data repository, 'Exposure data by country', <http://apps.who.int/gho/data/node.main.46>)

Sample answer: In 2015, 100% of Australia's population used improved sanitation facilities, while only 10% of people living in Niger used improved sanitation facilities, and 80.7% of people living in Lebanon did so.

- 4 In 2015, 12% of the population of Chad used improved sanitation facilities. Discuss how poor access to improved sanitation facilities could result in health inequalities between Australia and Chad. **(4 marks)**

Sample answer: Because only 12% of Chad's population used improved sanitation facilities, that country would have higher levels of communicable disease than Australia due to many people being unable to wash their hands after defecating. This practice results in the spread of disease and higher levels of communicable diseases in the population. Bacteria are a major cause of diarrhoea in Chad, and bacterial disease can lead to an increase in under-5 mortality rates. In Australia, 100% of the population use improved sanitation facilities, resulting in a higher life expectancy than in Chad due to the fact that children are not dying prematurely from diseases linked to poor sanitation. This also results in lower mortality rates in Australia and higher life expectancy, as people aren't dying due to causes linked to poor sanitation.

Questions for you to practise

- List and describe two characteristics of middle-income countries. **(4 marks)**
- Referring to the data in the table below, state one similarity and one difference between high-income countries and low-income countries in relation to burden of disease. **(2 marks)**

Low-income countries			High-income countries		
	Cause	DALYs per 100 000 population*		Cause	DALYs per 100 000 population*
	All causes	59 978.70		All causes	30 045.60
1	Communicable & other Group I conditions	35 610.80	1	Non-communicable diseases	24 928.80
2	Non-communicable diseases	18 364.60	2	Cardiovascular diseases	6 381.70
3	Infectious & parasitic diseases	18 112.50	3	Malignant neoplasms	5 089.00
4	Neonatal conditions	7 735.00	4	Mental & behavioural disorders	3 687.00
5	Injuries	6 003.20	5	Injuries	3 070.60
6	Respiratory infections	5 655.50	6	Ischaemic heart disease	3 066.00
7	Lower respiratory infections	5 507.20	7	Musculoskeletal diseases	2 342.80
8	Unintentional injuries	4 593.30	8	Unintentional injuries	2 216.50
9	HIV/AIDS	4 089.40	9	Communicable & other Group I conditions	2 046.20
10	Diarrhoeal diseases	3 962.70	10	Stroke	1 696.60

*All ages, all years, both sexes

- In relation to one of the differences you listed in Question 2, identify one factor that contributes to this difference, and describe how it leads to this difference. **(2 marks)**



Chapter 8: Sustainability and human development

Key knowledge

- 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

Key skills

- 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

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Key terms

- economic sustainability
- environmental sustainability
- human development
- human development index (HDI)
- social sustainability
- sustainability

In this chapter

The concept of human development...page 222
Influencing human development page 223
Measuring human development:
the Human Development Index..... page 228
Advantages and limitations of the
Human Development Index page 237

Sustainability and health and
wellbeing page 238
Economic sustainability page 239
Social sustainability.....page 240
Environmental sustainability.....page 240
Sustainability and human
development page 241

The concept of human development

The United Nations Development Programme (UNDP) is a branch of the United Nations (UN) that works in approximately 170 countries to promote development. This work includes the reduction of poverty, and supporting countries in implementing programs and policies, such as the Sustainable Development Goals. The UNDP releases an annual *Human Development Report*, which analyses a range of factors across countries to determine the extent to which a country is fostering human development. Therefore, it makes sense to look to this organisation in order to get a sense of what **human development** means. In 1990 the UNDP stated that human development is about:

human development when people live in an environment that enables them to develop to their full potential and lead productive, creative lives

...creating an environment in which people can develop to their full potential and lead productive, creative lives in accord with 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...

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When we examine this definition, we can see that human development is about:

- creating an environment where people can develop to their full potential
- creating an environment where people can live productive, creative lives in accordance with their interests and needs, which includes:
 - expanding people's choices
 - enhancing people's capabilities
 - people having access to knowledge
 - people having access to health and a decent standard of living
 - people participating in the life of the community
 - people participating in decisions that affect their lives.



Weblink

LISTEN

Listen to Selim Jahan, Director of the Human Development Report Office, describe the concept of human development. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.



Getty Images/Art in All of Us/Anthony Asael

Figure 8.1 Human development is about expanding choices and having access to knowledge.

In 2015, 25 years after the first *Human Development Report*, the UNDP explained that the human development approach is about expanding the richness of human life, rather than simply the richness of the economy in which human beings live. This approach is focused on creating fair opportunities and choices for all people. The UNDP explains that these ideas are focused on three areas (UNDP 2016):

- **People:** the human development approach focuses on improving the lives people lead rather than assuming that economic growth will lead, automatically, to greater opportunities for all. Income growth is an important means to development, rather than an end in itself.
- **Opportunities:** human development is about giving people more freedom and opportunities to live lives they value. In effect this means developing people's abilities and giving them a chance to use them. For example, educating a girl would build her skills, but it is of little use if she is denied access to jobs, or does not have the skills for the local labour market. [Figure 8.2] looks at aspects of human development that are foundational (that is they are a fundamental part of human development); and aspects that are more contextual (that is they help to create the conditions that allow people to flourish). Three foundations for human development are to live a healthy and creative life, to be knowledgeable, and to have access to resources needed for a decent standard of living. Many other aspects are important too, especially in helping to create the right conditions for human development, such as **environmental sustainability** or equality between men and women.
- **Choices:** human development is, fundamentally, about more choice. It is about providing people with opportunities, not insisting that they make use of them. No one can guarantee human happiness, and the choices people make are their own concern. The process of development – human development – should at least create an environment for people, individually and collectively, to develop to their full potential and to have a reasonable chance of leading productive and creative lives that they value.

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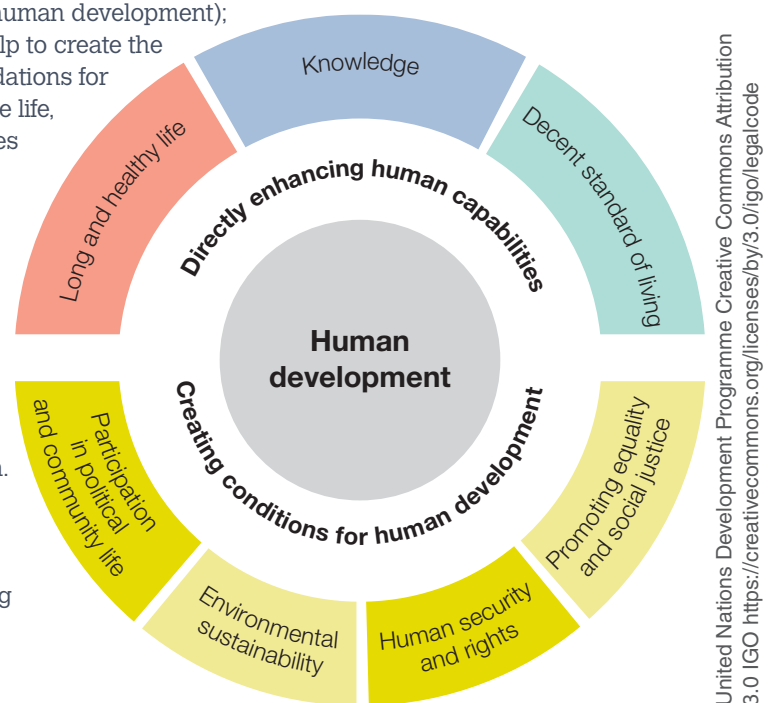


WATCH

Watch the UNDP 2016 video, 'Building a better future', to learn more about the UNDP. Access it direct from <http://hhdvce3and4.nelsonnet.com.au>

environmental sustainability

when the natural environment is conserved in a way that enables future generations to access its resources



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Figure 8.2 Human development

Influencing human development

A wide range of factors can influence whether or not an environment is created that will enhance or prevent individuals and populations from attaining high levels of human development. Data from the *Human Development Report 2015* (outlined in Figure 8.3) shows the many barriers that still exist for millions of people around the world, restricting individuals and populations and preventing them from achieving optimal levels of human development (UNDP 2015).

We will discuss five of the range of factors that can either promote or hinder the achievement of optimal levels of human development:

- access to education
- access to work
- lack of access to health care
- lack of access to safe water and sanitation
- peace.

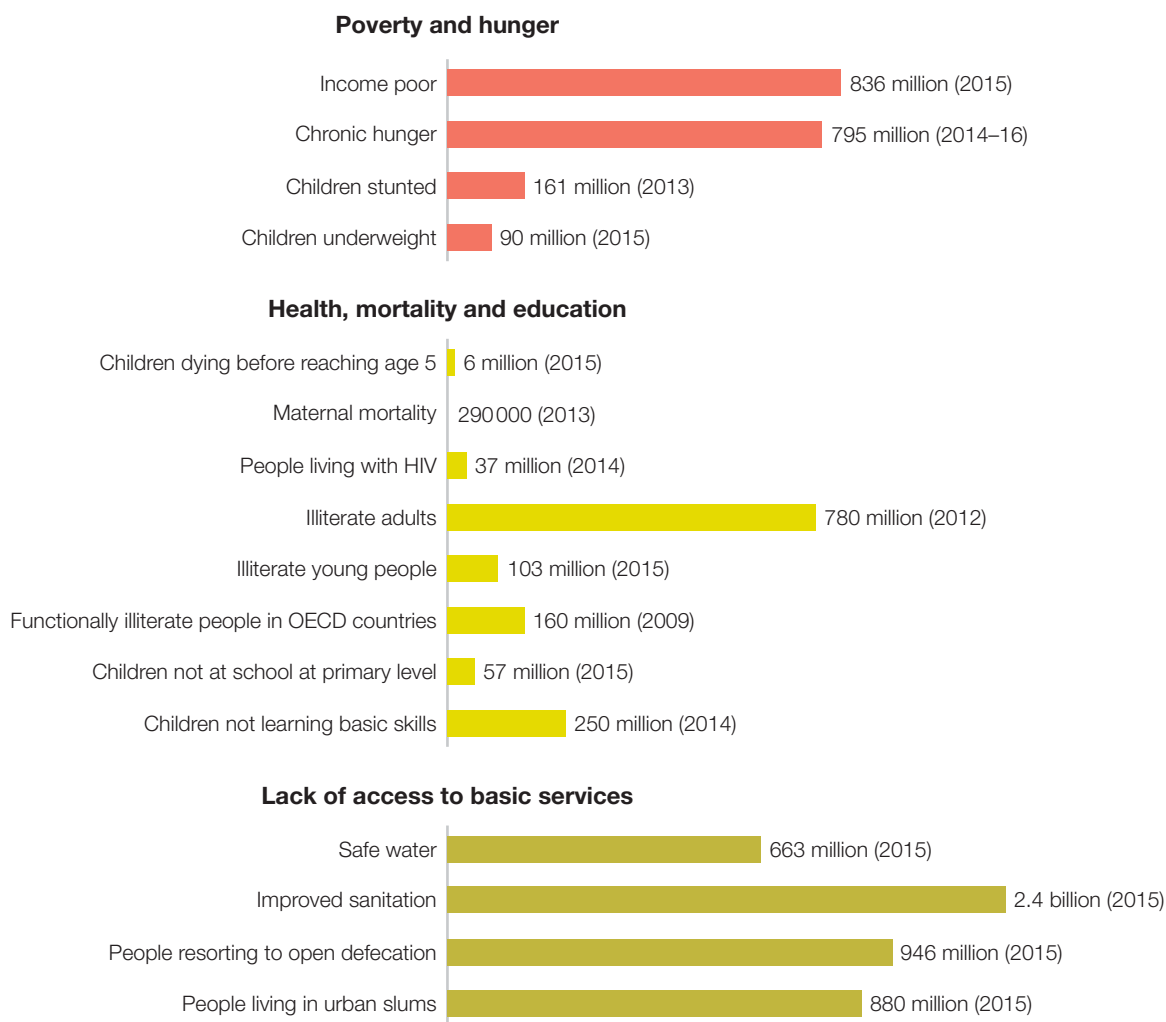


Figure 8.3 Extent of human deprivation in the world

Access to education

Access to education is vital to promoting human development. When both boys and girls attend primary school they have access to knowledge and can enhance their capabilities; for example, by developing their literacy and numeracy skills. Increased levels of education in a population means that people are more likely to be able to read, and this can expand their future opportunities, such as obtaining employment. In turn, this can provide the opportunity for an individual to develop to their full potential, and also to earn an income that will give them a decent standard of living.

Access to work

As shown in Figure 8.4, work and human development interact in a mutually beneficial way. Access to work generally provides an individual with the means to live a productive and creative life. Through work, people generally earn an income that allows them to afford resources, such as food and water, which contributes to them (and often their loved ones) having a decent standard of living. Work can also improve a person's knowledge and skills, and therefore enhance their capabilities.

CRITICAL FRIEND

Turn to the person next to you and ask them to outline how a lack of access to work may be detrimental to human development.

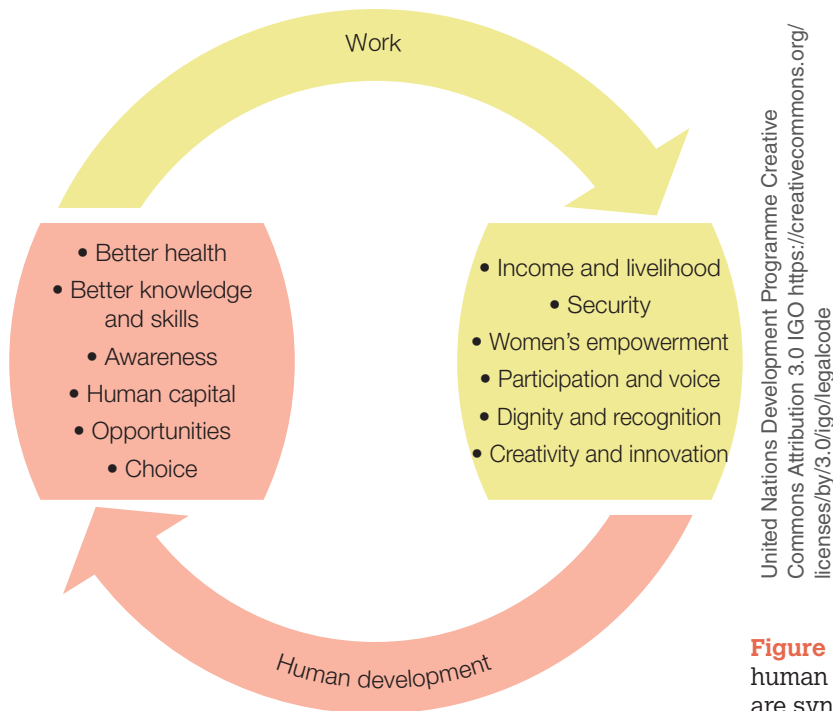


Figure 8.4 Work and human development are synergistic

Lack of access to health care

Health care allows people to receive treatment when they are unwell. It also allows people to receive preventative measures, such as immunisations, so that they can avoid becoming unwell in the first place. A lack of access to health care can affect human development significantly, as it increases the likelihood that people will become unwell and then be unwell for longer periods of time than if they had access to health care. When people are unwell they are less likely to be able to attend school and work, which reduces their ability to enhance their capabilities and develop to their full potential. Illness may also stop people from contributing



Shutterstock.com/Yusnizam Yusof

Figure 8.5 Preventative action such as spraying mosquitoes helps prevent the spread of diseases such as malaria and the Zika virus.

to their community. A lack of access to health care may prevent people from participating in decisions that affect their lives, such as a female's right to choose not to proceed with giving birth when she discovers she is pregnant.

Lack of access to safe water and sanitation

Without access to clean water and sanitation, people are prevented from achieving a decent standard of living and are more likely to develop health conditions such as cholera and diarrhoeal disease. When people are unwell from such conditions, they are often not well enough to attend school and work, and therefore miss opportunities that would help them enhance their capabilities and develop to their full potential.

Peace

Peace can be thought of as the absence of destabilising conflict or war within a country. The ability of a country to maintain peace is vital to ensuring that its people can go about their daily lives, pursuing their interests and needs without fear of death, destruction or injury. Peace means that a country's government can focus on investing in resources such as health and education, which contributes to people being well enough to participate in activities that allow them to develop to their full potential.

Learning tip

When a question asks about the impact of a particular factor (such as access to education) on human development, it is important to refer to phrases from the human development definition in your answer. These phrases include 'enhancing people's capabilities' and 'access to knowledge'.

Dreamstime.com/Richard Harvey



Figure 8.6 The lives of Syrian children have been affected by lack of peace in their country.

Review and reflect

- 1 Describe 'human development'.
- 2 In 2015, the Human Development Report Office stated that the human development approach is focused on creating fair opportunities and choices for all people. Describe the three areas, 'People', 'Opportunities' and 'Choices', which are relevant to the human development approach.
- 3 Explain how lack of access to education may be detrimental to an individual's ability to achieve an optimal level of human development.
- 4 Describe what steps a government may take to promote its citizens' levels of human development.
- 5 Outline why optimal levels of health and wellbeing are advantageous in achieving optimal levels of human development.

Case study

UNDP and the Global Fund sign US\$8.7m grant to scale up HIV prevention measures in Afghanistan

[In 2016] the United Nations Development Programme (UNDP) and the Global Fund signed a US\$8.7 million grant to scale up HIV prevention measures and treatment for people most at risk of contracting the virus in Afghanistan, including injecting drug users and prisoners.

Though HIV infection rates across the general population in Afghanistan are low, the epidemic continues to spread among key populations at higher risk of HIV. For example, injecting drug use is a major driver of HIV infections in Afghanistan, a country that is also the world's leading producer of opium and heroin.

A combination of injecting practices involving the use of non-sterile equipment, high-risk sexual behaviour, punitive policies and stigma towards people who inject drugs are fuelling the epidemic. The most recently available drug use survey showed that eight per cent of the population aged 15–64 is dependent on drugs, with significant increases in the number of people who use opium and heroin.

'Without reducing stigma associated with drug use, and implementing prevention programmes that treat every person with dignity, compassion, and respect, regardless of circumstance or condition, Afghanistan's efforts to curb the HIV epidemic will fall short. We need to go the extra mile and this new grant will help us do it,' said Jocelyn Mason, UNDP Senior Deputy Country Director in Afghanistan.

In addition, different sources suggest that men with high-risk sexual behaviour may play a larger role in HIV transmission than previously thought. They also experience stigma and discrimination in their own families and communities, and are confronted with punitive laws, prosecution and a lack of access to HIV prevention services.

The new Global Fund grant will be implemented in partnership with the Ministry of Public Health and the National AIDS Control Program, the Ministry of Interior Affairs, provincial health offices, and non-governmental organizations. It will provide treatment and care for people living with HIV, expand existing prevention services for the general population and focus on groups at higher risk. The grant will ... aim to keep HIV prevalence below 0.1 per cent among the general population, and below five per cent among key populations at high risk.

'Through this grant, the Government of Afghanistan will be able to build on previous achievements, expand and improve treatment and care for people living with HIV, accelerate prevention efforts and effectively reach vulnerable populations that are key to controlling and reversing the HIV epidemic.

This is an important contribution to the fight against HIV in Afghanistan,' says Dr. Najibullah Safi, Director General of Preventive Medicines of Ministry of Public of Government of Islamic Republic of Afghanistan.

Comprehensive harm reduction services for people who inject drugs will be provided under the grant, including in prison settings where needle and syringe exchange programmes are currently not allowed. The grant will increase availability and coverage of opioid substitution therapy (OST) through services in drop-in centres in communities and prisons. OST, which replaces illegal opiates with prescribed medicines, is an effective method to decrease HIV transmission by reducing risks associated to [sic] injection of drugs, and to foster adherence to HIV treatment among people who use drugs, while also improving their quality of life.

To address high levels of stigma and discrimination related to HIV and drug use, the grant will strengthen legal and policy environments in order to promote access to HIV prevention, treatment and support for people vulnerable to and affected by HIV, securing their meaningful involvement in the response to HIV in Afghanistan.

The grant will be key to achieving the national strategic plan for control of HIV and AIDS. It will also contribute to achieving the Sustainable Development Goals adopted in September 2015 by world leaders and in particular Goal 3 on Good Health and Well-being.

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AAP Image/AP Photo/Rafiq Maqbool

Figure 8.7 Support is being provided for injecting drug users to help reduce their risk of contracting and transmitting HIV.





Case study questions

- 1 Describe how having HIV in Afghanistan may affect a person's ability to achieve an optimal level of human development.
- 2 Explain how the cultural and social environment in Afghanistan may be contributing to increasing levels of HIV in high-risk populations.
- 3 Outline how the provision of the grant described in this case study may contribute to improving levels of health and wellbeing in Afghanistan.
- 4 Discuss whether or not you believe this grant will contribute to improving levels of human development in Afghanistan.

Learning fields

Working for the UNDP

Name: Jennifer Topping

Why do I like working for the UNDP?

- It's really a family. The moving experiences you share create a powerful bond. Many of the colleagues that I started with when we were 'kids' are sisters and brothers now, still with UNDP. It really feels like we've grown up together as a family.
- The diversity of the organization. Everywhere I've worked, the fantastic richness that comes from our organizational fabric is so impressive and endearing.
- The career and professional diversity. Within one organization you can change jobs seven or eight times, and, each time, feel like you've started a whole new career.

What's the most memorable occasion when you saw the positive impact your work had on the people in the country where you're based?

Since I have served twice in Mozambique, I have had the unique opportunity to witness the development of the country over time. I was able to see the beginning and end of UNDP's outstanding long-term support towards the massive de-mining undertaking. At the end of the war in 1993, Mozambique

was one of the largest and five most intensively land-mined countries in the world. Even with peace, no development could take place until people could move freely, rebuild homes, roads, and farms, attend school, or get to a doctor. After a relentless 20 year campaign, I was extremely proud to see Mozambique host the International Review Conference of the Anti-Personnel Landmine Convention (Ottawa Treaty) in 2014 and to see the country declared fully and officially mine-free in 2015.

What are some of the challenges of working in a large international civil service organization like UNDP and how do you manage them?

Mozambique is a dynamic, beautiful, warm and welcoming country, as are its people. It's also a country laden equally with burdens and opportunities – highly natural disaster prone but with rich natural resources, huge increases in school enrollment [sic] but very low human development overall. These contrasts are what makes working here both relevant and exciting. You need to be both pragmatic and innovative to respond to the tough challenges and keep up with the very rapid changes driving the country forward.

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Human Development Index (HDI) a tool developed by the UN to measure and rank countries' levels of social and economic development

Measuring human development: the Human Development Index

In order to be able to compare levels of human development across the globe, and to monitor whether or not a country may be improving its ability to create an environment for its citizens to develop to their full potential we need to be able to measure human development. The UNDP has developed a measurement system referred to as the **Human Development Index (HDI)**, which takes into consideration a number of factors that are likely to contribute to levels of human development in a country. The HDI is defined using:

- the three dimensions of a long and healthy life, knowledge and a decent standard of living
- the four indicators of life expectancy at birth, mean years of schooling, expected years of schooling and gross national income per capita.

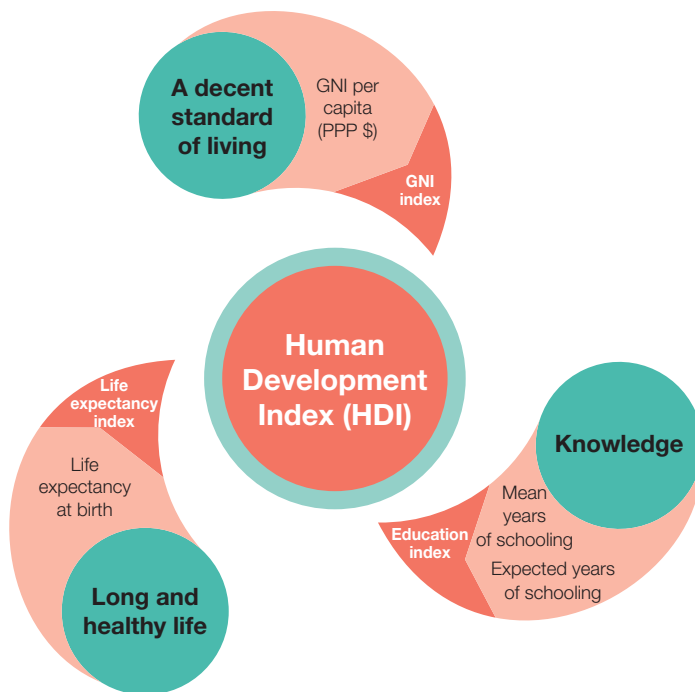


Figure 8.8 The HDI and its dimensions (green) and indicators (light pink)

As you can see in Table 8.1, each dimension has one or more corresponding indicators, each of which are involved in a calculation that produces a number between 0 and 1. This number is then used to rank countries' levels of human development. The four HDI indicators are:

- *life expectancy at birth* – an indication of how long a person can expect to live; that is, the number of years of life remaining to a person at birth if death rates do not change
- *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 to be achieved 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.

Table 8.1 Components of the HDI

Dimension	Indicators
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



WATCH

Watch the video 'How do we measure poverty?' The video, which discusses the HDI, was created by World Vision in 2015. Link directly via <http://hhdvce3and4.nelsonnet.com.au>.

The value generated by calculating the HDI places a country into one of four categories:

- very high human development
- high human development
- medium human development
- low human development.

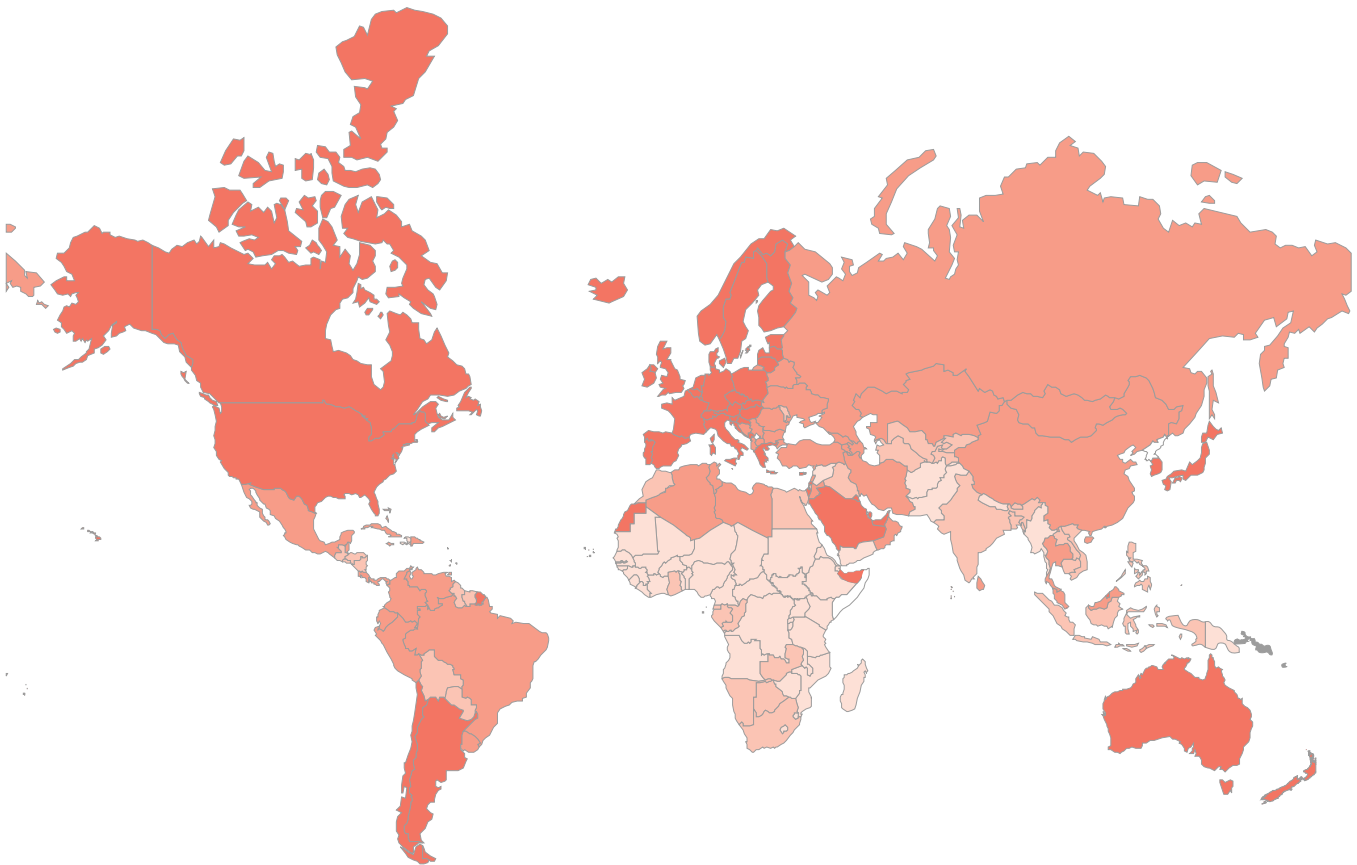
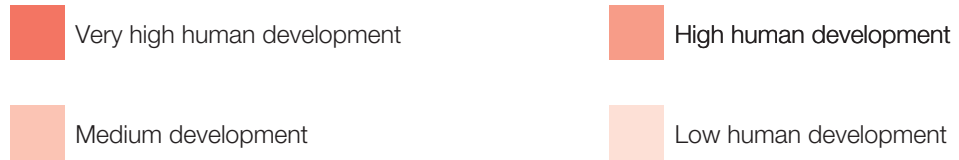


Figure 8.9 A global perspective on levels of human development, 2014 (source: UN Human Development Reports, 'International human development indicators')

Learning tip

When SAC and exam-style questions ask about the HDI, they are often testing students' knowledge of the three dimensions and four indicators. Therefore, if you are explaining that a country (e.g. Norway) has very high levels of human development, one of the indicators you can link this to is the high gross national income per capita of its citizens.

Table 8.2 Comparison of some countries' HDI and the indicators that make up this value (from 2014). Countries are grouped into the four human development categories.

	HDI	Life expectancy at birth (years)	Expected years of schooling (years)	Mean years of schooling (years)	GNI per capita (2011 PPP\$)
Very high human development					
1 Norway	0.944	81.6	17.5	12.6	64 992
2 Australia	0.935	82.4	20.2	13.0	42 261
3 Switzerland	0.930	83.0	15.8	12.8	56 431
4 Denmark	0.923	80.2	18.7	12.7	44 025
5 Netherlands	0.922	81.6	17.9	11.9	45 435
6 Germany	0.916	80.9	16.5	13.1	43 919
6 Ireland	0.916	80.9	18.6	12.2	39 568
8 United States	0.915	79.1	16.5	12.9	52 947
9 Canada	0.913	82.0	15.9	13.0	42 155
9 New Zealand	0.913	81.8	19.2	12.5	32 689
High human development					
50 Belarus	0.798	71.3	15.7	12.0	16 676
50 Russian Federation	0.798	70.1	14.7	12.0	22 352
52 Oman	0.793	76.8	13.6	8.0	34 858
52 Romania	0.793	74.7	14.2	10.8	18 108
52 Uruguay	0.793	77.2	15.5	8.5	19 283
55 Bahamas	0.790	75.4	12.6	10.9	21 336
56 Kazakhstan	0.788	69.4	15.0	11.4	20 867
Medium human development					
106 Botswana	0.698	64.5	12.5	8.9	16 646
107 Moldova (Republic of)	0.693	71.6	11.9	11.2	5 223
108 Egypt	0.690	71.1	13.5	6.6	10 512
109 Turkmenistan	0.688	65.6	10.8	9.9	13 066
110 Gabon	0.684	64.4	12.5	7.8	16 367
110 Indonesia	0.684	68.9	13.0	7.6	9 788
112 Paraguay	0.679	72.9	11.9	7.7	7 643
113 Palestine, State of	0.677	72.9	13.0	8.9	4 699
Low human development					
145 Kenya	0.548	61.6	11.0	6.3	2 762
145 Nepal	0.548	69.6	12.4	3.3	2 311
147 Pakistan	0.538	66.2	7.8	4.7	4 866
148 Myanmar	0.536	65.9	8.6	4.1	4 608
149 Angola	0.532	52.3	11.4	4.7	6 822
150 Swaziland	0.531	49.0	11.3	7.1	5 542

HDI: Human Development Index; GNI: gross national income; PPP: purchasing power parities

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The UNDP has released an annual report updating the HDI for nearly all countries around the globe, since 1990. The ranking of countries does not generally change dramatically from year to year, as improvements in the four indicators can take some time. The UN monitors changes in the HDI and, as you can see in Figure 8.10, the level of human development in most low- to middle-income regions has risen fairly constantly over the past 25 years.

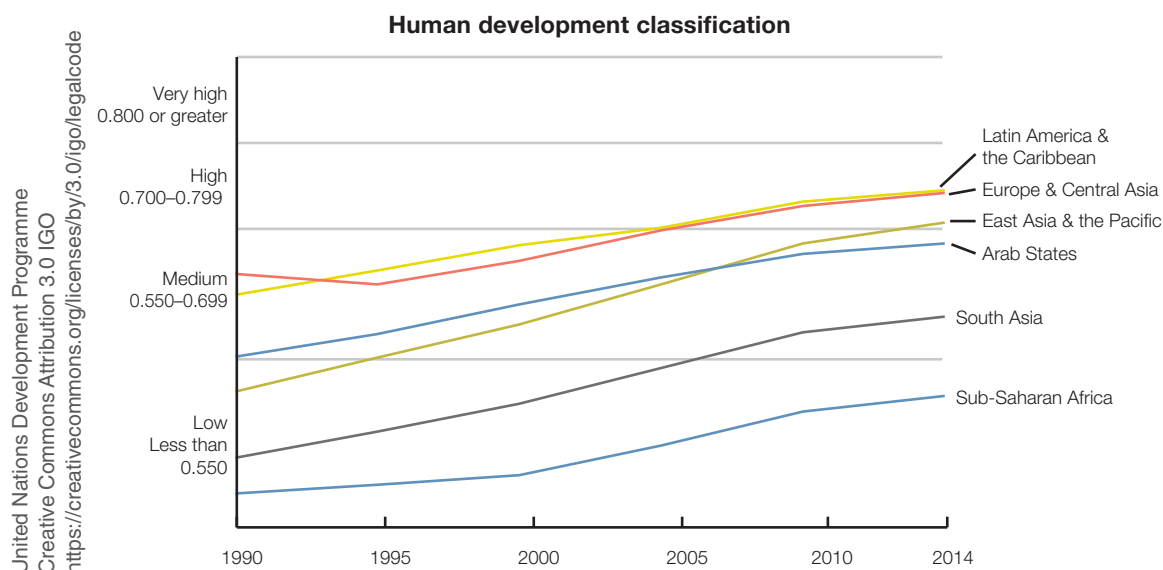


Figure 8.10 Progress on the Human Development Index for developing regions, 1990–2014

Table 8.3 UNDP low- to middle-income regions country allocations

Region	Countries that belong to region
Arab States	Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, State of Palestine, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, Yemen
East Asia and the Pacific	Cambodia, China, Fiji, Indonesia, Kiribati, Democratic People's Republic of Korea, Lao People's Democratic Republic, Malaysia, Marshall Islands, Federated States of Micronesia, Mongolia, Myanmar, Nauru, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu, Viet Nam
Europe and Central Asia	Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Montenegro, Serbia, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, Uzbekistan
Latin America and the Caribbean	Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Plurinational State of Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Bolivarian Republic of Venezuela
South Asia	Afghanistan, Bangladesh, Bhutan, India, Islamic Republic of Iran, Maldives, Nepal, Pakistan, Sri Lanka
Sub-Saharan Africa	Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Democratic Republic of the Congo, Côte d'Ivoire, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, South Africa, South Sudan, Swaziland, United Republic of Tanzania, Togo, Uganda, Zambia, Zimbabwe

Another way of representing the change in the HDI for low- to middle-income regions is shown in Figure 8.11. As indicated by the key, the tree getting taller between 1990 and 2014 indicates an increase in HDI.

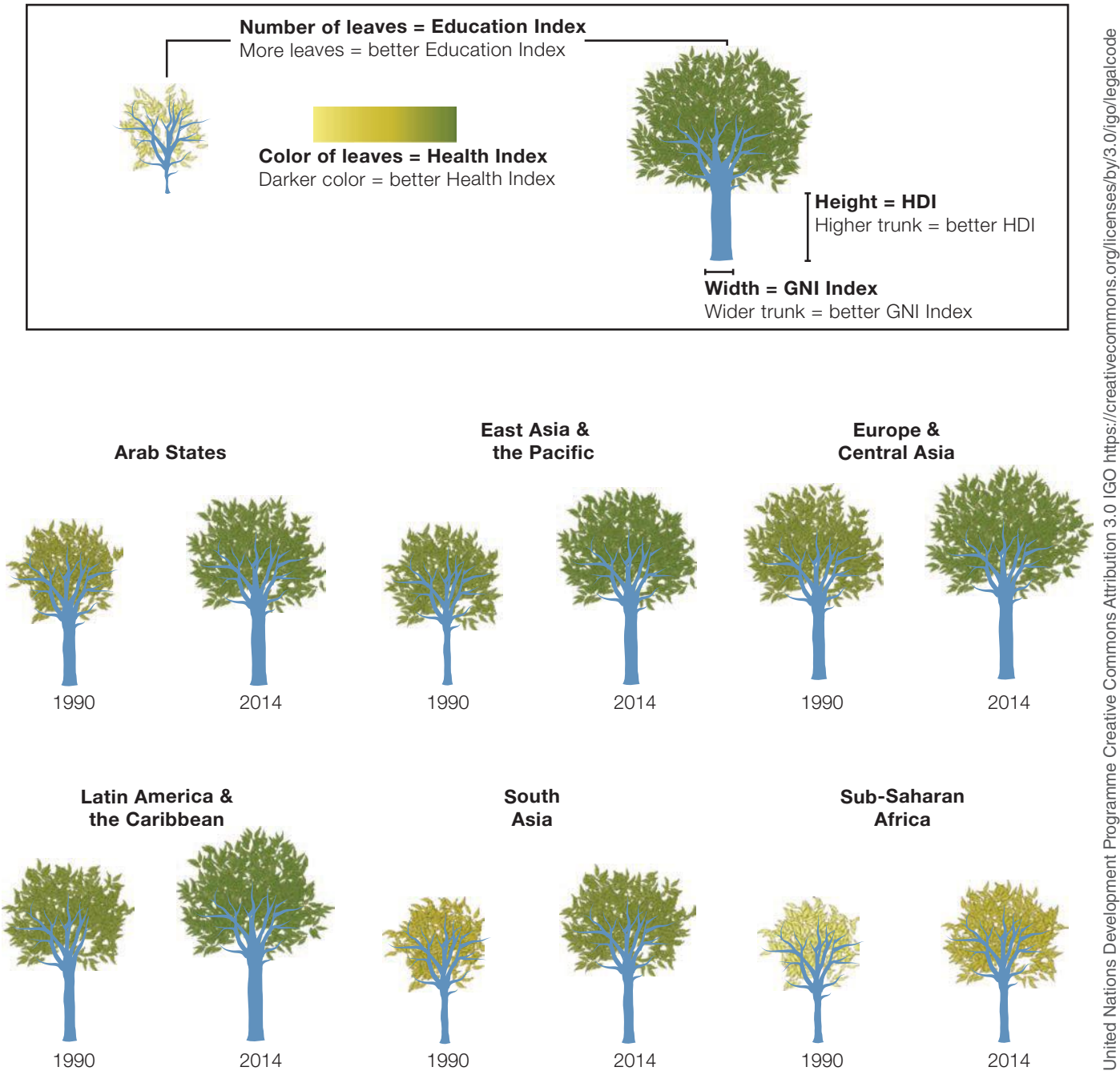
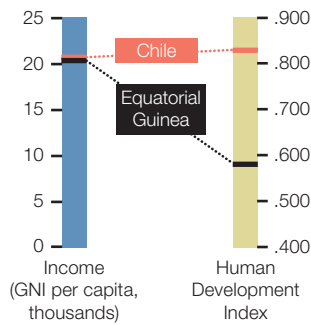


Figure 8.11 Changes in the HDI and other indexes from 1990 to 2014 in developing regions

a Similar income, different HDI value



None of the HDI indicators can be used alone to determine a country's level of human development according to the HDI. As shown in Figure 8.12, two countries can have a very similar income (measured by GNI per capita) but a very different HDI (Chile and Equatorial Guinea), or a very similar HDI and a very different income (Gabon and Indonesia).

Frequently asked questions about the HDI

The following questions and answers are from the UNDP's *Human Development Report 2015*.

What does the Human Development Index tell us?

The Human Development Index (HDI) was created to emphasize that expanding human choices should be the ultimate criteria for assessing development results. Economic growth is a mean [sic] to that process, but is not an end by itself. The HDI can also be used to question national policy choices, asking how two countries with the same level of Gross National Income (GNI) per capita can end up with different human development outcomes.

For example, Malaysia has GNI per capita higher than Chile, but in Malaysia, life expectancy at birth is about 7 years shorter and expected years of schooling is 2.5 years shorter than Chile, resulting in Chile having a much higher HDI value than Malaysia. These striking contrasts can stimulate debate about government policy priorities.

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b Same HDI value, different income

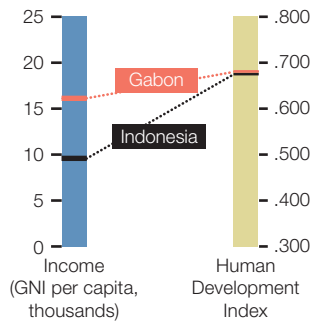


Figure 8.12 Comparing HDI indicators and the HDI

Did the HDI rankings change for many countries in 2015?

In general, the rankings change a little between two successive years because of the nature of the HDI indicators – with the exception of gross national income per capita, other indicators change very slowly year to year.

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CRITICAL FRIEND

Find a friend in your class and ask them to outline how two countries with the same life expectancy may have a different HDI.

Where do data for HDI calculations come from?

Life expectancy at birth is provided by the UN Population Division in the UN Department of Economic and Social Affairs (UNDESA); mean years of schooling are predominantly based on UNESCO Institute for Statistics (UIS) educational attainment data; expected years of schooling is provided by UIS; and GNI per capita ... by the World Bank and the International Monetary Fund.

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What is an 'imputed' indicator...?

[If an indicator is missing, the Human Development Report Office] estimates the missing value using an alternative source or a cross-country regression model. [The estimated values along with the method and/or model used are first communicated

to the affected country before using it for the computation of the HDI.] For example, mean years of schooling (MYS) for Andorra and Liechtenstein is based on MYS of neighbouring countries Spain and Switzerland, respectively.

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Can GNI per capita be used to measure human development instead of the HDI?

No. Income is a means to human development, and not the end. The GNI per capita only reflects average national income. It does not reveal how that income is spent, nor whether it translates to better health, education and other human development outcomes. In fact, comparing the GNI per capita rankings and the HDI rankings of countries can reveal much about the results of national policy choices.

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For example, Gabon with a GNI per capita of \$16367 has a GNI rank of 68, but an HDI rank of 110 – the same as that of Indonesia, whose GNI per capita is only \$9788.

Can the HDI alone measure a country's level of human development?

No. The concept of human development is much broader than what can be captured by the HDI [alone].

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As a simple summary index, the HDI is designed to reflect average achievements in three basic aspects of human development: leading a long and healthy life, being knowledgeable, and enjoying a decent standard of living. Other aspects of human development are more difficult to measure, and further work needs to be done in developing accurate ways to measure such aspects.

Are the HDI dimensions weighted evenly?

The HDI assigns equal weight to all three dimension[s].

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What are the criteria for a country to be included in the HDI?

The Human Development Report Office strives to include as many UN member countries as possible in the HDI. To include a country in the HDI we need recent, reliable and comparable data for all three dimensions of the Index.

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Case study

Africa rising. A hopeful continent

Three students are hunched over an iPad at a beach café on Senegal's Cap-Vert peninsula, the westernmost tip of the world's poorest continent [Africa]. They are reading online news stories about Moldova, one of Europe's most miserable countries. One headline reads: 'Four drunken soldiers rape woman'. Another says Moldovan men have a 19% chance of dying from excessive drinking and 58% will die from smoking-related diseases. Others deal with sex-trafficking. Such stories have become a staple of Africa's thriving media ... They inspire pity and disbelief, just as tales of disease and disorder in Africa have long done in the rich world.

Sitting on the outskirts of Dakar, Senegal's capital, the three students sip cappuccinos and look out over a paved road shaded by palm trees where restaurants with white tablecloths serve green-spotted crabs. This is where slave ships used to depart for the New World. 'Way over there, do they know how much has changed?' asks one of the students, pointing beyond the oil tankers on the distant horizon.

[The stories of modern-day Africa are often] at odds with Western images of African life. War, famine and dictators have become rarer. People still struggle to make ends meet, just as they do in China and India. They don't always have enough to eat, they may lack education, they despair at daily injustices and some want to emigrate. But most Africans no longer fear a violent or premature end and can hope to see their children do well. That applies across much of the continent, including the sub-Saharan part ...



Figure 8.13 Sub-Saharan Africa is the green-coloured area on this map.

African statistics are often unreliable, but broadly the numbers suggest that human development in sub-Saharan Africa has made huge leaps. Secondary-school enrolment grew by 48% between 2000 and 2008 after many states expanded their education programmes and scrapped school fees. Over the past decade malaria deaths in some of the worst-affected countries have declined by 30% and HIV infections by up to 74%. Life expectancy across Africa has increased by about 10% and child mortality rates in most countries have been falling steeply.

A booming economy has made a big difference. Over the past ten years real income per person has increased by more than 30%, while in the previous 20 years it shrank by nearly 10%. Africa is the world's fastest-growing continent just now. Over the next decade its GDP is expected to rise by an average of 6% a year, not least thanks to foreign direct investment (FDI). FDI has gone from \$15 billion in 2002 to \$37 billion in 2006 and \$46 billion in 2012 ...

Many goods and services that used to be scarce, including telephones, are now widely available. Africa has three mobile phones for every four people, the same as India. By 2017 nearly 30% of households are expected to have a television set, an almost fivefold increase over ten years. Nigeria produces more movies than America does. Film-makers, novelists, designers, musicians and artists thrive in a new climate of hope. Opinion polls show that almost two-thirds of Africans think this year will be better than last, double the European rate.

...

Ways to salvation

Where democracy has struggled to establish itself, African countries have taken three other paths to improving their citizens' lives. First, many have stopped fighting. War and civil strife have declined dramatically. Local conflicts occasionally flare up, but in the past decade Africa's wars have become a lot less deadly. Perennial hotspots such as Angola, Chad, Eritrea, Liberia and Sierra Leone are quiet, leaving millions better off, and even Congo, Somalia and Sudan are much less violent than they used to be. Parts of Mali were seized by Islamists last year, then liberated by French troops in January, though unrest continues. The number of coups, which averaged 20 per decade in 1960–90, has fallen to an average of ten.

- Second, more private citizens are engaging with politics, some in civil-society groups, others in aid efforts or as protesters. The beginnings of the Arab spring in north Africa two years ago inspired the rest of the continent. In Angola youth activists invoke the events farther north.
- In Senegal a group of rap artists formed the nucleus of the coalition that ousted Mr Wade.

Third, Africa's retreat from socialist economic models has generally made everyone better off. Some countries, such as Ethiopia and Rwanda, still put the state in the lead. Meles Zenawi, Ethiopia's prime minister from 1995 until his death last year, achieved impressive gains by taking development





into his own (occasionally bloodstained) hands. Others, such as Kenya and Nigeria, have empowered private business by removing red tape. Yet others are benefiting from a commodities boom, driven by increased demand from China, which has become Africa's biggest trading partner. Over the past decade African trade with China has risen from \$11 billion to \$166 billion. Copper-rich Zambia and oil-soaked Ghana are using full coffers to pay for new schools and hospitals, even if some of the money is stolen along the way.

...

Another decade from now a traveller may well see an end to hunger in some African countries, steeply rising agricultural production in others, the start of industrial manufacturing for export, the emergence of a broad retail sector, more integrated transport networks, fairer elections, more effective governments, widespread access to technology even among many of the poor and ever-rising commodity incomes. Not everywhere. This report covers plenty of places where progress falls short. But their number is shrinking.



Shutterstock.com/Anton_Ivanov

Figure 8.14 A Makoni organic farmer in Zimbabwe

Wait for it

The biggest reason to be hopeful is that it takes time for results from past investment to come through, and many such benefits have yet to materialise. Billions have already been put into roads and schools over the past decade; the tech revolution has only just reached the more remote corners of the continent; plenty of new oilfields and gold mines have been tapped but are not yet producing revenues. The aid pipeline too is fairly full. The Bill and Melinda Gates Foundation alone has invested \$1.7 billion in Africa since 2006 but acknowledges that 'it takes years and years to shift the system.' Some aid will be wasted, some new roads will remain empty and more than a few barrels of oil will be stolen. Yet while currently not even half of Africa's countries are what the World Bank calls 'middle income' (defined as at least \$1000 per person a year), by 2025 the bank expects most African countries to have reached that stage.

The Economist 2013, 'Special report: emerging Africa; Africa rising. A hopeful continent', 2 March 2013, <http://www.economist.com/news/special-report/21572377-african-lives-have-already-greatly-improved-over-past-decade-says-oliver-august>

Case study questions

- 1 Outline some of the recent improvements in Africa that would have contributed to a steady rise in the HDI across the continent in the past 25 years.
- 2 Explain some factors that would still be preventing people in Africa from reaching optimal levels of human development.
- 3 Describe how a reduction in violence in Africa may be promoting health and wellbeing and, in turn, human development.
- 4 Predict the change in levels of the HDI across Africa in the next 25 years. Justify your prediction.

Advantages and limitations of the Human Development Index

The HDI is not a perfect measure of human development, but it would be difficult to find a measure that is. Encompassing the three broad dimensions of a long and healthy life, knowledge and a decent standard of living, the HDI provides a relatively comprehensive indication of a country's ability to create an environment where people can develop to their full potential. The HDI has been in use for over 25 years and is one of the few statistics that can be reflected on to examine changes in country's ability to contribute to the human development of its people over time. Below are listed some commonly discussed advantages and disadvantages of having a measure of human development such as the HDI.

Advantages

- There is widespread use of the HDI and this makes it easier to compare development levels.
- Global patterns can be observed from the HDI data over time.
- The HDI does not concentrate solely on economic development, but also takes into consideration other ways of measuring human development.
- The HDI may help to give a country's government policy direction (towards the indicators) in order to improve levels of human development.

Disadvantages

- The HDI is not a comprehensive measure of human development. It focuses on three basic dimensions of human development and does not take into account a number of other important dimensions.
- Data sourced from some low-income countries may be unreliable and difficult to confirm.
- The measurements used may seem odd, because there are other ways to measure the quality of health and education.
- GNI does not measure unequal distribution within a country.
- There is no indication in the education index about equal access to education for all population groups in a country – entry of wealthy students through the education system can hide the fact that it may be difficult for children in poorer families to enter primary education.
- HDI reflects long-term changes, such as life expectancy, and may not accurately reflect recent short-term changes.
- Within a country, there may be only a few individuals with high incomes that are increasing the average income value.

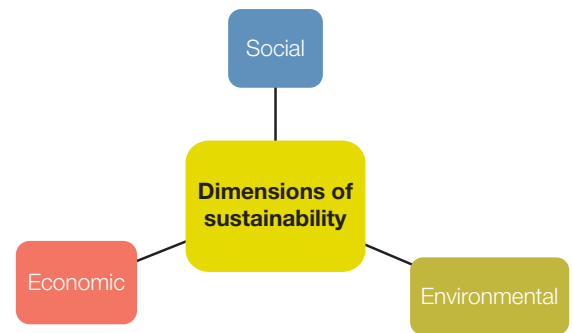
Review and reflect

- 1 Describe the 'Human Development Index'.
- 2 Explain why monitoring global human development using the HDI can be useful in promoting levels of human development around the world.
- 3 Explain the difference between the indicators of mean years of schooling and expected years of schooling.
- 4 **a** List two advantages and two disadvantages of the HDI.
b For each disadvantage you identified in part **a**, suggest how it might overcome in order to improve the HDI as a measure.
- 5 Outline why governments may want to look further than the HDI when assessing levels of human development in their country.

Sustainability and health and wellbeing

Most countries belong to the United Nations, the international organisation founded to promote global cooperation. With the launch in 2015 of the Sustainable Development Goals, the UN renewed its commitment to working towards a sustainable world.

Sustainability is described by the UN as 'meeting the needs of the present without compromising the ability of future generations to meet their own needs'. As countries increase consumption, it is increasingly challenging to satisfy this desire without harming the planet. The UN often references the three dimensions of sustainability – economic, social and environmental – and how efforts in these dimensions can promote health and wellbeing.



sustainability when current needs are met without preventing future generations from meeting their needs

Economic sustainability

Economic sustainability means using resources efficiently so that there is economic growth over time, allowing future generations to earn an income. The ability of people to earn an income allows governments to collect taxes, and reinvest into communities. This reinvestment contributes to further trade and employment opportunities in the country, thereby promoting **economic sustainability**.

Factors that contribute to economic sustainability include:

- establishment of businesses in the private sector that will lead to job creation
- investment in infrastructure by both public and private sectors, which may create jobs and contribute to the movement of goods and people
- investment in policies that promote working conditions that boost the economy – minimum wages, wage equality between men and women, enterprise bargaining agreements, removal of unnecessary and costly red tape.

Economic sustainability promotes health and wellbeing in numerous ways. With a strong and growing economy, more jobs will be available in a country and therefore more people will be working. Individuals can earn an income and governments can generate tax revenue. When people are earning an income, they are better able to afford food, water and health care, all of which promote physical health by ensuring the body receives adequate nutrients to function effectively. When people can access treatment when they are unwell, the impact of disease is reduced. Governments can reinvest tax revenue into areas such as education and infrastructure. Such infrastructure enables people to get to and from work and school and contribute to their community, increasing connectedness and promoting spiritual health.

economic sustainability using resources efficiently so future generations are able to earn an income



Figure 8.15 Increasing numbers of women are participating in paid work in low-income countries, and this is increasing economic growth.

social sustainability accessing social resources in a way that allows ongoing access by the community in future

Social sustainability

Social sustainability means ensuring that future generations have access to social resources such as education, political stability and human rights. When people are educated, they are more likely to contribute to their communities by sharing their knowledge and skills, and this helps to enhance the knowledge and capabilities of others.

Factors that contribute to social sustainability include:

- access to education
- upholding human rights
- access to decent employment
- political stability
- policies that protect against discrimination and promote equality
- access to health care.

If a society invests in social resources such as education and training, this is likely to enhance a community's health and wellbeing. For example, people who have the opportunity to receive an education are likely to have the skills to interact and communicate with each other, sharing their knowledge and teaching others new skills. This can enhance the social health of a community. Educated people are more likely to be employed and therefore have access to income and be able to afford a decent standard of living, therefore reducing their day-to-day stress and promoting mental health. When human rights such as the right to freedom and the right to freedom of religion are respected and promoted, people are more likely to be able to engage in activities that help them connect with others and their community, promoting spiritual health.



Figure 8.16 Education is vital to social sustainability.

Environmental sustainability

Environmental sustainability relates to monitoring and preserving resources so they are available for use by future generations. These resources include clean water for drinking and bathing, fish and other wild animals used for food, coal used to generate energy, and resources such as timber to make shelter and other household products.

Factors that contribute to environmental sustainability include:

- how resources taken from the environment can be used sustainably
- policies that promote the use of renewable energy
- personal use of products
- investment in 'green' technology.

A society that appropriately considers environmental sustainability is likely to use resources from the environment in a way that considers the ability of such resources to renew naturally and therefore be present to promote health and wellbeing for future generations. Sustainable use of resources such as food and water that are taken from the environment will allow the physical health of future generations to flourish. This is because these resources will be available on an ongoing basis for people to eat and drink and will therefore enable the efficient functioning of their bodies and good physical health. When the environment is respected and maintained, it can act as a place of stress relief and restoration for people who enjoy being part of nature and connecting with the earth, and in this way it can promote spiritual health.

Learning tip

When a SAC or exam question requires you to outline how a factor promotes sustainability, look at the mark allocation for an indication of how many dimensions of sustainability you need to refer to in your answer. Generally one mark is allocated per dimension.



image folk/Environmental Images

Figure 8.17 It is important that we take from the environment in a sustainable way.

Sustainability and human development

The United Nations launched the Sustainable Development Goals in 2015. (These goals are listed in Chapter 10.) A clear link between sustainability and development is obvious from the name. When governments, private companies and individuals act in a sustainable manner, this is more likely to ensure that appropriate resources and an appropriate environment will be present in the future for all people to reach optimal levels of human development. Examples of how the three dimensions of sustainability may promote human development are discussed below.

Social sustainability

Political stability contributes to social sustainability. In a stable political environment, resources can be invested in areas such as education, health and job creation. When governments are able to focus their resources on these areas, this can increase the numbers of children in school, people in work and healthy people within a community. This means that people are more likely to be learning skills and

CRITICAL FRIEND

Ask the person next to you to outline two examples of how a country's lack of economic sustainability may be detrimental to human development.



Figure 8.18 Men running a street stall in China. Work is important in enhancing human development.



WATCH

Watch the video 'What is sustainable development?' made by the United Nations in 2015. You can link direct via <http://hhdvce3and4.nelsonnet.com.au>

acquiring knowledge that will enhance their capabilities, to earn an income that will enable them to access a decent standard of living, and to have access to health care, all of which enable people to develop to their full potential.

Economic sustainability

Investing in government policies that promote working conditions is likely to contribute to economic growth and promote human development. Such policies may include legislating a minimum wage for a country or state. This results in fewer people being exploited in the workplace and more people receiving decent pay for their work. When people are able to access an adequate income, they are more likely to be able to afford resources that promote a decent standard of living – such as the ability to afford food, clean water, education and health care. When people are working they are contributing to their community. The income this work generates makes them better able to participate in decisions that affect their lives and therefore more likely to experience higher levels of human development.

Environmental sustainability

Investing in 'green' technology, such as those that use renewable sources to generate energy, is likely to be positive for human development. Such investments are less likely to contribute to rising global temperatures and therefore less likely to cause instability in the global climate. This means that more people will be able to go about their daily lives, attending school and work, in an environment that is stable and promotes human development. When people can choose to obtain the energy they need from renewable sources, this expands their choices and means they are better able to participate in decisions that may affect their lives.

Case study

UN implores urgent action to end poaching crisis

On 3 March 2016 the world marked the third World Wildlife Day, using the theme 'The future of wildlife is in our hands', and the UN announced plans for a global coalition campaign to end the illegal trade in wildlife.

UN Secretary-General Ban Ki-moon called on UN agencies, CITES [the Convention on International Trade in Endangered Species of Wild Fauna and Flora] and partners to provide a coordinated response to wildlife crime and spread the message that there should be zero tolerance for poaching.

'Time is running out to save some of the world's most iconic species,' he said. 'Much more needs to be done by key actors on all continents and across sectors to combat poaching and address both the demand and supply of illegal wildlife products.'

Driven by growing demand for illegally sourced wildlife products, the illicit trade has in recent years escalated into a global environmental crisis, pushing several species to the brink of extinction.

It is estimated that rhino poaching in South Africa has increased by as much as 8000 per cent between 2007 and 2014.





The pangolin, also known as the scaly anteater, is considered to be the most trafficked mammal on earth, with over a million animals taken from the wild in the past decade.

Trade in live great apes, such as chimpanzees, gorillas and orangutans, is also of concern, especially as for every live animal illegally taken from the wild there are many more killed during capture and transport.

The global effort to end illegal trade in wildlife received a boost last year, as the UN General Assembly adopted a resolution urging member states to classify illicit trafficking in wildlife as a serious criminal offence. This year, the UN calls for strong political commitments to be put into action through collective efforts of governments and citizens around the world.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora has made substantial progress to combat illegal trade in ivory through the preparation, implementation and review of National Ivory Action Plans by 19 key countries affected by the illicit trade.



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Figure 8.19 Elephants are often the target of poachers.

In May 2015, the cross-continent Operation Cobra III brought together enforcement agencies from range, transit and destination countries, resulting in 139 arrests and more than 247 seizures, which included elephant ivory, medicinal plants, rhino horns, pangolins and many more.

But more remains to be done. According to the latest analysis of illegal killing of elephants for 2015 by the CITES Secretariat, the overall poaching levels of African elephants remains alarmingly high.

The Global Coalition campaign ... is a joint effort by the UN Environment Programme (UNEP), the UN Development Programme (UNDP), the UN Office on Drugs and Crime (UNODC), CITES and other partners.

The campaign will call on individuals, businesses, civil society and academia to use their spheres of influence to end the illicit trade in wildlife and for governments to meet and scale up their recent commitments.

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Case study questions

- 1 List the dimension of sustainability that is the focus of this case study.
- 2 Describe how animal poaching may affect the dimension of sustainability you named in Question 1.
- 3 How may the extinctions of animal species caused by animal poaching eventually have an impact on human health and wellbeing?
- 4 Explain why a global coalition is likely to be needed to reduce levels of animal poaching.

Review and reflect

- 1 What is 'sustainability' according to the UN?
- 2 Explain the differences between the three dimensions of sustainability.
- 3 Describe how social sustainability may promote social health.
- 4 Outline how a lack of environmental sustainability may be detrimental to levels of human development across the globe.

Chapter summary

- The human development approach as outlined by the Human Development Report Office in 2015 is focused on creating fair opportunities and choices for all people. These ideas are focused on people, opportunities and choices.
- The human development approach focuses on improving the *lives people lead* rather than assuming that economic growth will automatically lead to greater opportunities for all. Income growth is an important means to development, rather than an end in itself.
- Human development is about giving people *more freedom and opportunities* to live lives they value. This means developing people's abilities and giving them a chance to use them.
- Human development is about *more choice*. The process of human development should create an environment for people to develop to their full potential.
- The annual *Human Development Report* ranks countries according to their level of human development using the Human Development Index (HDI). The four levels of human development used in the report are: very high, high, medium and low.
- Advantages of the HDI:
 - it is widely used, which makes it easy to compare development levels
 - it considers several ways to measure human development, not just economics
 - it may help a country's government policy direction (towards the indicators) to improve human development levels.
- Limitations of the HDI:
 - it is not a comprehensive measure; it focuses only on the basic dimensions of human development
 - data sourced from some low-income countries may be difficult to confirm
 - it reflects long-term changes (e.g. life expectancy) and might not accurately reflect recent short-term changes.
- The UN defines *sustainability* as '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, environmental and social.
 - *Economic sustainability* means using resources efficiently so there is economic growth over time, allowing future generations to earn an income.
 - *Social sustainability* means ensuring future generations have access to social resources such as education, political stability and human rights.
 - *Environmental sustainability* means monitoring and preserving resources so they are available for use by future generations (including clean water, energy sources and resources such as timber).

Exam-style questions with sample answers

- 1 List one example of economic sustainability, and describe how health and wellbeing are promoted in this example. **(3 marks)**

Sample answer: Taking fish from the ocean at a rate where they can renew their stocks (1 mark). This will provide opportunities for future generations to also catch fish from the ocean as a food source (1 mark). It also promotes physical health as fish are a source of nutrition, which assists with the functioning of the body (1 mark).

- 2 Explain how access to safe water and sanitation could contribute to improving a country's human development. **(2 marks)**

Sample answer: Access to safe water and sanitation enables people to achieve a decent standard of living (1 mark) and reduces the likelihood that they will contract waterborne diseases. This means people are more likely to be well enough to attend school or work, which in turn will enhance their capabilities and enable them to develop to their full potential (1 mark).

Questions for you to practise

- 1 Name the three dimensions of sustainability. Choose one of the dimensions and outline how it can promote health and wellbeing. **(4 marks)**
- 2 Explain how access to education could contribute to improving a country's Human Development Index. **(2 marks)**
- 3 Discuss two factors outside the HDI that a government may want to measure assessing levels of human development in a country. Justify why these would be useful. **(4 marks)**
- 4 Discuss why it may be difficult to achieve global cooperation on sustainable action in each of the dimensions of sustainability. **(3 marks)**

Chapter 9: Implications of global trends for health and wellbeing

Key knowledge

- 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

- analyse the implications for health and wellbeing of particular global trends.

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Key terms

- climate change
- conflict
- digital technologies
- extreme weather events
- migration
- rising sea levels
- tourism
- weather patterns
- world trade

In this chapter

Implications of climate change	page 247
Rising sea levels	page 247
Changing weather patterns and extreme weather events	page 248
Implications of conflict and mass migration	page 252
Conflict	page 252
Mass migration	page 253
Implications of increased world trade	page 259
Possible benefits of increased world trade	259
Possible negatives of increased world trade	260

Implications of increased world tourism	page 260
Positives of increased world tourism	page 261
Negatives of increased world tourism	page 262
Implications of digital technologies	page 263
Digital learning (including eHealth and mHealth)	page 263
Telehealth	page 264
Increasing the number of skilled health care workers	page 265
Sharing health knowledge via social media	page 265
Australian digital technologies enabling increased knowledge sharing	page 268
Future implications	page 271

Implications of climate change

Over the past 50 to 100 years, the activities of humans, particularly those involving the burning of fossil fuels, have released sufficient carbon dioxide and other greenhouse gases to capture additional heat in the lower atmosphere, and this has had global effects on the climate. In the past 130 years, the world has warmed by approximately 0.85°C. Each of the past three decades has been warmer than any preceding decade since 1850 (Edenhofer et al. 2014). As a consequence of this atmospheric warming, sea levels are rising, glaciers are melting, precipitation patterns are changing, and **extreme weather events** are becoming more intense and frequent. These changes in climate affect the social and environmental determinants of health (including quality of drinking water, air quality, food security, quality of shelter), with consequent effects on health and wellbeing.

It is believed that between the years 2030 and 2050, **climate change** will result in approximately 250 000 additional deaths per year, from causes including malnutrition, malaria, diarrhoea and heat stress. The direct costs to health are predicted to be a staggering US\$2–4 billion per year by 2030. Low- and middle-income countries with poor health infrastructure will be most affected, and will require aid to prepare for and respond to these dramatic changes, occurrences and costs.

Three impacts of climate change – rising sea levels, changing weather patterns and more extreme weather events – are discussed below.

Rising sea levels

The earth's sea levels are rising. As water becomes warmer, it increases in volume, and this is a key reason for **rising sea levels**. Other reasons for rising sea levels are all linked to climate change, including melting glaciers and polar ice caps, as well as ice loss from Greenland and West Antarctica. In short, rising global temperatures are causing ice to melt faster in summer than ever before, resulting in an increase in the volume of water in the sea.

Core samples, tide gauge readings, and, most recently, satellite measurements tell us that over the past century, the Global Mean Sea Level (GMSL) has risen by [10 to 20 cm]. However, the annual rate of rise over the past 20 years has been [3.2 mm] a year, roughly twice the average speed of the preceding 80 years.

Over the past century, the burning of fossil fuels and other human and natural activities have released enormous amounts of heat-trapping gases into the atmosphere. These emissions have caused the Earth's surface temperature to rise, and the oceans absorb about 80 percent of this additional heat.

Extract from National Geographic, 2015–2017, 'Sea level rise',
<http://www.nationalgeographic.com/environment/global-warming/sea-level-rise/>

When sea levels rise quickly, it can have a devastating impact on coastal habitats and cities.

- Buildings, businesses and homes are in danger of being flooded and destroyed.
- People living in low-lying areas near the coast, which could be flooded as the sea level rises, will have to relocate, putting a strain on resources in other areas.
- Coastal wetlands will be damaged – these protect the shore from flooding, as well as providing important habitat for many species of plants and animals.
- Stronger and therefore more destructive storms are becoming more frequent.
- Beaches will become eroded and, in some cases, rising sea levels coupled with more extreme storms may destroy some beaches and islands.
- Habitat for fish, birds and plants will be lost.

extreme weather events

unpredictable, severe weather such as heat waves, droughts, tornadoes and hurricanes

climate change a change in weather patterns over decades or longer

rising sea levels increasing volume of the earth's oceans as a result of increasing temperature, melting glaciers and other factors resulting from climate change

Review and reflect

- 1 List three consequences of climate change.
- 2 It is believed that between 2030 and 2050, climate change will result in approximately 250 000 additional deaths per year, from causes including malnutrition, malaria, diarrhoea and heat stress. Discuss how climate change may lead to these outcomes.
- 3 Explain the relationship between the earth's surface increasing in temperature and sea levels rising.
- 4 List and discuss three impacts of sea levels rising quickly.
- 5 Discuss the impact that rising seas levels may have on health and wellbeing in the future.

Case study

How high will sea levels rise?

While it is expected to be catastrophic, the exact impact of rising sea levels is unknown. It is anticipated that major cities located on coastlines will come under threat and the impact on the health and wellbeing of their residents is expected to be vast.

Most predictions say the warming of the planet will continue and is likely to accelerate. Oceans will likely continue to rise as well, but predicting the degree to which they will rise is an inexact science. The Intergovernmental Panel on Climate Change says we can expect the oceans to rise between 11 and 38 inches (28 to 98 cm) by 2100, enough to swamp many of the cities along the U.S. East Coast. More dire estimates, including a complete meltdown of the Greenland ice sheet, place sea level rise to 23 feet (7 meters), enough to submerge London.

(source: National Geographic 2015–2017)

Of the world's ten largest cities, eight are located on coasts. Over the next century and beyond, rising seas will threaten Tokyo, New York, Shanghai, Mumbai, and other megacities.

(source: National Geographic 2015)

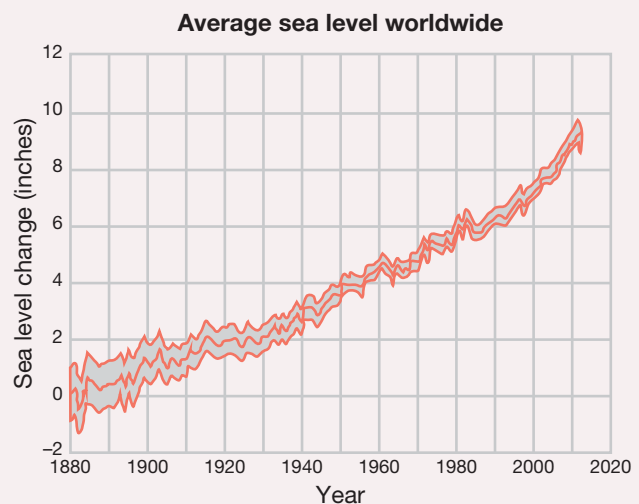


Figure 9.1 Average sea level change worldwide over time (source: US EPA 2016)

Case study question

Discuss two of the possible impacts on health and wellbeing should megacities located on coasts, such as Tokyo, New York and Shanghai, be submerged.

Changing weather patterns and extreme weather events

weather patterns repeating types of weather such as precipitation, temperature, air pressure and wind that recur at relatively predictable times

While global warming may provide benefits to some (e.g. fewer winter deaths in temperate climates, increased food production in certain areas), the overall health effects of changing **weather patterns** are likely to be predominantly negative. Changes in weather patterns affect the social and environmental determinants of health – clean air, safe drinking water, sufficient food and secure shelter.

According to the World Health Organization (WHO 2016a), the health effects of climate change will be vast:

... climate change is expected to cause approximately 250 000 additional deaths per year between 2030 and 2050; 38 000 due to heat exposure in elderly people, 48 000 due to diarrhoea, 60 000 due to malaria, and 95 000 due to childhood undernutrition

Extract from WHO 2016, WHO Media Centre, Fact sheet, 'Climate change and health', <http://www.who.int/mediacentre/factsheets/fs266/en/>

It is believed that global warming is causing an increase in extreme weather events. The total number of reported weather-related natural disasters globally has more than tripled since the 1960s. Weather-related natural disasters have the greatest impact on low-income and middle-income countries, as they often lack the resources to plan for and recover from these events rapidly. Each year most of the approximately 60 000 deaths attributable to such disasters occur in these nations (WHO 2016a).

Examples of changing weather patterns and extreme weather events that affect health and wellbeing are discussed below.

Changing rainfall patterns

More variable rainfall patterns are likely to compromise supplies of fresh water. Lack of safe water can affect hygiene, increase the risk of diarrhoeal disease, and threaten food security, among other things.

Rising temperatures and variable precipitation are likely to decrease the production of staple foods in many of the poorest regions. This will increase the prevalence of malnutrition and undernutrition [in these vulnerable regions]. (WHO 2016a)

Extreme heat

Extreme heat contributes directly to deaths from cardiovascular and respiratory disease, particularly among elderly people. For example, in the heat wave of summer 2003 in Europe, more than 70 000 excess deaths were recorded (Robine et al. 2008).

High temperatures also increase the air levels of ozone and other pollutants that worsen cardiovascular and respiratory disease. Consequently, if periods of extreme heat become more frequent, there will be an increase in the prevalence of deaths due to these circumstances (Paz et al. 2016).

Pollen levels also skyrocket in extreme heat; high pollen levels often trigger asthma, which affects around 300 million people globally. The increased frequency of heat waves is expected to increase this burden (Paz et al. 2016).

Extreme heat will reduce crop yields in many regions where food security and malnutrition are already a major issue. Malnutrition is also linked to increased prevalence of infectious diseases, such as malaria and respiratory diseases.

More droughts

In extreme cases, water scarcity can lead to drought. Droughts are associated with famine and, therefore, increased prevalence of malnutrition and undernutrition. By the late 21st century, climate change is likely to have increased the frequency and intensity of droughts on both regional and global scales (Edenhofer et al. 2014).

When water is scarce, people living in poverty need to transport water long distances and store excess supplies in their home, which increases the risk of injury and household water contamination. The need to collect water also often forces women and girls out of paid employment or school.

More frequent and larger floods

Floods contaminate supplies of fresh water, thereby increasing the risk of waterborne diseases. The aftermath of floods includes lingering stagnant water, especially where infrastructure (such as drains) is poor; this water then becomes a breeding ground for disease-carrying insects such as mosquitoes, which increases the risk of diseases such as malaria. Floods also result in many injuries and drownings, especially of infants, children and the elderly.

Changing global weather patterns will also affect patterns of infection. Climate has a strong impact on the prevalence of waterborne diseases and diseases transmitted through insects, snails and other cold-blooded animals. Changes in climate are predicted to lengthen the times of the year during which vector-borne diseases are transmitted, as well as altering their geographic range. For example, climate change is predicted to significantly widen the area of China where the snail-borne disease schistosomiasis occurs (Zhou et al. 2008).

Malaria, which kills approximately 438 000 people every year (WHO 2017a) and is caused by the *Anopheles* mosquito, is strongly influenced by climate. Another vector-borne disease, dengue, is also strongly influenced by climate and expected to increase in prevalence – it is estimated that more than 2.5 billion people in over 100 countries are at risk of contracting dengue.

Hurricanes

Hurricanes are among the most destructive of all natural disasters – they can damage and destroy residential, commercial and public buildings, as well as important infrastructure, such as roads, bridges, water and energy supply infrastructure, and communication systems (URI 2010–2015). It is believed that climate change has resulted in more frequent and destructive hurricanes. Data collected so far shows a significant link between the frequency and intensity of tropical storms and increases in annual temperatures since tidal records began in 1923. Scientists predict that global warming and warmer seas could bring about more intense tropical storms (Lam 2017).

Review and reflect

- 1 List two benefits of global warming.
- 2 Briefly discuss WHO's predictions about the effects of climate change.
- 3 Describe the impact that extreme weather events can have on health and wellbeing in low- and middle-income countries where infrastructure is poor and aid is not readily available.
- 4 Identify two ways in which changing rainfall patterns will affect health and wellbeing.
- 5 Discuss the impact that extreme heat could have on health and wellbeing.
- 6 List two impacts that more frequent droughts could have on a population.
- 7 List three groups who are most susceptible to drowning as a result of increased intensity and frequency of floods.
- 8 Identify the impacts of hurricanes, and discuss the possible impact of hurricanes on health and wellbeing.

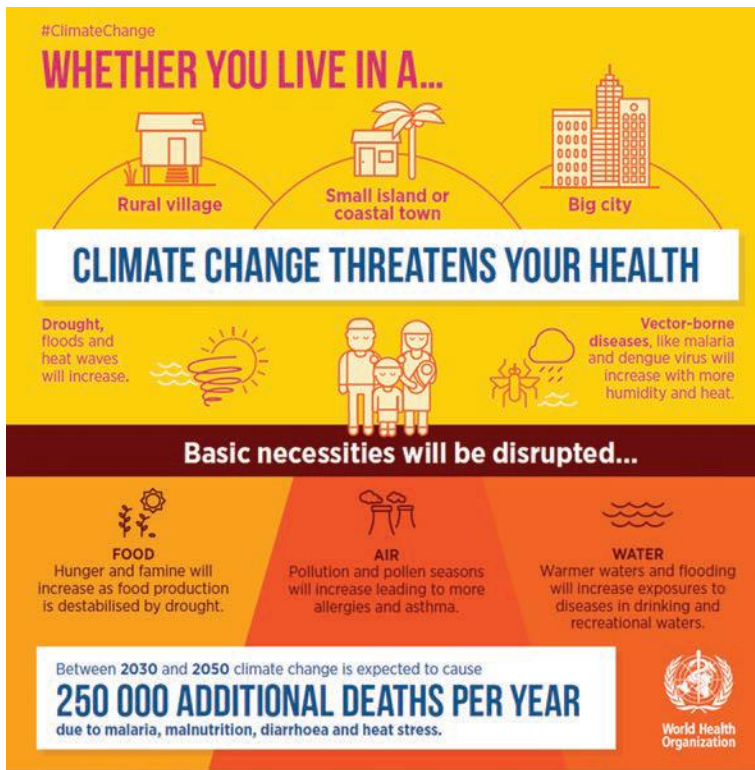


Figure 9.2 According to WHO, climate change is a major threat to health.



Figure 9.3 WHO believes that, while some populations are particularly vulnerable to climate change, its effects will be felt everywhere by everyone.

Implications of conflict and mass migration

Conflict

conflict a violent situation or period of fighting (e.g. between two countries)

Conflict can cause death, injuries, mental stress, depression, a worsening of existing malnutrition (particularly among infants and children) and outbreaks of communicable diseases. Those who are most at risk from conflict are internally displaced people, who often do not have shelter or access to necessities, as well as vulnerable populations including pregnant women, children, the elderly, and those who are chronically ill or disabled. Preventable diseases such as diarrhoea can be life threatening, while chronic conditions and illnesses that can normally be quickly treated lead to intense pain and suffering. Pregnancy and childbirth bring extra complications and can often jeopardise the health and wellbeing of the expecting mother.

Conflict also reduces access to food, medicine, immunisations, medical technology and supplies, clean water, sanitation, electricity, shelter and health care, all of which are key to achieving optimal health.

Some other impacts of conflict that result in increased morbidity and mortality rates are discussed below.

People forced out of paid work

A study by UNICEF and UNFPA on the impact of conflict on women in the Darfur region of Sudan where conflict has raged since 2003 found that, prior to the conflict, many women had worked in farming and cultivation, raising animals, making and trading handicrafts, seasonal crops, fruits and vegetables (UNICEF/ UNFPA n/d). Once the conflict began, the most common way for women to generate a very small income was by collecting and selling firewood, which involves trekking long distances – up to two days – which poses high security risks for them.

Children forced out of school

Children are forced out of school, because of the destruction of the schools, an inability to pay school fees (made more difficult due to people having to flee their jobs), or inadequate space in existing schools.

Women suffer more violence and abuse

In times of conflict, women are more vulnerable to sexual violence, abductions and abuse, with resulting health problems including physical injuries, miscarriages, bleeding or injuries sustained during flight from attackers, sexually transmitted diseases, malnutrition, irregular menstrual cycles and psychological disturbances such as nightmares, coupled with feelings of shame, depression and, in some cases, self-harm or suicide (UNIFEM 2010). Unmarried girls are most affected and some do not seek health care in clinics, due to stigma and shame.

Health care becomes inaccessible

Health care facilities are often destroyed during conflicts. If clinics do remain intact, conflict often makes travel to the clinic nearly impossible. It can also be difficult to make essential medicines available within a conflict zone, as access to the area can be difficult for aid agencies. This often results in increased outbreaks of communicable diseases such as cholera, typhoid and measles.

Care in childbirth is reduced

Poor access to trained midwives reduces the level of care available to pregnant women.

Review and reflect

- 1 List three of the most vulnerable groups during conflict. Why do you think they are the most vulnerable?
- 2 List three negative health outcomes associated with conflict, and explain why this is the case for each one.
- 3 Conflict reduces access to food, medicine, immunisations, medical technology and supplies, clean water, sanitation, electricity, shelter and health care. Choose two of these resources and discuss how not being able to access them may affect health and wellbeing.

Mass migration

Migration is defined by the International Organisation for Migration (the UN's Migration Agency) as:

the movement of a person or a group of persons, either across an international border, or within a State. It is a population movement, encompassing any kind of movement of people, whatever its length, composition and causes; it includes migration of refugees, displaced persons, economic migrants, and persons moving for other purposes, including family reunification.

International Organisation for Migration (IOM) 2017, 'Key migration terms', <https://www.iom.int/key-migration-terms#Migration>

Mass migration refers to large numbers of people moving from one geographical area to another. While mass migration can be a positive development in an increasingly globalised world, it is a major issue for both low- and high-income countries, as large influxes of migrants and population inflow can pose significant health and development challenges. As stated by the United Nations (n/d):

'International migration is a global phenomenon that is growing in scope, complexity and impact'.

In 2015, 244 million people, or 3.3 per cent of the world's population, lived outside their country of origin. The majority of migrants cross borders in search of better economic and social opportunities. Others are forced to flee crises [including conflict] – the current mass movement of refugees and displaced persons has given rise to xenophobia and calls for tightening borders [in many nations and regions]. Internal migration within countries is also on the rise.

migration when a person (or a group of people) moves across an international border, or within a State, in order to re-settle there; includes refugees, displaced persons, economic migrants and family reunification

mass migration when a large number of people move from one geographical area to another

For example, the WHO European Region, and particularly countries closest to North Africa and the Middle East, have large influxes of migrants. Migration has resulted in an increase in the population of the WHO European Region by approximately 5 million people since 2005, and was responsible for close to 70% of population growth between 2005 and 2010. Today, 73 million migrants are estimated to be living in the European Region, accounting for nearly 8% of the total population. In addition, just over half of all migrants are women, most of whom are of reproductive age and hence have particular needs and human rights concerns.

Migration does occur between continents, but most international migrants move over smaller distances. The majority of migrants in Africa, Asia, Europe, and Latin America and the Caribbean still end up living in the region where they were born. Because most people engaging in mass migration live in low-income countries, they often find refuge in countries where poverty rates are high. This means that the survival of those migrating depends on the availability of assistance provided by local communities and international aid organisations such as the United Nations and the World Health Organization.

Why do mass migrations occur?

The reasons for mass migrations of people are varied. Conflict, violence, violations of human rights, as well as natural disasters, force millions of people to flee their homes in order to escape destruction and persecution. The international community is currently experiencing a large number of migrants fleeing a crisis in their home nation, with the number of forcibly displaced persons globally higher than it has been since World War II. According to the IDMC (Internal Displacement Monitoring Centre), over 65.2 million people are in dire need of protection and assistance as a consequence of forced displacement. These include refugees, internally displaced persons and asylum-seekers.

- Globally, over 40.8 million people were internally displaced. In addition, 21.3 million people are refugees and 3.2 million are asylum-seekers (UNHCR 2015).
- An estimated 12.4 million people were newly displaced by conflict or persecution in 2015 alone (UNHCR 2015). This trend became more pronounced in 2015 as exceptionally large numbers of refugees and migrants arrived in Europe from war-torn Syria and other places of conflict.
- Children make up 51% of the global refugee population – the highest proportion in over a decade.
- According to the UN, women and girls represent 50% of the entire refugee population.

Syria is an example of recent mass migration resulting from conflict.

An estimated 11 million Syrians have fled their homes since the outbreak of the civil war in March 2011. ... Among those escaping the conflict, the majority have sought refuge in neighbouring countries or within Syria itself. According to the United Nations High Commissioner for Refugees (UNHCR), 4.8 million have fled to Turkey, Lebanon, Jordan, Egypt and Iraq, and 6.6 million are internally displaced within Syria. Meanwhile about one million have requested asylum to Europe. Germany, with more than 300 000 cumulated applications, and Sweden with 100 000, are [the European Union's] top receiving countries.

(Syrian Refugees 2016)

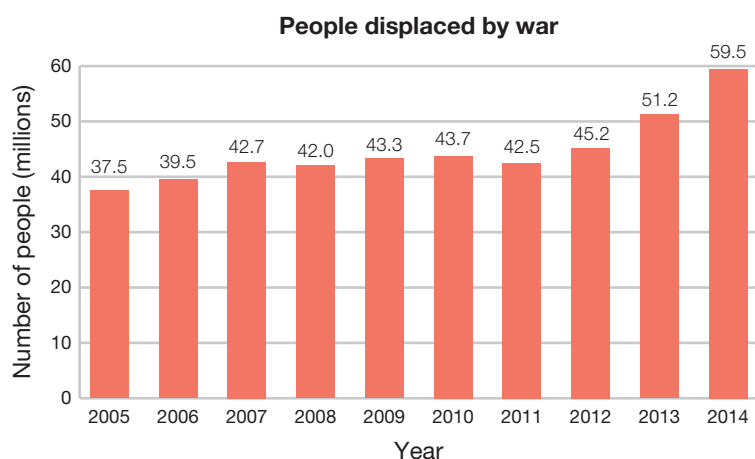


Figure 9.4 The number of people displaced by war is as large as it has been for many years, and this has a significant impact upon global health.

Health risks of mass migration

Mass migration often leads to a number of health concerns. People are often forced to seek refuge in overcrowded and unhygienic temporary shelters, which increases the risk of outbreaks of communicable (such as acute respiratory infections, meningitis, cholera and scabies) and waterborne (such as cholera, typhoid and dysentery) diseases (WHO 2017b). In refugee and internally displaced persons' camps, diarrhoeal diseases can be deadly, especially for infants and those under the age of 5 years.

Females often face specific risks and are less likely than males to have basic rights protected. In situations of mass migration, the risks can be worsened, particularly through discrimination, and sexual and gender-based violence. As a result, women and young girls who are travelling alone, as well as pregnant, elderly and disabled women, are among the most vulnerable displaced people, and are likely to experience poor sexual, reproductive, maternal, infant and child health, along with increased rates of injury due to exposure to violence (ECHO 2016).

During migration, conditions can be unsanitary, particularly for obtaining, storing or preparing food, and overcrowding further increases the likelihood of outbreaks of food- and waterborne diseases. A lack of access to soap and clean water to wash hands after defecating or urinating can also lead to increased rates of morbidity.

If migrating people are forced to sleep outdoors or in shelters at temperatures below 16°C, they can suffer from hypothermia and/or frost bite. Extremely cold temperatures can increase the risk of fractures, sprains and strains from falls and accidents, as well as cardiovascular, respiratory and mental health problems. Very hot weather can also cause illness and death for people migrating. It can trigger exhaustion, heart attacks or confusion, and can worsen existing health conditions such as cardiovascular and respiratory diseases.

Mass migration routes are often dangerous. In the Mediterranean region, a record number of deaths (approximately 3770) occurred in 2015. The International Organization for Migration (IOM) estimated that during the past 20 years more than 60 000 people have died during migration (IOM n/d). Even this figure is uncertain, given that many deaths occur that will never be reported.

Other health concerns include:

- increased numbers of psychosocial disorders
- higher newborn mortality rates due to poor access to medical professionals

- higher rates of malnutrition, because people struggle to access food
- increased rate of respiratory infections and gastrointestinal illnesses because of poor living conditions; and increased rates of skin infections due to poor hygienic conditions
- increased vulnerability to non-communicable diseases (NCDs) as people often lack access to the continuous care and treatment that is crucial for chronic conditions.



Figure 9.5 Migration is risky and has many adverse effects on physical, social and mental wellbeing.

Review and reflect

- 1 Describe 'mass migration'.
- 2 List three reasons why migrants leave their homeland.
- 3 List three reasons why people migrate en masse.
- 4 Mass migration is linked with poor health and wellbeing. Identify four examples of how the process of mass migration can negatively impact health and wellbeing, and discuss why this is the case.

Case study

Conflict and mass migration

More than 30 000 people were evacuated from Aleppo in the week after Syrian government and opposition forces reached a ceasefire in 2016. The city of Aleppo is in ruins after several years of fighting.

In freezing weather, with no fuel, people burned their belongings to stay warm while they waited for buses to take them out of the city. Tens of thousands of displaced people filled villages and camps outside the city.

Aid agency World Vision distributed thousands of blankets and mattresses, kerosene heaters, jerry cans and hygiene kits. It also helped about 100 000 people fleeing violence in the area by providing clean water and sanitation services, equipment and supplies for local hospitals, and supporting health clinics.

‘As the evacuees slowly recover from the shock of their ordeal, we’re starting to hear harrowing stories from children who have seen their parents die right in front of them,’ said Chris Latif, World Vision’s response manager for northern Syria. ‘The death and destruction they’ve witnessed is beyond belief...’

(World Vision, 2017)

Syrian refugee crisis explained: fast facts

- 13.5 million people in Syria need humanitarian assistance due to a violent war that began in 2011.
- 5 million Syrians are refugees, and 6.3 million are displaced within Syria; half of those affected are children.
- Children affected by the Syrian conflict are at risk of becoming ill, malnourished, abused, or exploited. Millions have been forced to quit school.
- Most Syrian refugees remain in the Middle East, in Turkey, Lebanon, Jordan, Iraq, and Egypt; slightly more than 10 percent of the refugees have fled to Europe.
- Peace negotiations continue despite a fraying and piecemeal ceasefire.

Children under siege in Aleppo

‘The children of Syria have experienced more hardship, devastation, and violence than any child should have to in a thousand lifetimes,’ says Dr. Christine Latif, World Vision’s response manager for Turkey and northern Syria.

World Vision staff say the situation in Aleppo city is the most dire they have ever seen it. Health supplies and clean water are urgently needed. Aid hasn’t reached the city since mid-July [2016].

‘Civilians have been continually in harm’s way, caught in the cross-fire and changing front lines. Civilian infrastructure has been targeted, leading to mass civilian casualties, including women and children,’ says Angela Huddleston, program manager for the World Vision’s Syria response.

World Vision’s work in Syria

- Food assistance
- Primary healthcare in health facilities and mobile clinics
- Medical and nutritional aid for women and children
- Baby care kits for displaced families
- Water and sanitation services
- Child protection outreach to communities
- Psychosocial care and play for children



Figure 9.6 Syrian children in a refugee camp

Why are Syrians leaving their homes?

- **Violence:** Since the Syrian civil war began in 2011, as many as 386 000 people have been killed, including nearly 14 000 children, says the Syrian Observatory for Human Rights. The war has become more deadly since foreign powers joined the conflict.
- **Collapsed infrastructure:** Within Syria, 95 per cent of people lack adequate health care, 70 per cent lack regular access to clean water. Half the children are out of school. The economy is shattered and four-fifths of the population lives in poverty.
- **Children in danger and distress:** Syrian children – the nation’s hope for a better future – have lost loved ones, suffered injuries, missed years of schooling, and witnessed unspeakable violence and brutality. Warring parties forcibly recruit children to serve as fighters, human shields, and in support roles, according to the U.S. State Department.

Shutterstock.com/huseyin_ozdemir1



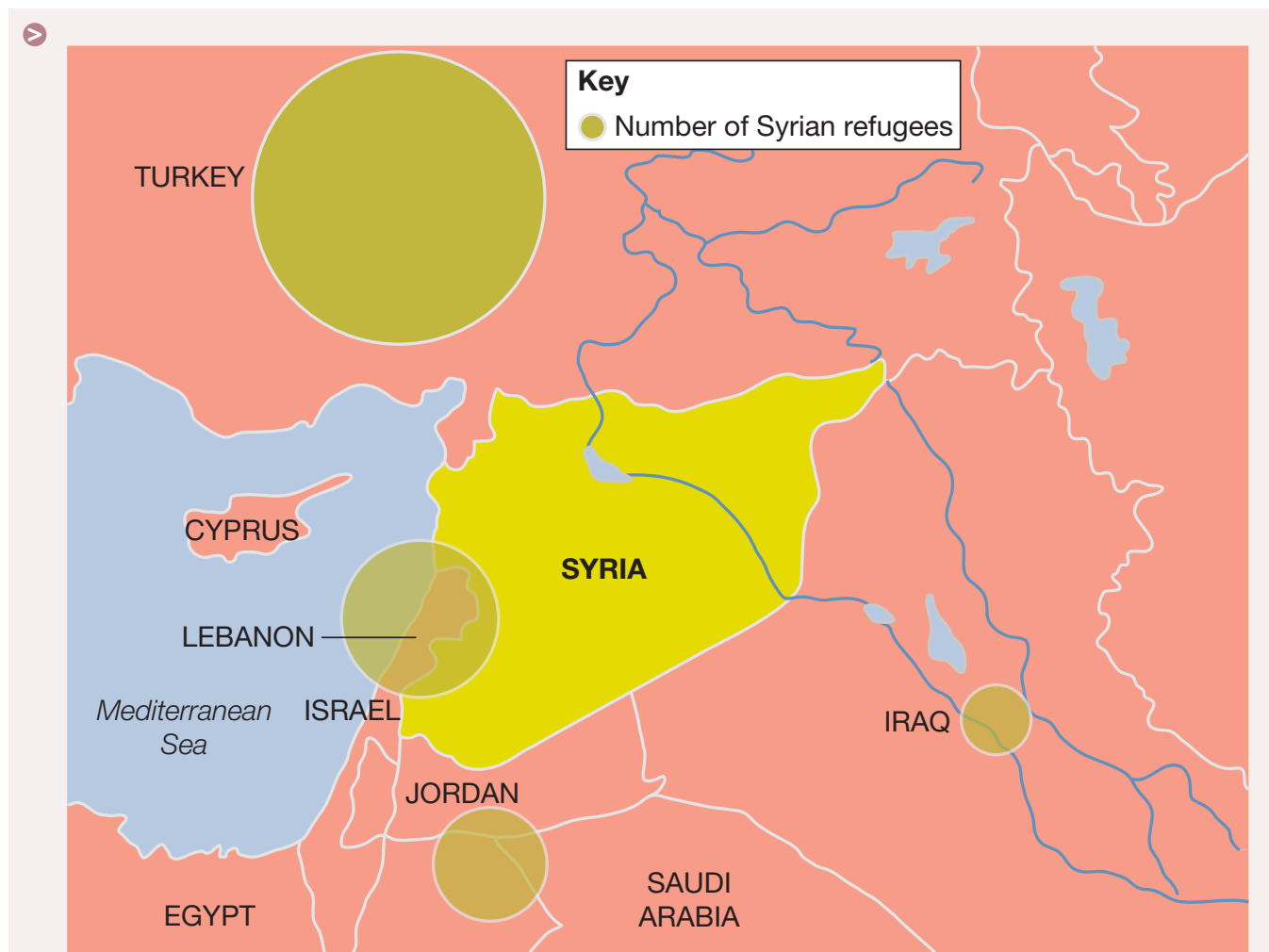


Figure 9.7 Most refugees from Syria are still in the region, seeking refuge in Turkey, Lebanon, Jordan, Iraq and Egypt. Around 10 per cent are taking the dangerous journey to Europe. (World Vision, 2016)

How does the war in Syria affect children?

- Children are susceptible to malnutrition and diseases brought on by poor sanitation, including diarrheal diseases like cholera. Cold weather increases the risk of pneumonia and other respiratory infections.
- Many refugee children have to work to support their families. Often they labor in dangerous or demeaning circumstances for little pay.
- Children are more vulnerable to sexual abuse and exploitation in unfamiliar and overcrowded conditions. Without adequate income to support their families and fearful of their daughters being molested, parents – especially single mothers – may opt to arrange marriage for girls, some as young as 13.
- Between 2 million and 3 million Syrian children are not attending school. The U.N. children's agency says the war reversed 10 years of progress in education for Syrian children.

(World Vision 2017)

Case study questions

- Describe the impact that mass migration from a war zone like Aleppo may have on the health and wellbeing of children.
- List three health status outcomes associated with mass migration, and for each outcome explain why this is the case.
- Millions of children have been forced to quit school as a result of the war in Syria. Discuss the possible impact this may have on future health outcomes for this population of children.
- List three essentials that World Vision provided to people leaving Aleppo to assist them with their health, and explain how each may improve health and wellbeing.

Implications of increased world trade

World trade can be defined as ‘the worldwide business that involves making and collecting payments for transactions in goods and services, and transporting them to interested markets’ (WebFinance Inc. 2017).

A reduction of global trade barriers, along with increased ease of advertising within many low-income nations resulting from the easing of restrictions, as well as the ease of promoting products to foreign markets via the internet, has increased the potential for companies to do business outside their country of origin.

The large growth in international trade in previous decades is both a primary cause and an effect of globalisation. As a result of increased international trade, consumers around the world have a wider choice of products than they would have had if only locally made products were available. While this increased choice has benefits (e.g. increased importing/exporting of medicines to treat illnesses), it can also have negative consequences – for example, people in low-income nations are now more likely to purchase processed foods, alcohol and cigarettes, as these are now more readily available.

world trade worldwide business that involves transactions in goods and services, and transporting them to interested markets

Possible benefits of increased world trade

Increased world trade has also resulted in increased economic growth around the globe. It has played a role in raising average incomes, creating jobs, increasing competitiveness and therefore reducing prices of goods. On the other hand, it can also cause economic, political and social disruption.

The following benefits of increased world trade for low-income countries were identified by the European Commission (EC n/d):

- Trade can help boost development and reduce poverty by generating growth through increased commercial opportunities and investment

Growth and investment reduce the likelihood that people will suffer the health problems linked to poverty. Morbidity rates are reduced, because people have access to medical assistance, and rates of malnutrition are reduced, because people can afford enough food to meet their energy needs.

- Trade enhances competitiveness by helping developing countries reduce the cost of inputs

Reducing costs helps increase the value of products – increased trade is strengthening the economies of countries like China, Brazil, India and South Africa, which in turn is helping to improve conditions. Improved conditions in turn help to reduce mortality rates and improve health. Note, however, that in many low- and middle-income countries where improvements have occurred, the improvements do not always reach those who are most vulnerable.

- Trade encourages innovation by facilitating exchange of know-how, technology and investment in research and development ... Investment and trade have facilitated the deployment of information and communication technology, with mobile cellular coverage reaching [an increasing percentage] of the world’s population ...

Broadening the range of communications technology allows for more rapid communication, makes health information more readily available and thereby improves health outcomes.

- Trade expands choice and lowers prices for consumers

Strengthening competition makes resources such as food and clothing more affordable and this improves health.

Learning tip

The terms ‘developed’ and ‘developing’ commonly refer to countries categorised as high-income (for developed) and low-income (for developing). The VCE HHD Study Design uses the terms high-income, middle-income and low-income in preference.

- Trade strengthens ties between nations by bringing people together in peaceful and mutually beneficial exchanges and as such contributes to peace and stability

A study conducted by the Centre for Economic Policy Research showed that trading between countries reduces the likelihood of disputes turning into conflict. One reason for this is the potentially significant costs of losing trade. When communities are peaceful and stable, health and wellbeing improve.

- Trade creates employment opportunities

More job opportunities means less poverty and associated health conditions.

© European Union, 1995–2017

Possible negatives of increased world trade

- Because the global economy is so interconnected, when large economies experience a recession, the impact is felt all over the world. When trade levels are reduced, employment opportunities decrease and businesses struggle to stay afloat, and many economies experience a downturn as a result (Levin Institute 2016). This can result in many people losing their source of income, leading to global depression. Anxiety rates increase, along with rates of suicide and self-harm; unemployment is also linked with increased likelihood of experiencing hypertension and obesity.
- Increased world trade has resulted in jobs within high-income countries being lost to low-income countries.

Review and reflect

1 Describe 'world trade'.	4 a List and explain two negatives of increased world trade.
2 Discuss why world trade has increased in recent years.	b Explain how the negatives of world trade can affect health and wellbeing.
3 a List and explain two benefits of increased world trade.	
b Explain how the benefits of world trade can affect health and wellbeing.	

Implications of increased world tourism

Over the past two decades, international tourist arrivals have more than doubled, from 473 million in 1992 to 1035 billion in 2012. By 2030, it is predicted that this total will rise to 1.8 billion (WTO/EC 2013). The UN defines **tourism** as 'a social, cultural and economic phenomenon related to the movement of people to places outside their usual place of residence, pleasure being the usual motivation' (UN 2010, p.1). People may move to countries or places outside their usual environment for reasons such as leisure, business, religion or health, or for other purposes such as visiting friends and relatives.

tourism the movement of people to places outside their usual environment for leisure, business, religion, health, and visiting friends and relatives

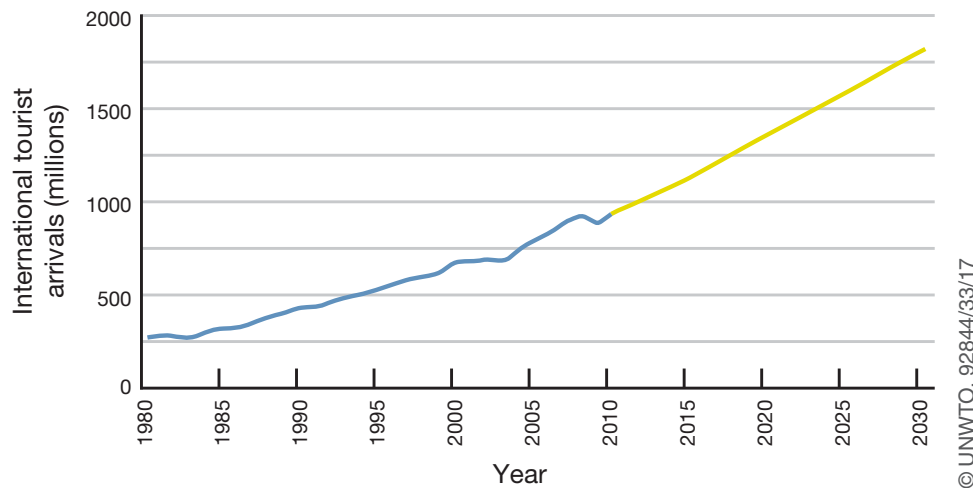


Figure 9.8 The World Tourism Organization predicts that world tourism numbers will continue to rise

Tourism is one of the largest and fastest-growing economic sectors in the world, contributing to 9% of the global GDP and accounting for 9% of jobs worldwide; it plays a considerable role in delivering sustainable development and improving health outcomes in many countries. Good management is important so that it benefits local communities and the natural and cultural environments upon which it depends (WTO/EC 2013).

According to the United Nations World Tourist Organisation (UNWTO 2017), in 2016, for the seventh consecutive year, demand for international tourism remained strong. It was reported that:

- international tourist arrivals increased by 3.9% (from 2015) to a total of 1235 million
- approximately 46 million more tourists (overnight visitors) travelled internationally in 2016 than in 2015.

Positives of increased world tourism

World tourism has many characteristics that make it especially valuable as an agent of development and improving health.

- Tourism accounts for over 230 million jobs in the world (WTO/EC 2013). According to UNWTO Secretary-General Taleb Rifai, 'international travel continues to grow strongly and contribute to job creation and the wellbeing of communities around the world.' (UNWTO 2017). This effect of increased tourism helps people gain employment and an income to finance their daily living activities and purchase essential items and services such as food, water, shelter and education. In turn this helps reduce poverty rates and associated adverse health status outcomes, in many populations.
- Tourism encourages people to visit low-income nations, some of which are home to an attractive and unique natural environment, warm weather, rich cultural heritage, wildlife, art, and so on. Tourism accounts for 29% of exports in services worldwide, and for many low-income countries it provides an opportunity to stimulate the economy, not only increasing average income per person but also increasing taxes collected by the government, which can then

spend more money on key infrastructure (such as roads, health care clinics and schools), with positive effects on health.

- People from developed, high-income countries visiting low-income nations often gain an increased understanding of the challenges faced by them, such as poverty and human rights abuses. This in turn helps promote fundraising and action, helping to fund government and non-government organisations addressing these issues and thus promoting improved health and wellbeing.
- The improvements to infrastructure and leisure facilities that are developed in the interests of promoting tourism may also benefit the local community, helping to boost wellbeing.
- Tourism encourages the promotion of traditional customs and festivals, creating a sense of pride among the people of a host nation, which also boosts wellbeing (Simm n/d).

Negatives of increased world tourism

Some aspects of tourism have a negative impact on health and wellbeing.

- Tourism is a significant contributor to climate change, currently accounting for around 5% of global carbon dioxide emissions, generated predominantly by transport, as well as the operation of tourism facilities (for example, accommodation). For information about the negative impacts of climate change, see pages 247–50.
- The activities of tourists and tourism businesses can result in pollution of land, air and water, with increased prevalence of respiratory conditions (air pollution) and waterborne diseases.
- Tourist accommodation often uses precious resources such as land, energy and water, depriving locals, who may be desperate for the same resources.
- Tourism sites can damage biodiversity (for example, delicate coral reefs) as well as cultural heritage sites. Tourists may also not follow social and cultural traditions and values. While these impacts are not directly linked to health, they can negatively affect the morale of a community and have an intangible impact.
- Tourism can result in an increase in sexual exploitation, hence increasing the prevalence of sexually transmitted diseases.
- World tourism has resulted in increased pollution through traffic emissions, littering, increased sewage production and noise, all of which are associated with negative health outcomes.

The United Nations 70th General Assembly designated 2017 the International Year of Sustainable Tourism for Development, recognising the impact that world tourism can have on health and wellbeing. They aimed:

‘to support changes in policies, business practices and consumer behaviour towards a more sustainable tourism sector that contributes to the SDGs’

This initiative aimed to promote the role of tourism in promoting inclusive and sustainable economic growth, social inclusiveness, employment and poverty reduction, environmental protection, awareness about climate change, the promotion of cultural values and heritage, as well as peace and security (UNWTO 2016).

Review and reflect

- 1 Describe 'tourism'.
- 2 The numbers of international tourists are climbing. Identify and briefly describe why you believe this is the case.
- 3 Identify and discuss two ways in which world tourism can benefit health and wellbeing.
- 4 Identify and discuss two ways in which world tourism can have negative effects on health and wellbeing.
- 5 The World Tourism Organization predicts that world tourism numbers will continue to rise. Discuss two possible implications of this trend for health and wellbeing.

Implications of digital technologies

Digital technologies are electronic tools, systems, devices and resources that generate, store or process data. They include social media, online games and applications, multimedia, cloud computing and mobile devices. Digital technologies allow access to the internet, which can be accessed via a computer or mobile telephone, or other digital devices (such as an iPad). These technologies allow increased sharing of knowledge and information globally, which can be beneficial for health outcomes (when the correct information is accessed and interpreted correctly). Or it can have a negative impact on health status (due to misinformation and a variety of other factors).

Global access to digital technology and the internet has increased dramatically over the past decade. This access encourages the sharing of knowledge, which can have an impact on health, and has resulted in an increase in digital learning.

digital technologies electronic tools, systems, devices and resources that generate, store or process data

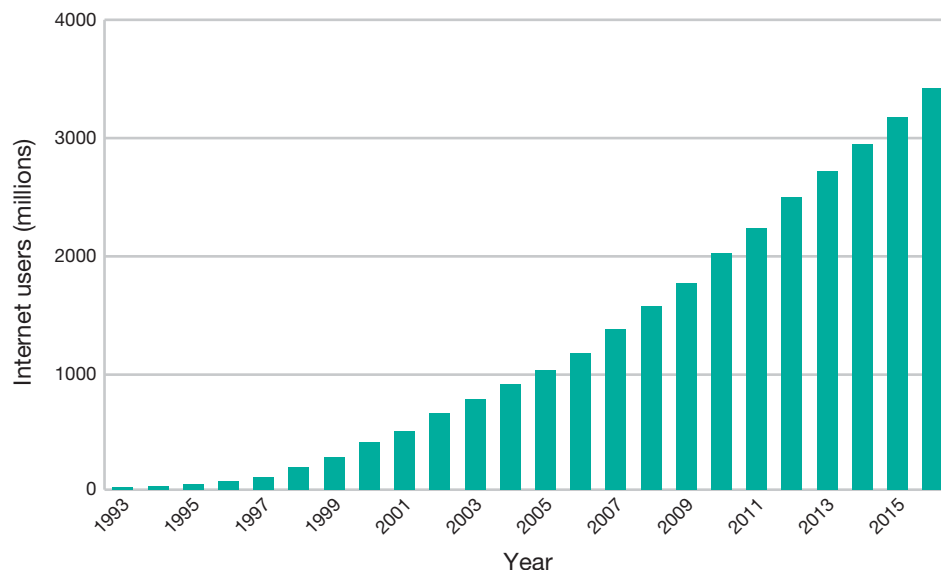


Figure 9.9 The prevalence of internet users increased dramatically from 1990 to 2015, and opened up the opportunities for health knowledge to be shared via digital technology.

Digital learning (including eHealth and mHealth)

Digital learning is learning facilitated by technology or by instructional practice that makes effective use of technology. It can include virtual learning, game-based learning, accessing digital content, collaborating locally and globally, active

participation in online communities and using technology to connect, collaborate, curate and create, all of which can be beneficial for knowledge sharing and promoting health.

eHealth

At the World Health Assembly in 2005, eHealth was defined as 'the cost-effective and secure use of ICT [information and communications technologies] in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research' (WHO 2016b, p.5).

mHealth

WHO defines this as

'a component of eHealth [involving] the provision of health services and information via mobile technologies such as mobile phones, tablet computers and personal digital assistants' (WHO 2017d).

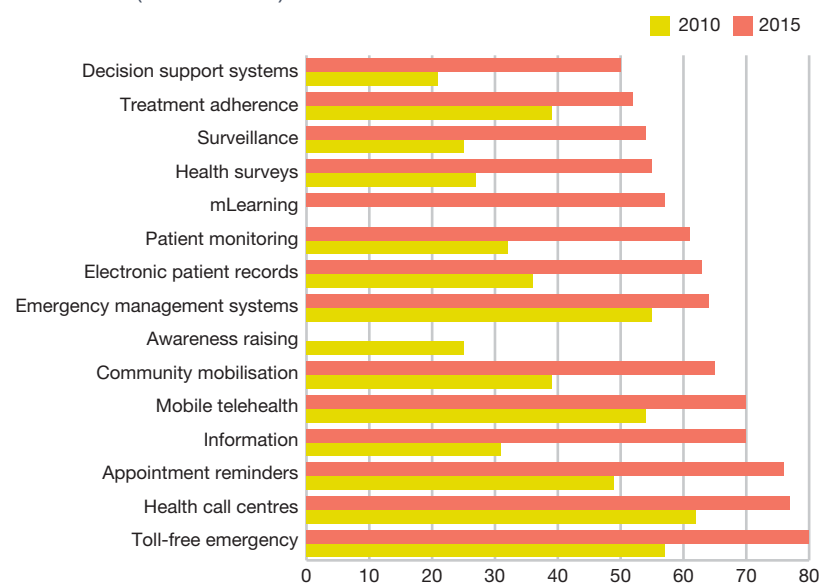


Figure 9.10 Number of countries that reported using an mHealth program, by type, 2010 and 2015 (source: WHO 2016b)

Telehealth

Telehealth is another benefit of increased access to digital technology that enables increased sharing of knowledge. Telehealth is defined by WHO as:

the practice of medicine at a distance [which] involves an interaction between a health care provider and a patient when the two are separated by distance. That interaction may take place ... by telephone or by ... video link [or by] email. ... Telehealth uses ICT for the exchange of information for the diagnosis and treatment of diseases and injuries, research and evaluation, and for the continuing education of health professionals. Telehealth can contribute to achieving universal health coverage by improving access for patients to quality, cost-effective, health services wherever they may be. It is particularly valuable for those in remote areas, vulnerable groups and ageing populations [who struggle to leave home to access health care facilities]

Extract from WHO 2016, Global Observatory for eHealth, 'Global diffusion of eHealth: Making universal health coverage achievable. Report of the third global survey on eHealth'; <http://apps.who.int/iris/bitstream/10665/252529/1/9789241511780-eng.pdf?ua=1>

The telehealth process is only effective when there is appropriate infrastructure, access to the digital technology and connectivity.



Getty Images/AFP Photo/Tony Karumba

Figure 9.11 The Portable Eye Examination Kit is a unique smart phone-based system that can be used for comprehensive eye testing anywhere in the world, an example of telehealth in action.

Increasing the number of skilled health care workers

Increasing the number of skilled health care workers globally is critical to achieving sustainable, improved health in the future. eLearning is critical to achieving this, by providing increased access to digital technology and knowledge sharing. Boosting the health workforce requires high-quality, relevant and up-to-date health science education, aimed at building the knowledge, skills, attitudes, behaviours and core values of health workers – but this can be difficult in many low-income countries that lack infrastructure, resources and educators. eLearning is a key strategy for health workforce training in low-income nations, and populations that are geographically isolated, where these essentials are lacking. eLearning enables more health care workers to be educated, and current healthcare professionals to undergo professional development, and this assists in improving health status globally.

Sharing health knowledge via social media

Social media, including Facebook, Twitter and YouTube, act as interactive platforms for individuals, communities and organisations to share and discuss health knowledge and issues, and promote innovations and possible solutions.

The social-media-based Ebola awareness, education and training campaign in Nigeria is an example of how social media can lead to behaviour change. In 2014, it helped to quell rumours and quash false information about the disease (Carter 2014).

Social media is a critical way for health organisations to convey messages, and for individuals and communities to receive and share information. It is used by organisations:

- at a global level (e.g. WHO)
- nationally (e.g. Federal Government) and at state and local levels, to:
 - help manage patient appointments
 - seek feedback on services
 - make general health announcements
 - make emergency announcements (e.g. the outbreak of a disease)
 - spread the word on health promotion campaigns.

Social media is also used by individuals and communities to:

- help decide which service to use
- participate in community-based forums
- provide feedback to health professionals or facilities
- run community based-health promotion programs (e.g. a 'walk to school bus')
- learn about health issues.

Positive implications of increased knowledge sharing

Digital technologies have increased the sharing of health knowledge, which has enabled significant improvements in universal health care coverage and thus an improvement in global health outcomes.

The sharing of health knowledge through digital technology:

- helps provide services to remote populations and under-resourced communities, through telehealth or mHealth
- helps train health workers, via eLearning
- makes education more widely accessible
- enhances diagnosis and treatment by providing accurate and timely patient information through eHealth records
- allows vital health information to be provided in multiple languages
- improves the efficiency of health care systems (WHO 2017e).

Without digital technology to enable this knowledge sharing, these improvements would not have been possible.

Table 9.1 Some of the types of mHealth programs used to increase communication between individuals and health services

Communication between individuals and health services	
Health call centres/ health care telephone helplines	Health care advice and triage provided by trained personnel and pre-recorded messages; accessible on mobile phones or fixed lines
Emergency toll-free telephone services	Free telephone hotlines for health emergencies provided by trained personnel and pre-recorded messages and linked to response systems; accessible on mobile phones or fixed lines
Communication between health services and individuals	
Treatment adherence	Reminder messages provided by health services to patients aimed at achieving medication adherence using mobile ICT; messages can be text, voice or multimedia
Reminder to attend appointments	Reminder messages provided by health services to patients to make or attend an appointment using mobile ICT; message can be text, voice or multimedia
Community mobilization/health promotion campaigns	Health promotion campaigns conducted using mobile ICT to raise the awareness of target groups. Messages conveying information can be text, voice or multimedia
Consultation between health care professionals	
Mobile telehealth	Consultation between health care practitioners or between practitioners and patients using mobile ICT
Intersectoral communication in emergencies	
Emergency management systems	Response to and management of emergency and disaster situations using mobile ICT
Health monitoring and surveillance	
Health surveys	Data collection, management and reporting of health surveys using mobile ICT. May involve any combination of networked mobile devices
Surveillance	Routine, emergency and targeted data collection, management and reporting for public health surveillance using mobile ICT. May involve any combination of networked mobile devices
Patient monitoring	Data capture and transmission for monitoring a variety of conditions in a range of settings using mobile ICT
Access to information and education for health care professionals	
Access to information, resources, databases and tools	Access to health sciences literature, resources and databases using mobile ICT
Clinical decision support systems	Access to decision support systems using mobile ICT
Electronic patient information	Access to electronic patient information (such as EHR/EMR, laboratory results, X-rays, etc.) using mobile ICT
mLearning	Access to online educational resources using mobile ICT

Mobile ICT (information and communications technology) refers to mobile devices or hand-held computers such as mobile phones, laptops, tablets or PDAs, which can be used for text, voice or image communication, and can collect, process and report data.

(source: WHO 2016b, Global Observatory for eHealth, 'Global diffusion of eHealth: Making universal health coverage achievable. Report of the third global survey on eHealth', <http://apps.who.int/iris/bitstream/10665/252529/1/9789241511780-eng.pdf?ua=1>, Table 2.1 p. 29)

Getty Images/Christophe Boisivieux



Figure 9.12 The number of mobile phones and portable digital devices around the world is increasing and so too is the opportunity for sharing health information.

Australian digital technologies enabling increased knowledge sharing

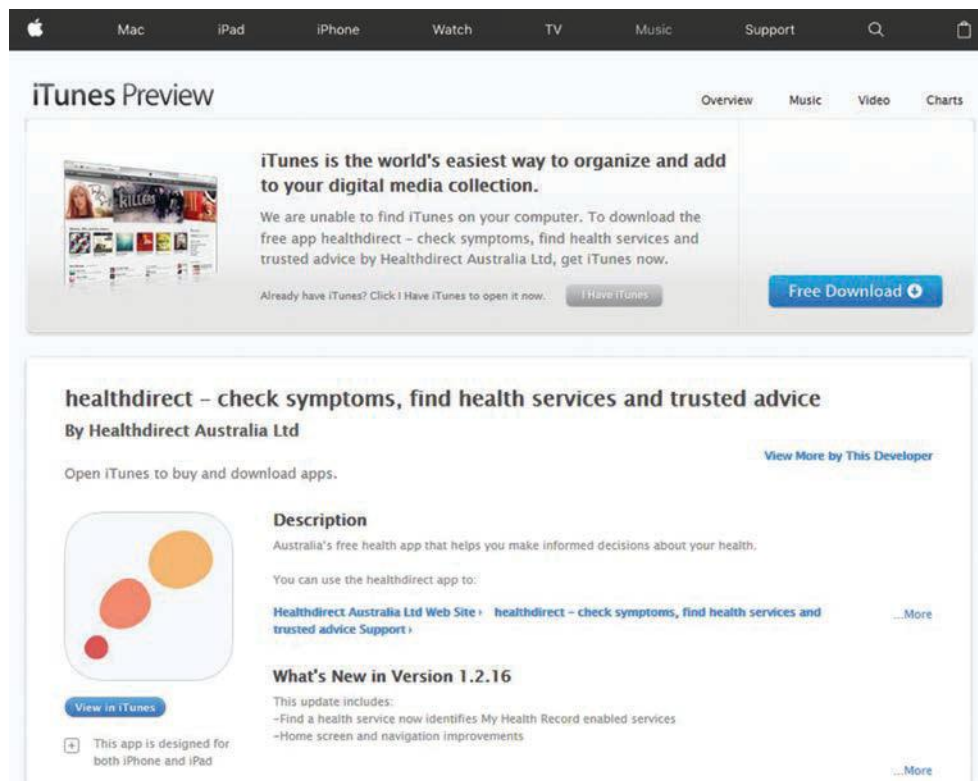
Digital technologies are a growing part of Australia's health care system. In a study conducted in 2014, GPs identified the following areas where they would see most benefit from digital technologies:

- Improved quality-of-care and better health outcomes (36%)
- Easier access to care for existing patients (32%)
- Reduction in administrative time, allowing greater time for patients (32%)
- More efficient processes and communication (29%)

Extract from Georgeff M. 2014, 'Digital technologies and chronic disease management', AFP Patients & technology, 43(12); 842-846, <http://www.racgp.org.au/afp/2014/december/digital-technologies-and-chronic-disease-management/>

Health care practice supported by digital technologies has the potential to deliver many benefits to Australians, including:

- less time spent on administration
- simpler collaboration and communication
- shared electronic health records among health professionals
- e-Referral systems and electronically shared progress notes
- improved care planning and care management of patients, allowing tracking of appointments and progress
- more regular follow-up of patients with chronic conditions
- support for patient self-management, including reminders to help patients stick to their plan, mobile applications for monitoring patient behaviour, social networks for sharing patient experiences, and a support network.



With permission of Healthdirect

Figure 9.13 Apps like healthdirect allow Australians to check symptoms, find health services and get advice.

Every day many Australians use a digital device to look at information about their health. In 2013, 84% reported that they had looked for health information online over the past 12 months (Ewing et al. 2014). These online searches may use the internet and involve anything from simply going to google.com and 'googling' symptoms, to looking at trusted medical sites funded by government organisations and reputable non-government organisations, to using an app.

While there are many reputable sites and apps, there are also many that can provide misleading information. In 2016, 'brain-training' organisation Lumosity was fined \$2 million for making unsubstantiated claims that its app could boost performance at work and slow down the onset of Alzheimer's (John 2016).

The Australian Government aims to provide factual and helpful health information via a number of forums. Two examples funded by the Australian Government are:

- a website called 'healthdirect' that provides quality, approved health information
- a free app 'My Child's eHealth Record', which helps parents/guardians of children aged 14 years or younger keep track of their child's health information, development and immunisations.

Beware!

While health information found online and shared via digital technology can be valuable in promoting health and wellbeing, Australians need to be careful.

- There is a great deal of medical misinformation available online, which can lead to panic.
- Many people make the error of using online health information to self-diagnose, which may result in them choosing to not see their doctor, or self-medicating with over-the-counter alternatives to prescribed drugs.
- An estimated 60% of Australian adults have poor health literacy and may struggle to make sense of the information they find on the internet (ACSQHC 2013).



Weblink

INVESTIGATE

- 1 Visit the Australian Doctor website to see more apps available to advise Australians on their health.
- 2 Check out the healthdirect website. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the two weblinks.

FACTS OR FICTION?

Online

→ Quality health and wellbeing content online can help you make informed decisions.

→ In what formats is health information available online?
Text, images, audio, videos, animations, tools and apps.

84%
of Australians say they looked for health information online in the past year.

→ How can you consume it?
Via computers, laptops, tablets, mobile phones and social media.

→ Why do people use the internet to seek health advice?
They have limited time, want a second opinion, or they might be looking for information for family or friends.

When looking for trusted health information online, ask yourself these questions...

Can you trust it?

Who wrote it?

- What are the qualifications of the writers?
- Who publishes the content?

TIP » Check the 'About us' page.

TIP » Look for .gov or .edu sites.

Is it up to date?

- When was it written?
- When was it last reviewed?

TIP » Look for this information at the bottom of each page.

Is it accurate?

- Is the information based on research?
- Are information sources provided?

TIP » Look for HoNCode certification – a global standard for quality and transparent health information online.

TIP » Look for references at the end of the page.

Is it balanced?

- Are risks and benefits explained?
- Is the website selling something?
- Is there advertising on the site?

TIP » Commercial interests can mean the information is biased.

TIP » Beware of testimonials – they often make untested claims.

Is it right for you?

Is it clear?

- Is the information easy to find and understand?
- Are images or video used to help explain the text?

TIP » Browse the site or use any available search features.

Is your privacy respected?

- Is there a privacy policy on the site?
- If the site collects personal information, is it secure and private?
- What will your personal information be used for?

TIP » Look for a 'Privacy statement' or 'Privacy policy'.

Compare different sources

Think for yourself

Look for clues about the quality of information

What to do?

If in doubt, call healthdirect on 1800 022 222 to speak with a registered nurse 24/7

Remember, your doctor is the best person to make a diagnosis and answer questions about your health.

Self-care

Visit a pharmacy

See your doctor

Call triple zero (000)

Notes for parents

Parents and guardians should check that websites are appropriate for children.

There are sites that have been developed specifically for the information needs of young people.

Some health information sites may also have a section especially for children.

References

You might find our sources for these tips helpful for further reading:

- Healthy web surfing - www.nhm.gov.au/medlineplus/healthywebsurfing.html
- Tutorial: Evaluating health information - www.nhm.gov.au/medlineplus/evaluatinghealthinformation.html
- Content quality guidelines - www.healthdirect.gov.au/aboutus/content_guidelines.aspx
- Staying safe online - www.rhhs.uk/aboutNHISchoices/aboutnhschoices/staying-safe-online/Pages/find-health-information-online.aspx
- Health On the Net Foundation - www.hon.ch/HONcode/Conduct.html
- NHCON Ultrafeedback survey, August 2011

healthdirect Australia

HEALTHDIRECT AUSTRALIA is funded by the Governments of Australia.

With permission of Healthdirect, <https://www.healthdirect.gov.au/health-information-online>

Figure 9.14 Australians are encouraged to ensure the health information they attain from digital technology is reputable.

Future implications

Some of the future implications for Australians sharing and accessing information via digital technology are discussed below.

More aged, tech-savvy people

It is predicted that between 2012 and 2060 the number of people aged over 75 years will grow by approximately 4 million (Productivity Commission 2013). As a result of this ageing of the population, it is expected that by 2050, the demand for aged care staff will quadruple. This means further growth and improvements in digital access to healthcare will be more critical than ever. In addition, Australia's elders will be tech-savvy, and it is expected that they will be using this technology regularly and well (Morris et al. 2012).

Surgical advances

Digital technology may play an even greater role in training medical practitioners. For example, a professional can supervise, train and assist a fellow practitioner on medical procedures remotely. In future, surgical procedures may be conducted remotely via a robotic surgical system.

Personal care data

It is predicted that by 2025 each consumer of health care will have a virtual cloud of personal data, containing conventional medical data, molecular and cellular data, as well as complex imaging and demographic information (Hood & Flores 2012). This would have a significant impact on the nature of care delivered by providers to their clients, allowing for far greater depth in personalised care through access to the comprehensive data and evidence in an individual's unique health profile.

Review and reflect

- 1 Describe 'digital technologies'.
- 2 Explain 'digital learning' and discuss one way in which digital learning can affect health and wellbeing.
- 3 For each of the following terms, explain what it means and discuss one way in which it can affect health and wellbeing.
a eHealth b mHealth c telehealth.
- 4 Discuss some of the benefits of using eLearning as a strategy for educating health care workers.
- 5 Discuss the role of social media in sharing health knowledge, and some of the benefits this can have for health and wellbeing.
- 6 Describe how digital learning and sharing health knowledge through digital technology can increase the number of people accessing health care.
- 7 Digital technologies are becoming a larger part of Australia's health care system. List two ways in which GPs can get the greatest benefit from this increase in technology.
- 8 Identify three benefits that knowledge sharing through digital technology can have for the Australian health care system.
- 9 List two Australian Government initiatives aimed at enabling more Australians to access knowledge via digital technologies. Discuss how each initiative can benefit health and wellbeing.
- 10 State and discuss two possible future implications of Australians sharing and accessing information via digital technology.

Case study

eLearning program in Afghanistan and Pakistan

The Aga Khan Development Network (AKDN) set up an eLearning programme in Afghanistan in 2010, which expanded to Tajikistan in 2013, Pakistan in 2015 and Kyrgyzstan in 2015. In 2011 the AKDN eHealth Resource Centre (eHRC) was established to provide strategic eHealth support to the AKDN health agencies and their partner health institutions with managing eHealth operations, such as the eLearning programme.

The eLearning programme facilitates professional development and capacity building via ICTs. The aim is to increase knowledge, enhance clinical and managerial skills and enable health professionals to deliver improved quality of care to patients. As part of eLearning, CME sessions ensure health care providers receive up-to-date training and skills. eLearning enables health professionals to undertake learning at a distance and helps to develop knowledge about eHealth which can assist them to become comfortable with using eHealth tools. It also reduces professional isolation, often a consequence of working in remote areas.

The AKDN eHealth programme found that health care professionals working in these regions felt isolated and cut off from their colleagues. They also found it difficult to participate in or access ongoing education opportunities. After rolling out a successful teleconsultation programme at a number of sites, AKDN implemented the same 'hub and spoke' model in the form of eLearning opportunities. A 'hub' is the central location or facility that provides the professor or teacher and learning materials. The 'spokes' are the facilities where the health professionals attend and participate in the courses. The AKDN eHRC has a number of hub and spoke locations fitted with the required technology in order to run these sessions.

...

'When I was moving from a very well-renowned teaching hospital to the hardship and relatively less developed area of Gilgit, I was excited about the opportunity to contribute, but also very concerned about my continuous learning and professional development. To my happiness and surprise, an eHealth link was established here at Aga Khan Medical Centre, Gilgit, for eLearning sessions from the Aga Khan University.' – Dr Nasreen Muhammad Saleem, Internal Medicine Specialist, Aga Khan Medical Centre, Gilgit

The eLearning programme began in Afghanistan by offering eLearning sessions from the French Medical Institute for Children to medical health care professionals and nursing staff at the Bamyan Provincial Hospital in 2010. eLearning services were then extended to Faizabad Provincial Hospital in 2011 and Mirwais Regional Hospital in 2013.

In 2015, Faizabad Provincial Hospital began acting as a hub site providing eLearning sessions to Baharak District Hospital and three Comprehensive Health Centres – Bashore, Ishkashim and Nusai. eLearning services were extended to multiple sites

in Tajikistan in 2013 followed by Kyrgyzstan and Pakistan in 2015. Medical and nursing eLearning topics are available, and to date over 5000 health care professionals have been trained through eLearning sessions offered in these countries.

In Pakistan, the Aga Khan University (AKU) in Karachi provides eLearning sessions to health care providers at Aga Khan Booni Medical Centre, Gilgit Medical Centre and Singal Medical Centre and to facilities in Afghanistan. Two types of sessions are offered: CME courses and Grand Rounds, which are structured online conferences designed to enhance medical knowledge and skills. The AKU offers credit hours for CME courses attended by participants, allowing them to receive credit for attending the courses remotely. In 2016, AKU began offering eLearning sessions three times a week in neurophysiology to health care providers at the French Medical Institute for Children.

Local physicians or health care professionals who have particular skills or knowledge to share determine the schedule of courses. Topics covered in the eLearning courses range from internal medicine, nutrition, blood transfusion, CPR and cannulation to infectious diseases. Sessions are also offered on topics such as applying evidence from a research paper to clinical practice, which helps to build health care providers' knowledge beyond general medical and nursing skills.

'I have been working at Bamyan Provincial Hospital since 2003. Before the eLearning programme became available in 2010, accessing professional development courses was very difficult. I had to travel either to Kabul (3 hours away) or to Takhar province (6 hours away) from Bamyan to avail the sessions. Even then, not all staff could go together as some had to stay behind to attend to patients. Only a few staff could go at a time. This was expensive and very time-consuming. Now, with the eLearning courses being broadcast directly from Kabul, we can attend the sessions right here without leaving the hospital. I attend two sessions a month now compared to one session a year when I had to travel to Kabul or to Takhar province.' – Chaman Ali, Nurse in-Charge, Bamyan Provincial Hospital, Afghanistan

An impact evaluation research study is currently underway evaluating the effectiveness of the eLearning intervention on improving maternal, neonatal and child health knowledge and practices at all sites in Afghanistan and the Khorog Oblast General Hospital in Tajikistan. The strengths and weaknesses of the eLearning approach and factors that lead to the success or failure of such interventions in health care settings of low- and middle-income countries will also be identified. The research study is projected to be completed by early 2017.

Future plans include analysing and evaluating lessons learnt from the eLearning programme in central Asia with a view to implementing a similar eLearning programme in Kenya.

Extract from WHO 2016, Global Observatory for eHealth, 'Global diffusion of eHealth: Making universal health coverage achievable. Report of the third global survey on eHealth'





Case study questions

- 1 What is the key focus of the eLearning programme in the case study? List three of its aims.
- 2 Explain how overcoming professional isolation can be a benefit to the health and wellbeing of the healthcare professionals engaging in this eLearning program.
- 3 Explain the 'hub and spoke' model used to form eLearning opportunities.
- 4 List three of the countries benefiting from this programme.
- 5 Identify three of the topics covered in the programme and discuss how each could impact health and wellbeing in the countries discussed in the case study.



Case study eLearning

eLearning programme in Afghanistan
and Pakistan

© WHO 2017

Figure 9.15 eLearning is an example of digital technology allowing knowledge sharing to positively affect health outcomes by increasing the number of skilled health care workers globally.

Case study

How Googling your health questions just got easier and more reliable

by Kate Aubusson

You're sick. Your head is pounding, the sunlight is too bright, you're nauseated and vomiting and feeling very sorry for yourself.

What do you do? You grab your smartphone and through blurred vision you Google 'migraine'.

When we're sick, when our children develop a strange red rash or when we catch a news story about a lactose intolerant cow, we start Googling, and Google knows it.

For the first time Google has launched health condition cards in Australia, designed to answer users' health-related questions, queries and curiosities.

One in every 20 Google searches are health-related, according to the tech giant. Google wants to make sure users are getting accurate information, said project manager Isobel Solaqua.

'Starting today when Australians search for common health conditions, such as asthma, they will start to see health cards appear in their search results,' Ms Solaqua said.

For instance, users searching for coeliac disease, measles or pneumonia will find an outline of the conditions, symptoms, diagnosis, treatment pathways and prevalence.

It could be a potent antidote to dodgy websites and charlatan health gurus peddling junk health advice and treatments that are at best ineffective and at worst dangerous.

'These health cards are meant to provide basic information about health conditions and a framework to help users dive deeper across the web and do deeper research as well as to have more informed conversations with their doctors,' Ms Solaqua said.

Some health cards are accompanied by illustrations created by licensed medical illustrators.

The feature was developed with the expertise of US-based medical doctors led by Google's Dr Kapil Parakh, a cardiologist, and Mayo Clinic doctors who compiled, curated and reviewed the most relevant and accurate health facts.





No pharmaceutical company or other commercial healthcare provider was involved in creating the cards, and does not recommend specific medications, Ms Solaqua said.

It was important the health cards gave people information their doctors would want their patients to see, she said.

The health cards are sources of information only, Ms Solaqua stressed. They are not a diagnostic tool and cannot replace a face-to-face consultation with a flesh-and-blood doctor. It's advice that is clearly visible on the cards.

'Everybody should be concerned when people are not getting the healthcare they need or have a right to access,' Ms Solaqua said.

'What we can see is that people are going to the internet to look for information.

'Instead of trying to pretend that that isn't a problem and that people aren't finding bad information on the internet, what the health cards are meant to do is provide accurate and reliable information created in a partnership with medical doctors and to make sure there is a source of information online that people can trust,' she said.

The Australian version mimics the US health cards launched in February 2015. But Google hoped to partner with Australian groups to tweak them to better fit the local health scene, and Australia-specific prevalence data, Ms Solaqua said.

The cards had been well received by US clinicians, who often downloaded the health cards to present to their patients, she said.

The feature's success is in stark contrast to the failed Google Health venture, an online personal health record system launched in 2008 that didn't catch on.

Australian doctors are cautiously welcoming of Google's forays into the health space.

A NPS Medicinewise survey suggested three in five Australians used internet searches to avoid seeing a doctor. That proportion rose to 80 per cent among 18–34 year olds.

'There is a lot of potential here,' said Dr Nathan Pinski, chairman of the Royal Australian College of General Practitioners' e-health and technology committee.

'There is no question people need to be able to access reliable health information. The question becomes what makes a difference to patient health at the end of the day?' he said.

There was the potential for anxious patients to dismiss a symptom that may indicate a serious health problem after a quick Google search has allayed their concerns. On the flip side, their Googling could heighten their anxieties, Dr Pinski said.

'We just don't know. We need to have a watch-and-wait approach with these things,' he said.

Dr Pinski reiterated Google's stance.

'Nothing beats face-to-face consultations with medical practitioners,' he said. 'It's what we've been trained to do.'

Extract from Aubusson K, 2017, 'How Googling your health questions just got easier and more reliable', Sydney Morning Herald, 1 February 2017

Case study questions

- 1 Identify and briefly discuss two possible benefits of the Google health condition cards for health and wellbeing.
- 2 Identify and briefly discuss possible negatives of the Google health condition cards for health and wellbeing.
- 3 Discuss some of the reasons that people don't visit a GP when they have symptoms of an illness.
- 4 Discuss how the Google health condition cards could have a positive impact on the Australian health care system.

Chapter summary



Unit 4, Area of
Study 1 revision
cards

Climate change

- Each of the past three decades has been successively warmer than any preceding decade since 1850. Sea levels are rising, glaciers melting and precipitation patterns changing, and extreme weather events are becoming more intense and frequent.
- Rising sea levels could have a devastating impact on coastal habitats and cities, as buildings, businesses and homes are in danger of being flooded and destroyed.

Conflict

- Conflict causes death, injuries, mental stress, depression, a worsening of existent malnutrition (particularly in infants and children) and outbreaks of communicable diseases. It also reduces access to food, medicine, immunisations, medical technology and supplies, clean water, sanitation, electricity, shelter and health care.

Migration

- Mass migration often leads to increased violence, higher newborn mortality, malnutrition rates rise, increased rate of respiratory infections, increased vulnerability to non-communicable diseases (NCDs), and increased likelihood of outbreaks of food- and waterborne diseases.

Global trade

- Reduced global trade barriers, ease of advertising, and promotion of products to foreign markets via the internet has increased companies doing business outside their country of origin.
- Increased world trade has resulted in increased economic growth around the globe. It has raised average incomes, created jobs, increased competitiveness and reduced prices of goods.

Tourism

- Over the past two decades, international tourist arrivals have more than doubled and numbers are continuing to grow.

Digital technologies

- Digital technologies are electronic tools, systems, devices and resources that generate, store or process data. These include social media, online games and applications, multimedia, productivity applications, cloud computing, interoperable systems and mobile devices.
- Access to digital technology and the internet globally has increased dramatically over the past decade. This encourages sharing of knowledge that can have an impact on health, and has resulted in an increase in digital learning, including 'electronic health' (eHealth) and 'mobile health' (mHealth).
- Telehealth is the practice of medicine at a distance, involving an interaction between a health care provider and a patient when the two are separated by distance.

Exam-style questions with sample answers

A global trend is that as a result of climate change there are more occurrences of extreme weather events

- 1 List three examples of extreme weather events. (3 marks)

Sample answer: Any three of the following will suffice for full marks:

- increased floods
- increase in extreme heat
- increase in prevalence of droughts
- increase in hurricanes.

- 2 Select one of the three examples you listed in Question 1. Describe the implication of this extreme weather event for the health and wellbeing of a population affected by it. (3 marks)

Sample answer: Students are required to choose one of their listed examples from Question 1. Three marks are awarded for three descriptions of how their chosen extreme weather event can impact upon health and wellbeing.

For example, increase in extreme heat:

- Extreme heat contributes directly to an increase in the prevalence of deaths from cardiovascular and respiratory disease, particularly among elderly people.
- High temperatures increase the levels of ozone and other pollutants in the air, as well as pollen levels, so the prevalence of asthma will increase.
- Extreme heat will reduce crop yields and hence malnutrition rates will rise.

Questions for you to practise

- 1 World trade can be defined as 'the worldwide business that involves making and collecting payments for transactions in goods and services, and transporting them to interested markets'. Reduced global trade barriers, increased ease of advertising in many low-income nations, and the ease of promoting products to foreign markets via the internet, have increased levels of world trade. Also climbing is the number of people travelling internationally. Over the past two decades, international tourist arrivals have more than doubled, from 473 million in 1992 to 1035 billion in 2012. By 2030, it is predicted that this total will rise to 1.8 billion.

Identify and describe one positive consequence of increased world trade and tourism for health and wellbeing. (3 marks)

- 2 Increased world trade has resulted in an increase in the marketing and sales of tobacco, alcohol and processed foods in many low-income and middle-income countries, with many of these nations now experiencing a 'double burden of disease'.
- a Explain what the term 'double burden of disease' means. (2 marks)
- b Discuss the impact that an increase in sales of tobacco in low-income countries can have on the physical, social, emotional, mental and spiritual dimensions of health and wellbeing of people living in these countries. (5 marks)

- 3** Access to digital technology and the internet globally has increased dramatically over the past decade. This access encourages the sharing of knowledge that can have an impact on health, and has resulted in an increase in digital learning.
- a** List three examples of how digital technologies that enable increased knowledge sharing can improve health and wellbeing globally. **(3 marks)**
 - b** Identify and describe one negative consequence for health and wellbeing of digital technologies that enable increased knowledge sharing. **(3 marks)**
- 4** Identify and briefly discuss an issue that may arise when a member of the general population not trained in medicine accesses general health information via digital technology. **(2 marks)**
- 5** Explain the relationship between the effects of climate change and the increase in prevalence of malaria. **(3 marks)**

Chapter 10: The UN's Sustainable Development Goals

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

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

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Key terms

- acquired immunodeficiency syndrome (AIDS)
- climate change
- food security
- gender equality
- global partnership
- global warming
- human immunodeficiency virus (HIV)
- malaria
- maternal mortality
- Millennium Development Goals
- poverty
- public sector
- private sector
- sanitation
- tuberculosis (TB)
- Sustainable Development Goals (SDGs)
- United Nations

In this chapter

Origin of the Sustainable Development Goals.....	page 279
Rationale for the SDGs.....	page 280
Objectives of the SDGs.....	page 282
Goal 3: Good health and wellbeing	page 284
What is SDG 3 seeking to achieve?	page 284
Why is SDG 3 important?	page 285
What has been achieved so far?	page 286
What is being done to achieve SDG 3?.....	page 287
How does SDG 3 promote health and wellbeing, and human development?.....	page 287
Relationships between SDG 3 and SDGs 1, 2, 4, 5, 6 and 13.....	page 288
SDG 1: No poverty	page 288

SDG 2: Zero hunger	page 292
SDG 4: Quality education	page 295
SDG 5: Gender equality	page 299
SDG 6: Clean water and sanitation	page 303
SDG 13: Climate action.....	page 306
Collaboration between the health sector and other sectors	page 311
World Food Program: Scaling Up Nutrition in Sri Lanka	311
Pro-Water: promoting water and sanitation access, integrity, empowerment, rights and resiliency	312

Origin of the Sustainable Development Goals

In 2015 the **United Nations (UN)**, an intergovernmental organisation that promotes international cooperation, established its 2030 Agenda for Sustainable Development. At the core of this plan are 17 goals, referred to as the **Sustainable Development Goals (SDGs)**. These SDGs are intended to guide the efforts of the international community until the year 2030. This agenda and the 17 goals aspire to ensuring prosperity and wellbeing for all people, while protecting our planet.

It is important to spend a little time looking back in history to understand where the SDGs came from and the work that they build upon. In September 2000, world leaders met for the Millennium Summit, held at UN headquarters in New York. They adopted the United Nations Millennium Declaration, committing their nations to a new **global partnership** to reduce extreme poverty, with a series of targets to be met by 2015. These goals became known as the **Millennium Development Goals (MDGs)** (Figure 10.1). By 2015, much progress had been made in some areas linked to the MDGs, but many of the goals had not been achieved. So in 2015 the UN General Assembly formally accepted a new set of 17 measurable SDGs, ranging from ending world **poverty** to achieving **gender equality** (Figure 10.2). These goals should be achieved by 2030.

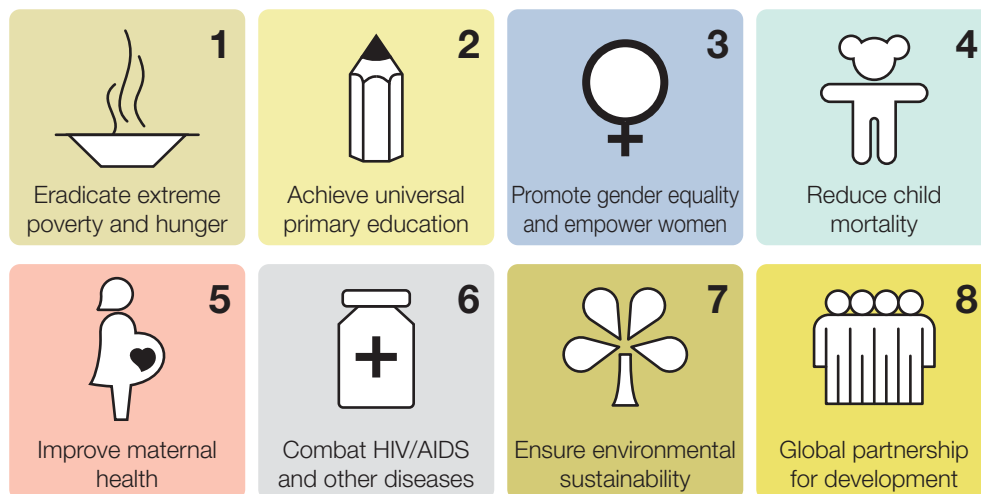


Figure 10.1 The superseded Millennium Development Goals

On 1 January 2016, the 17 SDGs, also known as Global Goals, came into force. Unlike the previous MDGs, which were primarily set and enacted by wealthy countries, the SDGs require action by all countries, including low-, high- and middle-income. They acknowledge that ending poverty requires strategies not only for building economic growth and job opportunities, but also for addressing a range of social needs including education, health and social protection, while also addressing **climate change** and ensuring environmental protection. The SDGs are not legally binding. It is up to each individual government to establish a national framework for achieving them, and to review progress made in implementing them (UN n/da).

United Nations an international organisation founded in 1945 after World War II by 51 countries committed to maintaining international peace and security, developing friendly relations among nations and promoting social progress, better living standards and human rights

Sustainable Development Goals a set of 17 goals set by the United Nations for the health and wellbeing of all people, and the protection of the planet, intended to be achieved by 2030

global partnership a commitment of countries around the world to work together

Millennium Development Goals a set of eight goals set by the United Nations and intended to be achieved by 2015

poverty when people lack the resources to meet their basic needs; the World Bank defines extreme poverty as living on less than US\$1.90 per day

gender equality when everyone receives equal treatment and no one is discriminated against because of their gender



Weblink

WATCH

Do a web search for the short video 'The future starts now', narrated by Mogens Lykketoft. The video discusses the history and lead-up to the SDGs.

climate change a change in weather patterns over decades or longer



Figure 10.2 The UN Sustainable Development Goals



WATCH

Search for and watch the three-minute video 'We the People for the Global Goals'. In this video, well-known and everyday people outline the 17 Sustainable Development Goals.

CRITICAL FRIEND

Ask the person next to you to explain the difference between the Millennium Development Goals and the Sustainable Development Goals.

Rationale for the SDGs

The following extract is from the UN document that launched the SDGs, titled 'Transforming our world: the 2030 Agenda for Sustainable Development'. This document outlines the basis upon which the goals were developed.

This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. We recognise that eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development. All countries and all stakeholders, acting in collaborative partnership, will implement this plan. We are resolved to free the human race from the tyranny of poverty and want and to heal and secure our planet. We are determined to take the bold and transformative steps which are urgently needed to shift the world onto a sustainable and resilient path. As we embark on this collective journey, we pledge that no one will be left behind. The 17 Sustainable Development Goals and 169 targets which we are announcing today demonstrate the scale and ambition of this new universal Agenda. They seek to build on the Millennium Development Goals and complete what these did not achieve. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental.

Extract from UN, Sustainable Development. Knowledge Platform. 'Transforming our world: the 2030 Agenda for Sustainable Development, Preamble'; <https://sustainabledevelopment.un.org/post2015/transformingourworld>

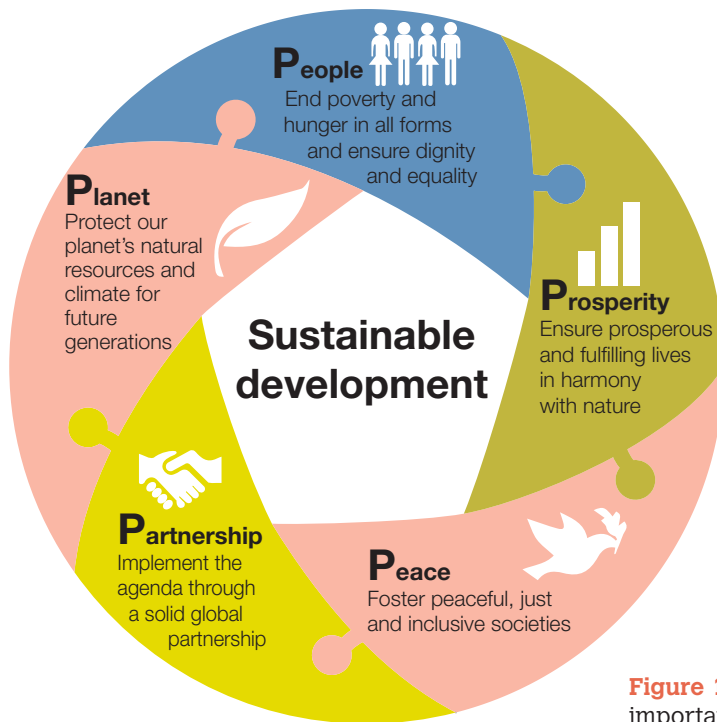


Figure 10.3 The five areas of importance of the SDGs (UN 2017)

Five areas of importance

The UN has stipulated that the SDGs should stimulate action in five areas of importance for humanity and the planet: people, planet, prosperity, peace and partnership.

People

We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment.

Planet

We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.

Prosperity

We are determined to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.

Peace

We are determined to foster peaceful, just and inclusive societies which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development.

Partnership

We are determined to mobilize the means required to implement this Agenda through a revitalised Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focussed in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people.

Extract from UN, Sustainable Development. Knowledge Platform. 'Transforming our world: the 2030 Agenda for Sustainable Development, Preamble, <https://sustainabledevelopment.un.org/post2015/transformingourworld>



Weblink

INVESTIGATE

Read more about the SDGs at the UN website. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

Learning tip

The terms 'developed' and 'developing' commonly refer to countries categorised as high-income (for developed) and low-income (for developing). The Sustainable Development Goals often categorise countries as 'developed' and 'developing'.

Objectives of the SDGs

Governments, businesses and civil society are all expected to work together with the UN to achieve the SDGs. The SDGs apply to all countries, and it is only with collaboration in all nations on earth that these ambitious goals will be achieved. The SDGs are intended to complement one another to achieve three major objectives:

- 1 end extreme poverty
- 2 fight inequality and injustice
- 3 tackle climate change.

End extreme poverty

Many SDGs are linked to the objective of ending extreme poverty, including SDGs 1, 3, 5, 8, 10 and 16. These goals demonstrate that many different factors can contribute to individuals and countries experiencing significant poverty. An end to extreme poverty is essential to ensuring that people can afford resources that will improve their health, wellbeing and human development.

Fight inequality and injustice

SDGs 5, 10 and 16 link directly to this objective. Yet when you consider that poverty, hunger, health, education and employment can all be linked to inequality and injustice you can see that achievements in many SDGs work towards greater equality and justice for all. Equality and justice for all means the opportunities currently available to only select groups will be more widespread, and more people will have the chance to prosper and live their lives in a dignified manner.

Tackle climate change

If climate change is not halted and reversed, many SDGs will be affected. Goal 13 signifies that action needs to be taken to protect the future of the planet from changes in climate. Goals 7, 11, 12 and 17 will significantly contribute to tackling climate change. If climate change cannot be halted, it is difficult to think of any SDGs that will not be impacted in some way.



Weblink

WATCH

Watch the video 'World's largest lesson', in which Emma Watson and Sir Ken Robinson discuss how young people can help achieve the objectives of the SDGs. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.



Figure 10.4 For the SDGs to succeed, all countries must take responsibility for achieving them.

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Learning tip: Focus on seven SDGs

Each of the SDGs has a short name and a longer name. For the purpose of the HHD course you only need to know the short name. For this course, the following SDGs are the focus:

- *Goal 1 No poverty* (End poverty in all its forms everywhere)
- *Goal 2 Zero hunger* (End hunger, achieve food security and improved nutrition, and promote sustainable agriculture)
- *Goal 3 Good health and wellbeing* (Ensure healthy lives and promote wellbeing for all at all ages)
- *Goal 4 Quality education* (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all)
- *Goal 5 Gender equality* (Achieve gender equality and empower all women and girls)
- *Goal 6 Clean water and sanitation* (Ensure availability and sustainable management of water and sanitation for all)
- *Goal 13 Climate action* (Take urgent action to combat climate change and its impacts)

CRITICAL FRIEND

Find a partner in your class and challenge them to recall the names of the seven SDGs you need to know for this course.

Case study

Implementing the SDGs: Indonesia

Indonesia has been involved in the SDGs since their early conception in 2012 when former President Susilo Bambang Yudhoyono was appointed as a Co-Chair of the High-Level Panel of eminent persons on the Post-2015 Development Agenda. Indonesia has expressed its strong commitment to the 2030 Agenda and the SDGs. President Joko Widodo's nine national priorities and the country's Medium-Term Development Plans align well with the SDGs. The National Development Planning Agency, Bappenas, performed a mapping exercise for the goals and targets of the national plan with the SDGs, finding that 108 out of 169 SDG targets are matched. Some of the boldest targets, such as ending violence against children, are openly debated [in the country] and thereby in the realm of the possible to achieve. ...

Private-sector organizations in Indonesia have been among the most active partners in launching SDG related activities. The SDG Philanthropy Platform facilitates dialogue and collaboration on the SDGs. The Association of Philanthropy Indonesia ... [has launched a group called Indonesia Philanthropy and Business for the SDGs], which has a membership of 10 associations representing more than 600 businesses and philanthropic foundations.

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The **public sector** has also made significant efforts to implement the SDGs. In January 2016, the Indonesian government transformed its MDGs Secretariat into the SDGs Transition Secretariat, with additional support from the United Nations Country Team, the Australian Government, the Asian

Development Bank and the Ford Foundation. It is notable that the Ministry of Health has also created a secretariat to deal specifically with SDG 3 on good health and wellbeing.

By May 2016, two public universities [in Indonesia] had engaged in the SDGs. The University of Indonesia is collaborating with the Sustainable Development Solutions Network and Bappenas on localizing the SDGs, and the University of Padjajaran has established an SDG Centre to prepare policy recommendations and independent monitoring of the SDGs. A private university, BINUS, has also adapted its community development programme to contribute to SDGs 1 to 8. ...

To raise awareness of the SDGs among young people and children, who represent 25 percent of the Indonesian population, the UN Resident Coordinator in Indonesia appeared in two 30-minute shows on the biggest national TV channel, TV RI, to talk with young children about development in the country and the importance of achieving the SDGs. The UN in Indonesia also created an SDG partnership with Radio Elshinta, one of Indonesia's premier and largest radio networks, generating 25 interviews and articles about the SDGs to date. The information is also cross-posted with other Elshinta channels, including Elshinta TV and Elshinta Magazine. Their postings on social media are shared with over 1.6 million followers on Twitter (hashtag #ElshintaSDGs). The UN has entered into a partnership for the SDGs with the most influential daily newspaper, *Kompas*, and has named a renowned actor and a famous musician as 'SDG movers' to campaign for the SDGs.

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Case study questions

- 1 Provide examples from the case study of how Indonesia is contributing to the SDG effort.
- 2 Provide an example of how Indonesia is trying to raise public awareness of the SDGs. Why is this important?
- 3 Describe why it is essential for the **private sector** to be involved in achieving the SDGs.
- 4 Outline how the Australian Government supports Indonesia in achieving the SDGs.

public sector the part of the national economy that is controlled by the state/government

private sector the part of the national economy that is not controlled by the state/government

Review and reflect

- 1 Outline the SDG initiative.
- 2 Explain how the MDGs and the SDGs are linked to each other.
- 3 Describe the rationale for the SDGs.
- 4 List the five areas of importance that relate to the SDGs. Briefly outline each area.



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SDG 3: Good health and wellbeing

SDG 3: Ensure healthy lives and promote wellbeing for all at all ages

As SDG 3 has good health at its core, we will first explore this goal and then look at how SDGs 1, 2, 4, 5, 6 and 13 link to SDG 3.

Goal 3 aims to ensure health and wellbeing for all people at all ages by: improving reproductive, maternal and child health; ending epidemics of major communicable diseases; reducing non-communicable and environmental diseases; achieving universal health coverage; and ensuring access to safe, affordable and effective medicines and vaccines for all.

What is SDG 3 seeking to achieve?

By 2030 SDG 3 seeks to:

- reduce the global maternal mortality ratio ...
- end preventable deaths of newborns and children under 5 years of age ...
- end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases ...
- reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
- strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol ...
- ensure universal access to sexual and reproductive health-care services, including family planning, information and education, and the integration of reproductive health into national strategies and programmes ...
- achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all ...

Learning tip:

Goals versus targets

Each SDG is made up of a number of targets. These targets are the measures used by the United Nations to determine whether or not progress is being made in achieving a particular SDG. As a student, you do not need to know the targets for each SDG.

- substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate
- support the research and development of vaccines and medicines for the communicable and noncommunicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines ... and, in particular, provide access to medicines for all
- substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States
- strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

[And, by 2020:]

- halve the number of global deaths and injuries from road traffic accidents.

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Alamy Stock Photo/BSIP SA

Figure 10.5 SDG 3 has a significant focus on women and children

Why is SDG 3 important?

The following facts and figures from the UN (UN n/db) provide examples that illustrate the significant need that exists around the world for action to be taken in many areas to improve health.

- Each year, more than 6 million children die before the age of 5 years.
- Children born to poor families are almost twice as likely as those from richer families to die before the age of 5 years.
- In low-income regions, only half of women receive the health care they need.
- It is estimated that at the end of 2013, 35 million people were living with HIV.
- **HIV** is the leading cause of death for women of reproductive age worldwide.
- In 2013 there were 250 000 new HIV infections among adolescents, and two-thirds of these were among girls.
- NCDs accounted for 52% of all deaths in the population under age 70 ('premature deaths'). More than 75% were from cardiovascular diseases, cancer, diabetes and chronic respiratory disease.

Learning tip

For the purpose of this course, students are not expected to remember data related to each goal. However, familiarising yourself with this information highlights the scale of the challenge that faces the world as it attempts to achieve the SDGs.

HIV a retrovirus causing severe infection which, if untreated, can lead to AIDS

acquired immunodeficiency syndrome (AIDS) the condition that arises post-infection by the human immunodeficiency virus (HIV) in which progressive failure of the immune system allows life-threatening opportunistic infections and cancers to thrive

maternal mortality the death of a woman while pregnant or within 42 days of the end of pregnancy, from any cause related to, or aggravated by, the pregnancy or its management

malaria a mosquito-borne infectious disease caused by a parasite

- In Africa, **AIDS** is the leading cause of death in adolescents (aged 10–19), and globally it is the second most common cause of death among adolescents.
- The **maternal mortality** ratio (the proportion of mothers who do not survive childbirth compared to those who do) in low-income regions is 14 times that of high-income regions.
- Almost half of the world's population is at risk of **malaria** and, in 2015, the incidence rate was 91 new cases per 1000 people at risk, an estimated 214 million cases.
- In 2012, non-communicable diseases (NCDs) caused around 38 million deaths per year, accounting for 68% of all deaths worldwide.
- Around 1.25 million people died from road traffic accidents in 2013, an average of 3400 each day.

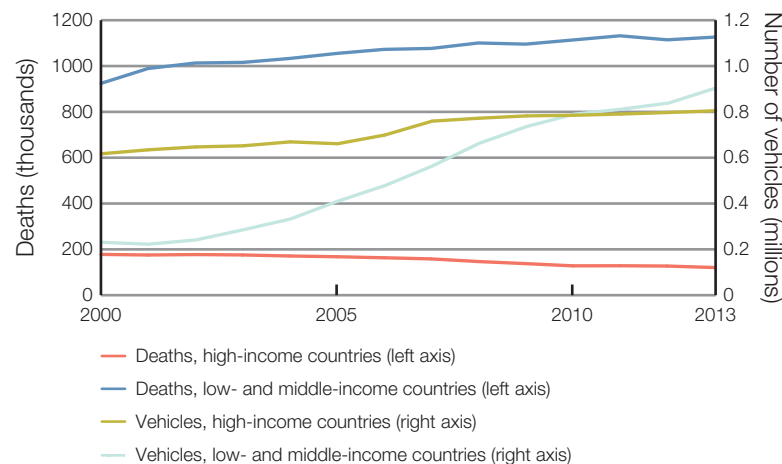


Figure 10.6 Number of road traffic deaths (thousands) and vehicles (millions) in high-, low- and middle-income countries, 2000–2013 (UN 2016)

What has been achieved so far for SDG 3?

- Since 2000, measles vaccines have averted nearly 15.6 million deaths ...
- Maternal mortality has fallen by almost 50 per cent since 1990 ...
- More women are receiving antenatal care. In developing regions, delivery of antenatal care increased from 65 per cent in 1990 to 83 per cent in 2012 ...
- At the end of 2014, there were 13.6 million people accessing antiretroviral therapy.
- New HIV infections in 2013 were estimated at 2.1 million, which was 38 per cent lower than in 2001 ...
- New HIV infections among children have declined by 58 per cent since 2001 ...
- Over 6.2 million malaria deaths have been averted between 2000 and 2015, primarily of children under five years of age in sub-Saharan Africa. The global malaria incidence rate has fallen by an estimated 37 per cent and the mortality rates by 58 per cent.
- Between 2000 and 2013, **tuberculosis** prevention, diagnosis and treatment interventions saved an estimated 37 million lives. The tuberculosis mortality rate fell by 45 per cent and the prevalence rate by 41 per cent between 1990 and 2013.

tuberculosis (TB) an infectious disease caused by the bacterium *Mycobacterium tuberculosis*, which most commonly affects the lungs

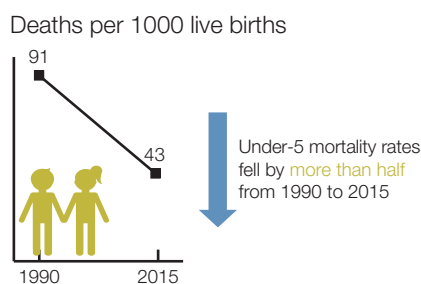


Figure 10.7 Progress on under-5 mortality rates – the mortality rate fell by more than half from 1990 to 2015 (UN 2017).

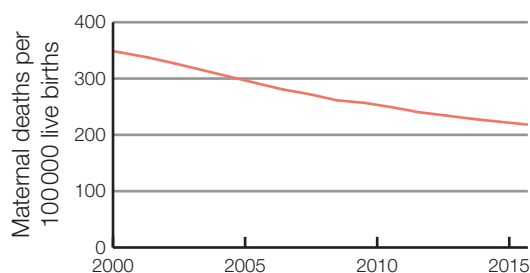


Figure 10.8 Global maternal mortality ratio, 2000–15 (UN 2017)

What is being done to achieve SDG 3?

Some of the steps being taken for SDG 3 include:

- increasing access to prenatal and postnatal care
- ensuring health workers monitor the health of mothers and babies
- providing women with access to contraceptives and family planning services
- increasing access to antiretroviral drug therapy for people who have HIV/AIDS
- increasing access to education about, for example, the importance of safe sex to reduce the spread of HIV
- increasing access to contraceptives such as condoms to reduce the spread of HIV
- increasing access to medications to treat malaria
- increasing access to malaria-preventative strategies, such as insecticide-treated bed nets and household mosquito spraying
- increasing access to vaccinations for conditions such as tuberculosis
- increasing access to education about non-communicable lifestyle diseases, such as obesity and lung cancer.

How does SDG 3 promote health and wellbeing, and human development?

Health and wellbeing

Some examples of the relationship between SDG 3 and health and wellbeing include:

- When people have access to preventative measures such as condoms, the likelihood of contracting communicable conditions such as HIV/AIDs is reduced. This can lower levels of anxiety about participating in sexual relationships and promote mental health.
- An increase in access to vaccinations promotes physical health as conditions such as polio are less likely to be contracted, and this promotes the efficient functioning of the body and its systems.

Human development

Some examples of the relationship between SDG 3 and human development include:

- When children are vaccinated, they are more likely to have good health and be able to attend school. This allows access to knowledge that enhances their capabilities and allows them to develop to their full potential.
- When people have access to strategies for preventing malaria, they are more likely to stay well, and consequently live long and healthy lives, participating in their community and decisions affecting their lives.

Relationships between SDG 3 and SDGs 1, 2, 4, 5, 6 and 13

SDG 1: No poverty

SDG 1: End poverty in all its forms everywhere

Goal 1 calls for an end to poverty in all its forms, including extreme poverty, over the next 15 years. All people everywhere, including the poorest and most vulnerable, should enjoy a basic standard of living and social protection benefits.



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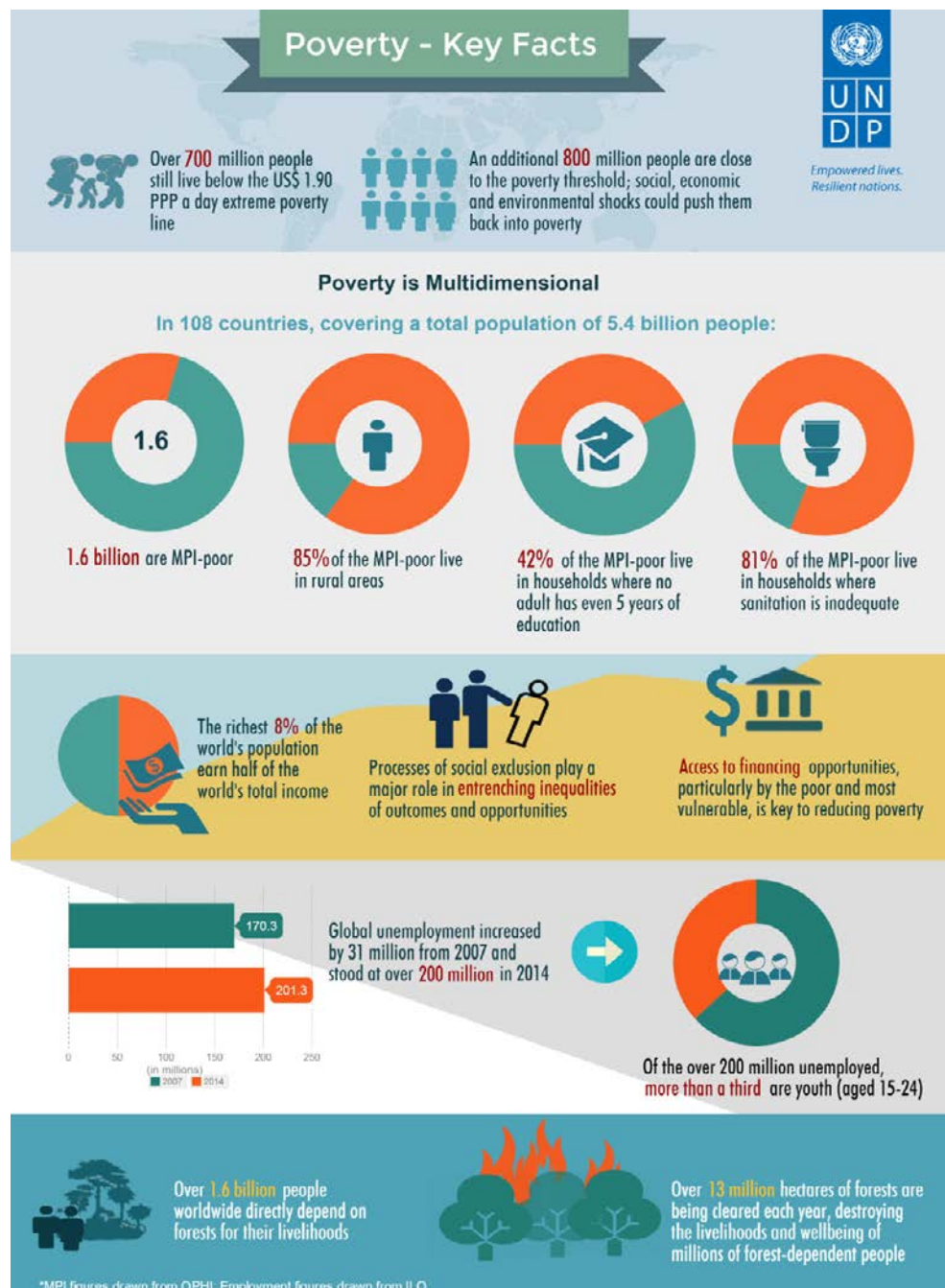


Figure 10.9 Key facts about poverty (source: UNDP, 'Support to the Implementation of Sustainable Development Goals. SDG 1', p.6)

PPP: purchasing power parity; MPI: Multidimensional Poverty Index

What is SDG 1 seeking to achieve?

- eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day ...
- reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
- implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable ...
- ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance ...
- build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

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Why is SDG 1 important?

Because:

- 836 million people still live in extreme poverty
- About one in five persons in developing regions lives on less than \$1.25 per day
- The overwhelming majority of people living on less than \$1.25 a day belong to two regions: Southern Asia and sub-Saharan Africa ...
- One in four children under age five in the world has inadequate height for his or her age
- Every day in 2014, 42 000 people had to abandon their homes to seek protection due to conflict

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What has been achieved so far for SDG1?

- The proportion of the global population living below the extreme poverty line dropped by half between 2002 and 2012, from 26 to 13 per cent. This translated to one in eight people worldwide living in extreme poverty in 2012. ...
- In 2015, 10 per cent of the world's workers and their families were living on less than 1.90 US dollars per person per day, down from 28 per cent in 2000.

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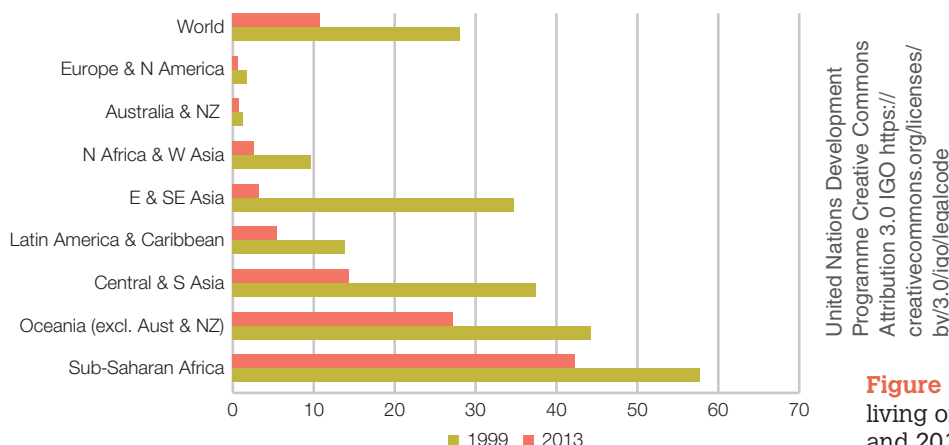


Figure 10.10 Percentage of the population living on less than US\$1.90 a day, 2002 and 2012

What is being done to achieve SDG 1?

- increasing access to educational opportunities for all, so that people can develop the skills to obtain employment
- reducing discrimination so that all people, including women and those with a disability, are able to obtain work
- improving access to essential resources such as health care and transportation, so that people can travel to and from work
- introducing social protection measures, including free health care and income security for the elderly, disabled or chronically ill
- improving all countries' abilities to prepare for and respond to natural disasters, so that people are not pushed into poverty following such events.

How SDG 1 promotes health and wellbeing, and human development

Health and wellbeing

- When people are not poor, they are able to afford healthy food to strengthen their immune systems. A strengthened immune system allows the body to function effectively. It reduces the risk of developing communicable diseases such as pneumonia and reduces mortality.
- When people are not living in poverty they are more likely to have the means to afford to send their children to school. At school these children are likely to make new friends and learn to interact with others, promoting their social health.

Human development

- With reduced poverty, people are more likely to be able to afford a decent standard of living by, for example, being able to pay for food, water and health care. This enables people to maintain good health and being able to contribute to their community through work.
- When a country's people do not live in poverty, the country as a whole is not poor, as the government can generate revenue via tax. This generates money to provide public services such as education which allows people to access knowledge, in turn enhancing their capabilities, such as literacy and numeracy skills.

How gains in SDG 1 contribute to gains in SDG 3

Progress in Goal 1 (no poverty) means that fewer people experience poverty. People who are not impoverished can afford resources such as food and health care. This makes them less likely to suffer from malnutrition, strengthening their immune systems, and reducing the likelihood that they will catch diseases such as measles, in turn contributing to Goal 3 (good health and wellbeing). If people can afford health care, they are more likely to get treatment for easily treatable conditions, such as diarrhoea, which reduces mortality and increases life expectancy, thus contributing to Goal 3.

Case study

Keeping children worm-free in Tanzania

Tanzania is known for its vast wilderness areas. With 16 national parks, including the famed Serengeti National Park, and 29 game reserves, this East African country has some of the continent's greatest concentrations of wild animals.

Yet like many African countries, this large and geographically diverse country has its fair share of tropical diseases. These include malaria, dengue and schistosomiasis.

Also known as 'snail fever', schistosomiasis is a parasitic disease carried by fresh water snails. It is one of the most widespread tropical diseases in the world after malaria, affecting more than 249 million people globally, including 100 million children.

The disease poses a huge health burden in developing countries, especially in Africa where more than 90% of the infections occur. In Tanzania, the first cases of schistosomiasis were reported in the early 19th century.

A lack of sufficient hygiene and activities such as swimming or fishing in infested water make school-aged children especially vulnerable to infection. The disease is also more common in poor communities without adequate access to safe drinking water and sanitation.

Abdominal pain, diarrhea and blood in the stool or urine are common symptoms of schistosomiasis. The effects on children can be quite dire – causing anemia, stunting and impaired learning, although the effects are usually reversible with treatment.

Prevention goes a long way towards addressing the problem. Yet only 27% of the 10.8 million people in Tanzania who require preventive treatment for schistosomiasis received it in 2014.

The Access and Delivery Partnership (ADP) – led by UNDP and in collaboration with the WHO Special Programme for Research and Training in Tropical Disease and PATH – helps build national capacities for the delivery of new health technologies for tuberculosis, malaria, and neglected tropical diseases like schistosomiasis.

Part of these efforts includes ensuring that preventative medication for schistosomiasis reaches children in areas that are most vulnerable.

To tackle this important public health problem, the Government of Tanzania has been implementing periodic, large-scale population treatment with Praziquantel tablets. This, combined with access to safe drinking water, improved sanitation and snail control, helps reduce transmission of the disease.

Drug distribution points are often set up in schools. More than 700 children at this school outside of the capital city Dar es

Salaam receive preventive treatment twice a year through the government programme. ADP also supports the training of front-line health workers to effectively deliver the preventive treatment to school children.

Children must take the medication on a full stomach, usually two hours after eating. A traditional Tanzanian meal of hearty rice and beans usually does the trick.

'Usually, children bring a packed lunch from home to school, but every six months we give them a hot meal as part of the mass drug administration programme,' said the school head mistress.

Until recently, the preventive treatment needs of younger children (infants and pre-school children) had largely been overlooked. A consortium of public and private institutions and national stakeholders in Tanzania such as the Ifakara Health Institute, with support from the Global Health Innovative Technology (GHIT) Fund, is now working on developing a new pediatric formulation of praziquantel. When this preventive medication becomes available, it will be distributed to younger children as part of the large-scale population treatment campaign.

Thanks to support from the Government of Japan, Tanzania is one of the three pilot countries where ADP is working in partnership with national stakeholders to improve health outcomes, including keeping children worm-free. This is achieved through new health technologies, such as the pediatric praziquantel, better supply chain management systems, and focused investments in existing health systems.

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Alamy Stock Photo/Jake Lyell

Figure 10.11 Children receiving worm treatment in Tanzania is an example of how SDGs 1 and 3 are closely related.



Case study questions

- 1 Outline how poverty may be contributing to people in Tanzania developing schistosomiasis.
- 2 Describe what is being done in Tanzania to address the high levels of schistosomiasis.
- 3 Give examples of the partnerships that have developed to help reduce levels of schistosomiasis.
- 4 Explain how this program is contributing to the achievements of two SDGs.



SDG 2: Zero hunger

SDG 2: To end hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 2 seeks to end hunger and all forms of malnutrition, and to achieve sustainable food production by 2030. All people should have access to sufficient nutritious food, and this will require widespread promotion of sustainable agriculture, a doubling of agricultural productivity, increased investments and properly functioning food markets.

What is SDG 2 seeking to achieve?

- end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants to safe, nutritious and sufficient foods all year round ...
 - end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons ...
 - double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment ...
 - ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality ...
 - increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries ...
 - correct and prevent trade restrictions and distortions in world agricultural markets ...
- [And by 2020:]
- maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

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Figure 10.12 One of the aims of SDG 2 is to ensure sustainable food production and incomes for small-scale food producers.

Why is SDG 2 important?

- Globally, one in nine people in the world today (795 million) are undernourished
- The vast majority of the world's hungry people live in developing countries, where 12.9 per cent of the population is undernourished.
- Asia is the continent with the highest level of hungry people – two thirds of the total ...
- Poor nutrition causes nearly half (45 per cent) of deaths in children under five ... each year
- One in four of the world's children suffer stunted growth. In developing countries the proportion can rise to one in three.
- 66 million primary school-age children attend classes hungry across the developing world, with 23 million in Africa alone. ...
- Agriculture is the single largest employer in the world, providing livelihoods for 40 per cent of today's global population. It is the largest source of income and jobs for poor rural households. ...
- If women farmers had the same access to resources as men, the number of hungry [people] in the world could be reduced by up to 150 million.
- 1.4 billion people have no access to electricity worldwide, most of whom live in rural areas of the developing world. Energy poverty in many regions is a fundamental barrier to reducing hunger and ensuring that the world can produce enough food to meet future demand.

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Learning tip

You are not expected to remember exact statistics related to each SDG, as these figures change constantly. Instead, you need to be able to interpret data from a graph or table and describe patterns (trends) in the data.

What has been achieved so far?

- the proportion of the global population suffering from hunger fell from 15% in 2000–2002 to 11% in 2014–2016 (UN 2017)
- 23% of children worldwide are underweight, down from 25% in 1990
- globally, the proportion of stunted children has fallen in all regions except Oceania.

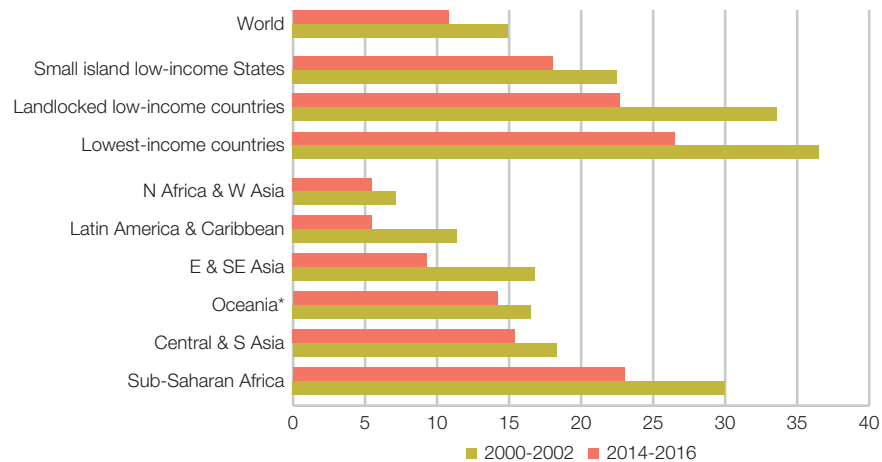


Figure 10.13 Number and proportion of people who are undernourished, 2000–2002 and 2014–2016 (UN 2017)

What is being done to achieve SDG 2?

- increasing levels of training in sustainable agriculture
- improving farmers' access to land, technology and markets, sustainable food production systems and resilient agricultural practices
- increasing investment in agricultural capacity in low-income countries.

How does SDG 2 promote health and wellbeing, and human development?

Health and wellbeing

- When children are not hungry, they have more energy to attend school. At school they may learn how to express their emotions appropriately, promoting their emotional health.
- When people are nourished, their immune systems are stronger, and so children who are adequately fed are less likely to suffer from diseases such as pneumonia and diarrhoea, and this promotes the functioning of the body and physical health.

Human development

- When adults have enough food to meet their needs, they are more likely to be able to attend work and earn an income. This means they are more likely to live creative, productive lives in accord with their interests.
- When children have enough food, they are likely to go to school and so eventually develop to their full potential.

How do gains in SDG 2 contribute to gains in SDG 3?

If people have access to food, they are less likely to develop malnutrition, and this reduces levels of mortality that result from malnutrition. Food also provides people with the nutrients they need to develop a strong immune system, which promotes their physical health. If people are not hungry, they have energy to work, such as growing and harvesting their own food. These activities can contribute to **food security** and assist in preventing chronic undernutrition.

food security when all people are able to obtain nutritionally adequate, culturally appropriate, safe food regularly through local non-emergency sources

Review and reflect

- 1 Describe the focus of SDG 3.
- 2 Explain how the work being done to achieve SDG 3 could improve human development worldwide.
- 3 Name SDG 1 and SDG 2. Outline how achievements in SDG 1 may be linked to achievements in SDG 2.
- 4 Explain how achievements in SDG 2 may be linked to achievements in SDG 3.
- 5 Provide an example of how the health sector can work with the private sector to contribute to improvements in SDG 3.

SDG 4: Quality education

SDG 4: Ensure inclusive and quality education for all and promote lifelong learning

Goal 4 focuses on both girls and boys having equal access to education at all levels, including primary, secondary and tertiary. It seeks to ensure that individuals are able to access education and training to acquire the knowledge, skills and values they need to function well and contribute to society.



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Figure 10.14 Primary school aged children in Africa studying the globe

What is SDG 4 seeking to achieve?

- ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes ...
- ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education ...
- ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university ...
- substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship ...
- eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations ...
- ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy skills ...
- ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development ...
- build and upgrade education facilities that are child, disability and gender sensitive and provide safe, nonviolent, inclusive and effective learning environments for all ...
- substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

[And, by 2020:]

- substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

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Why is Goal 4 important?

- Enrolment in primary education in developing countries has reached 91 per cent but 57 million children remain out of school.
- More than half of children that have not enrolled in school live in sub-Saharan Africa.
- An estimated 50 per cent of out-of-school children of primary school age live in conflict-affected areas.
- 103 million youth worldwide lack basic literacy skills, and more than 60 per cent of them are women.

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What was achieved by 2017 for SDG 4?

- The primary school net enrolment rate in low-income regions has reached 91% in 2015, up from 83% in 2000.
- The number of out-of-school children of primary school age worldwide has fallen by almost half, to an estimated 57 million in 2015, from 100 million in 2000.
- The literacy rate among youth aged 15 to 24 has increased globally from 83% to 91% between 1990 and 2015. The gap between women and men has narrowed.
- Global tertiary education enrolments doubled between 2000 and 2013, and increased 2.5 times in low-income regions, with almost equal numbers of men and women enrolled (UN 2015).

What is being done to achieve SDG 4?

- ensuring the provision of free primary and secondary education for all
- ensuring that all adults are provided with adult learning, education and training opportunities
- increasing the number of qualified teachers
- eliminating disparities in education such as for those who have disabilities and are Indigenous.

How does SDG 4 promote health and wellbeing, and human development?

Health and wellbeing

- Attending school provides children with the opportunity to connect with others and develop a sense of community. This promotes spiritual health.
- Receiving an education makes people more likely to learn behaviours that promote health, such as using protection when having sex. This is more likely to reduce the incidence of health conditions such as HIV/AIDS, thus promoting physical health.

Human development

- Attending school means people have access to knowledge and therefore to enhance their capabilities. This assists people to develop to their full potential.
- Literacy leads to greater income potential, so individuals can buy good food, shelter, clean water and healthcare and so acquire a decent standard of living.

How do gains in SDG 4 contribute to gains in SDG 3?

If children are at school receiving a quality education, they can develop literacy skills, which can enable them to understand messages such as the importance of healthy eating and regular exercise to promote good health. This can help reduce the incidence of non-communicable disease, such as cardiovascular disease.

A quality education also means that people can develop skills and knowledge that enable them to obtain employment. When individuals are employed, they are more likely to be able to afford housing, **sanitation**, hygiene and health care, which can all promote good health. For pregnant women, being able to afford health care means they are more likely to have access to skilled birthing attendants. This reduces levels of maternal mortality, thus contributing to Goal 3.

CRITICAL FRIEND

Ask the person next to you to outline two examples of how achievements in SDGs 1, 2 or 4 can be linked to achievements in SDG 3.

sanitation the hygienic means of promoting health through prevention of human contact with hazardous waste (e.g. faeces)

Learning Field

Young leaders working towards the SDGs

The following UN Young Leaders for the Sustainable Development Goals have been recognised for outstanding leadership in their efforts to achieve the SDGs. They were selected from more than 18 000 nominations to work with the Office of the UN Secretary-General's Envoy on Youth, in engaging young people in achieving the Goals.



Getty Images/Michael Loccisano

Figure 10.15 Edda Hamar, the co-founder of Undress Runways

Edda Hamar, a 27-year-old from Iceland and Australia, co-founded Undress Runways, building a movement pushing for sustainability and ethics in the fashion industry without compromising style. Edda also launched The Naked Mag in 2014, advocating for diversity, respect, equality, sustainability and smart textiles in the fashion industry.

‘Our purpose is to educate consumers about sustainable fashion and to change the stigma around it,’ says Edda. As co-founder of Undress Runways, Edda has built a movement to educate and inspire people to choose ethically and sustainably produced clothing and promote sustainable consumerism, decent work and ecologically friendly fashions. ‘We are showing people that sustainability is the future, and that you don’t have to compromise your style to be ethical,’ she said.

Through Undress Runways, Edda leads a multifaceted effort to connect sustainability and fashion. The annual fashion show engages more than 50 000 people celebrating forward-thinking fashion designers from across the globe. The Naked Mag is an annually published magazine that advocates for diversity, respect and equality, and profiles the best of the industry. And ‘VIHN’ is an emerging label designed to create opportunities for mainstream garment workers to move into ethical workplaces. ‘There’s always a story behind the clothes, and we want people to choose the positive stories,’ Edda said.

23-year-old Vincent Loka of Indonesia is one of the three founding partners of WaterROAM, a social enterprise developing water filtration solutions that bring rapid access to clean drinking water in disaster-hit locations. One such solution is Fieldtrade Lite, a product that fits easily into a backpack and can filter dirty river water within minutes.

‘We are committed to bringing clean water to people everywhere,’ says Vincent, which is why he and two co-founders, all in their early twenties, launched WaterROAM – a water innovation enterprise championing the vision of a world without prolonged thirst. WaterROAM is developing water filtration solutions that bring about the quickest access to clean drinking water at disaster-hit locations, and helping to promote social change in rural areas. ‘I lead the engineering team to develop filtration systems that are simple, affordable, durable and portable,’ says Vincent. ‘We realized that these four pillars are critical when it comes to getting water solutions to the people on the ground.’ One of these solutions, otherwise known as Fieldtrade Lite, fits easily into a backpack and can filter dirty river water within minutes.

The impact has been significant. In 2015 alone, WaterROAM’s filtration systems provided drinkable water for thousands of the victims of the earthquake in Nepal, Cyclone Pam in Vanuatu and the floods in Myanmar. WaterROAM also supplies the filters to non-profit organizations that deliver them as part of their disaster-relief work. Vincent and his team are committed to continuing this work to achieve Sustainable Development Goal 6 on clean water and sanitation.

From Young Leaders Sustainable Development Goals: Meet the Young Leaders, by Office of the Secretary-General’s Envoy on Youth, ©2017 United Nations. Reprinted with the permission of the United Nations.

SDG 5: Gender equality

SDG 5: To achieve gender equality and empower all women and girls

Goal 5 aims to empower women and girls to reach their full potential, which requires all forms of discrimination and violence against women and girls, including harmful practices, to be eliminated. It seeks to ensure that they have every opportunity for sexual and reproductive health and reproductive rights; they receive due recognition for their unpaid work; they have full access to productive resources; and they enjoy equal participation with men in political, economic and public life.



What is SDG 5 seeking to achieve by 2030?

- End all forms of discrimination against all women and girls everywhere
- Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
- Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation
- Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate
- Ensure women's full and effective participation and equal opportunities for leadership at all levels of decisionmaking in political, economic and public life
- Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences
- Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
- Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
- Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

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Why is Goal 5 important?

- [Only] two thirds of countries in developing regions have achieved gender parity in primary education ...
- In sub-Saharan Africa, Oceania and Western Asia, girls still face barriers to entering both primary and secondary school
- Women in Northern Africa hold less than one in five paid jobs in the non-agricultural sector. The proportion of women in paid employment outside the agriculture sector has increased from 35 per cent in 1990 to 41 per cent in 2015 [however, this proportion remains low]
- In 46 countries, women now hold more than 30 per cent of seats in national parliament in at least one chamber [yet progress in this area is slow].

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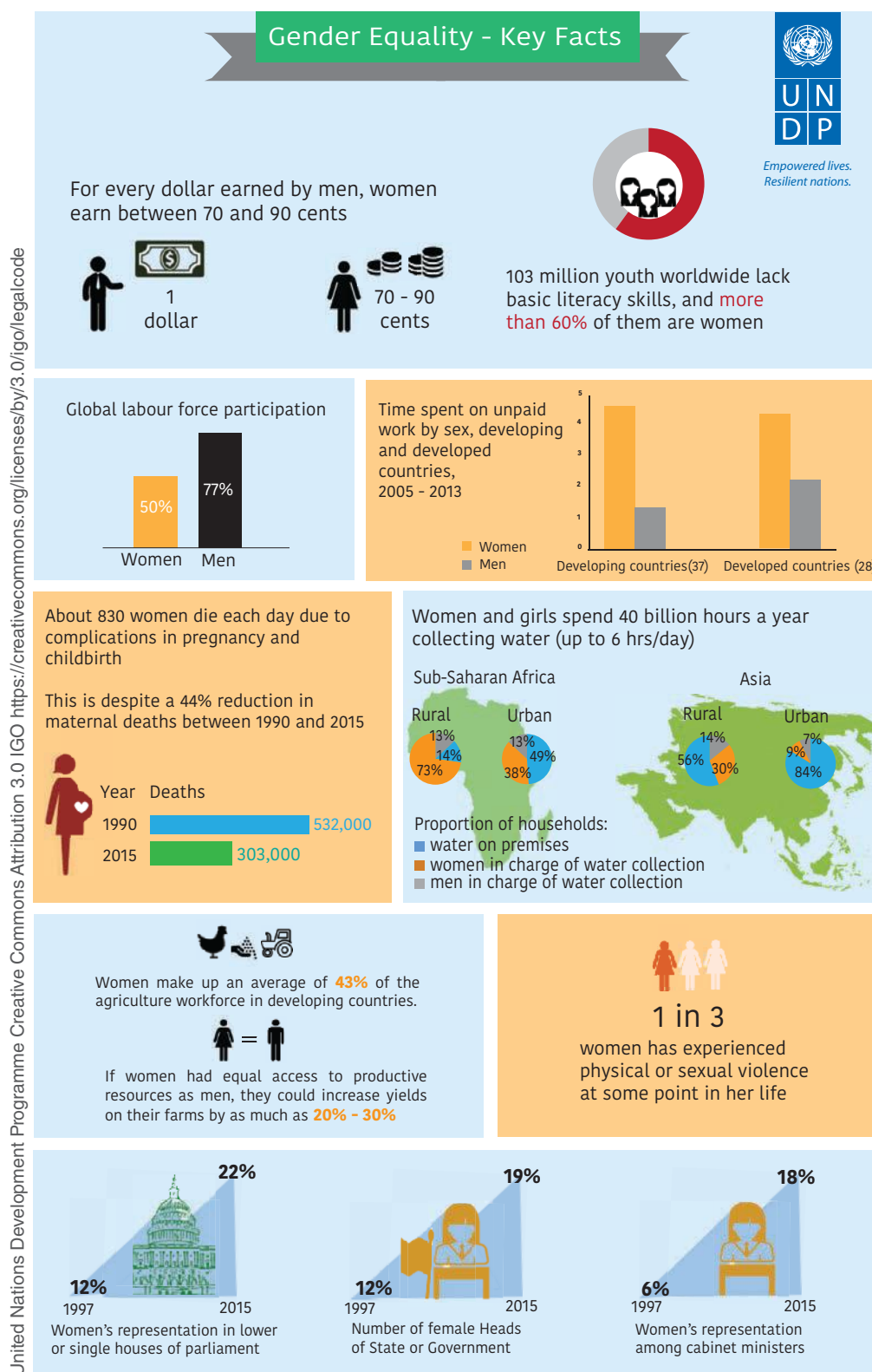


Figure 10.16 Gender equality key facts

What has been achieved so far for SDG 5?

- in Southern Asia in 1990, only 74 girls were enrolled in primary school for every 100 boys. By 2012, the enrolment ratios were the same for girls and boys
- globally, the proportion of women aged 20 to 24 who were married before their eighteenth birthday fell from 32% to 26%, between around 1990 and 2015
- the proportion of seats held by women in single or lower houses of parliament rose by 6% over a decade to 23% in 2016 (UN 2017, Overview).

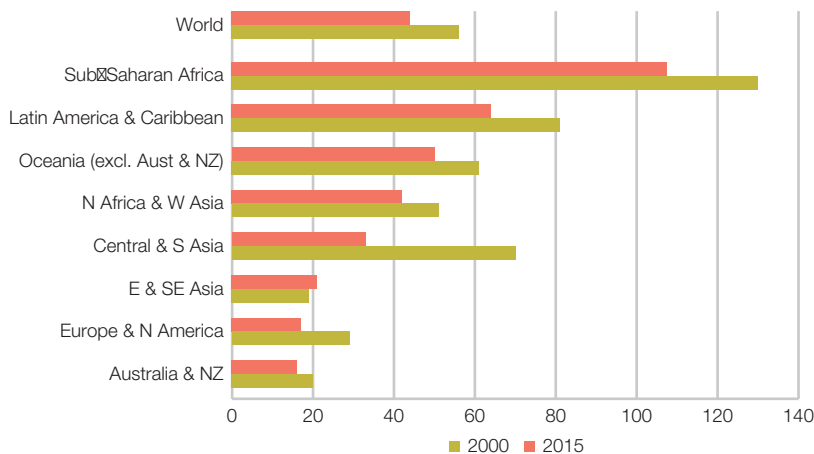


Figure 10.17 Percentage of women aged 20–24 years who were married or in a union before age 18, in 1990 and 2015 (UN 2017)

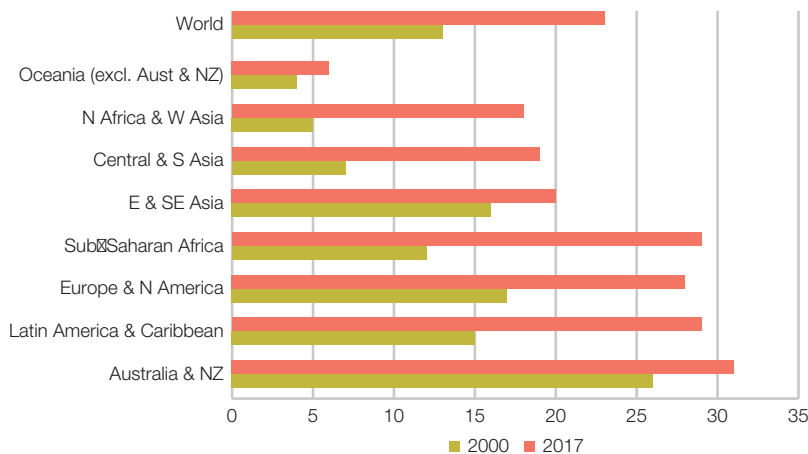


Figure 10.18 Proportion of seats held by women in single or lower houses of national parliament, 2016 (percentage), (UN 2017)

What is being done to achieve SDG 5?

- end human trafficking and sexual exploitation of women
- eliminate early and forced marriage and female genital mutilation
- increase access to sexual and reproductive health care
- increase female representation in political and leadership aspects of public life
- increase females' legal rights to ownership of property and access to finance.

How does SDG 5 promote health and wellbeing, and human development?

Health and wellbeing

- When females are provided with same opportunities as males in the workplace, this contributes to their sense of self-worth and so promotes their mental health.
- Educated girls tend to marry later, are less likely to experience sexual violence, and are more likely to protect themselves from HIV/AIDS and other diseases. This improves their overall physical health.

Human development

- Females who are able to attend school to the same levels as their male counterparts are able to access knowledge and enhance their capabilities. This allows females to participate in decisions that affect their lives.
- Educating and empowering women and girls boosts their chances of getting a job and an income, which allows a decent standard of living. They can then participate in society and the decisions that affect their lives.

How do gains in SDG 5 contribute to gains in SDG 3?

Gender equality gives women increased access to education. When women are educated, they are likely to have knowledge about the risks of participating in unsafe sex and to be empowered to say no to unsafe sex. This decreases their risk of contracting diseases such as HIV/AIDS. Gender equality also means women are likely to have more opportunities in the workplace. This improves women's self-esteem and contributes to improved mental health.

Case study

Rural nursing in Afghanistan

In a student hostel in Jalalabad, Afghanistan, something extraordinary is taking place. A young woman sits on her hostel bed, bent over a textbook. This is Abida, and she is training to be a nurse in a country where most women haven't finished primary school.

Nurses are hard to find in Abida Nowroz's home village in rural Nuristan Province in eastern Afghanistan. In this isolated region, health facilities are limited and security concerns prevent many trained healthcare professionals from working in the area. ...

This is not an uncommon story in Afghanistan, which has one of the highest maternal and child mortality rates in the world. A lack of health facilities in rural areas, combined with a scarcity of female health workers, means that many women do not receive the healthcare they desperately need.

But women like Abida are set to change this situation. Along with 200 classmates, she will graduate from nursing school this year and will go to work in some of the poorest villages in her home province. ...

Set up by the Afghan Ministry of Public Health with support from the United Nations Development Programme (UNDP) and the Global Fund to Fight AIDS, Tuberculosis and Malaria, the



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Figure 10.19 More women are studying to become nurses in Afghanistan, which will assist more women in the community to receive health care.

school is training a new generation of female healthcare workers. According to WHO, around 40 percent of health facilities in Afghanistan are without female staff, a significant problem in a country where community norms often mean that women are not allowed to receive care from male health workers. ➤



For Abida and her classmates, school is nearly over, and now it is time to start putting what they have learnt into action. 'Now we are doing on-the-job training. After this, they'll send us to our villages. Then we'll practice in the village clinics. When the school is convinced we can perform well there, we'll be given a diploma. And then we can really start work,' she said.

In addition to two years of medical training, students at the school receive accommodation, transportation, three meals a day and a nominal living allowance. While the work is hard, Abida and her classmates know that it is a unique opportunity in a country where young women often are not permitted to live or study away from home.

'My parents were very worried about how I could live away from them,' she recalls. 'But for months I fought back hard until I convinced my father to give me the green light.' Abida's older brother even left home in protest. 'He argued that as a woman I wouldn't be able to protect myself,' she says, 'and that the local insurgents would harm us if they found out.'

Despite these protests Abida has continued with her studies and is already making an invaluable contribution in her local community, as she returns home during the weekend to help give intravenous drips to sick children.

The nursing school in Jalalabad [where Abida trains] is one of six across the country that are training more than 200 nurses. ... [Eventually, many of] these new nurses will return to some of the most disadvantaged parts of Afghanistan, bringing much needed healthcare to women in the hardest to reach communities.

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Case study questions

- 1 Describe some of the barriers to females accessing health care in Afghanistan.
- 2 What obstacles did Abida overcome to study nursing?
- 3 How may Abida and her classmates improve the health status of Afghanistan?
- 4 Outline how several different Sustainable Development Goals are linked in this case study.

SDG 6: Clean water and sanitation

SDG 6: Ensure access to water and sanitation for all

Goal 6 goes beyond the provision of drinking water, sanitation and hygiene to also address the quality and sustainability of water resources. Achieving this Goal, which is critical to the survival of people and the planet, means expanding international cooperation and garnering the support of local communities in improving water and sanitation management.

What is SDG 6 seeking to achieve by 2030?

- achieve universal and equitable access to safe and affordable drinking water for all ...
- achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations ...
- improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse [of water] globally ...
- substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity ...
- implement integrated water resources management at all levels, including through transboundary cooperation as appropriate ...
- expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies



- support and strengthen the participation of local communities in improving water and sanitation management

[And, by 2020:]

- protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

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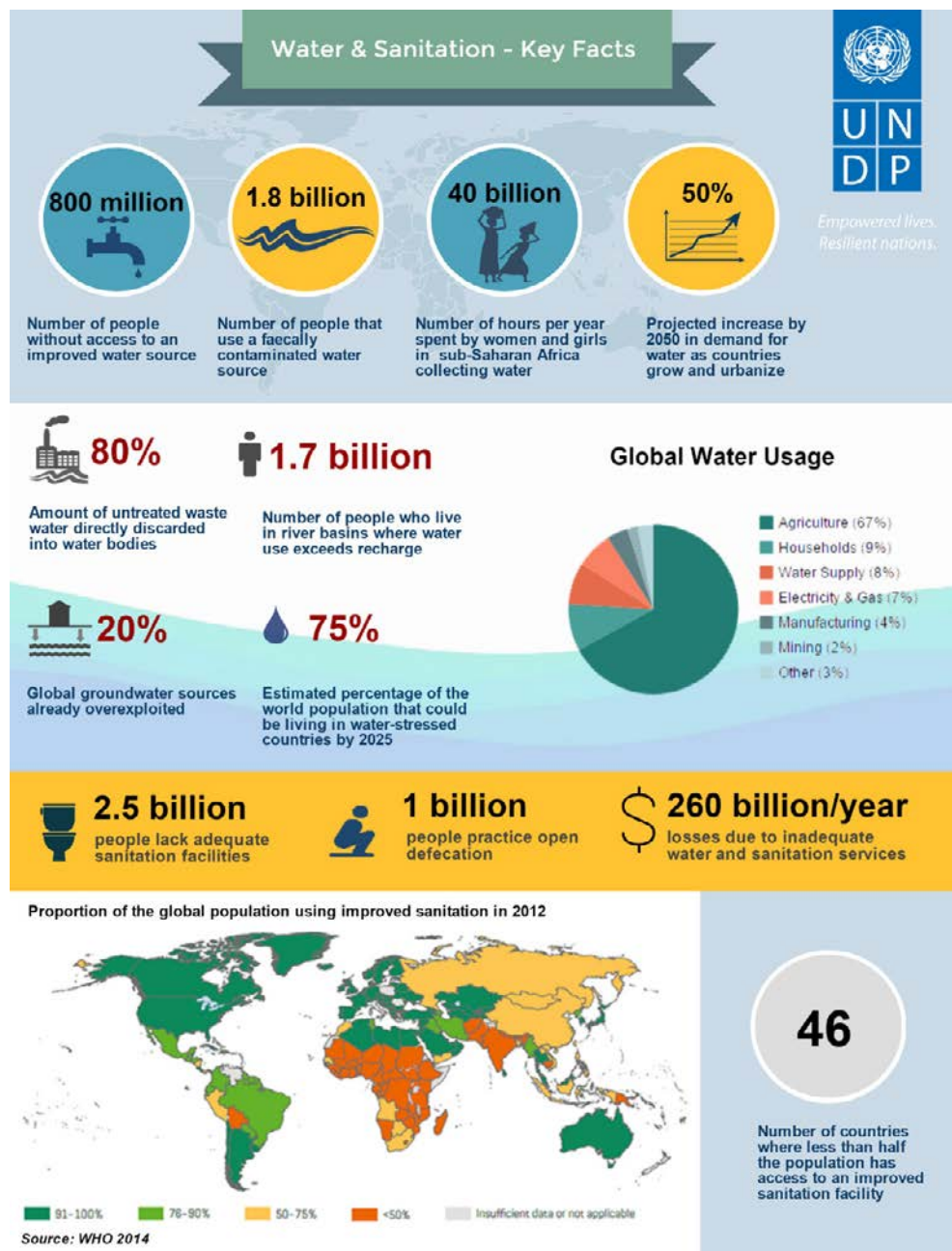


Figure 10.20 Water and sanitation: key facts

Why is SDG 6 important?

- 2.6 billion people have gained access to improved drinking water sources since 1990, but 663 million people are still without
- At least 1.8 billion people globally use a source of drinking water that is fecally contaminated ...
- [Water] scarcity affects more than 40 per cent of the global population and is projected to rise. Over 1.7 billion people are currently living in river basins where water use exceeds [replenishment rate]
- 2.4 billion people lack access to basic sanitation services, such as toilets or latrines
- More than 80 per cent of wastewater resulting from human activities is discharged into rivers or sea without any pollution removal
- Each day, nearly 1,000 children die due to preventable water and sanitation-related diarrhoeal diseases

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What has been achieved so far for SDG6?

- In 2015, 6.6 billion people, or 91 per cent of the global population, were using an improved drinking water source, compared with 82 per cent in 2000. ...
- Between 2000 and 2015, the proportion of the global population using improved sanitation facilities increased from 59 per cent to 68 per cent.

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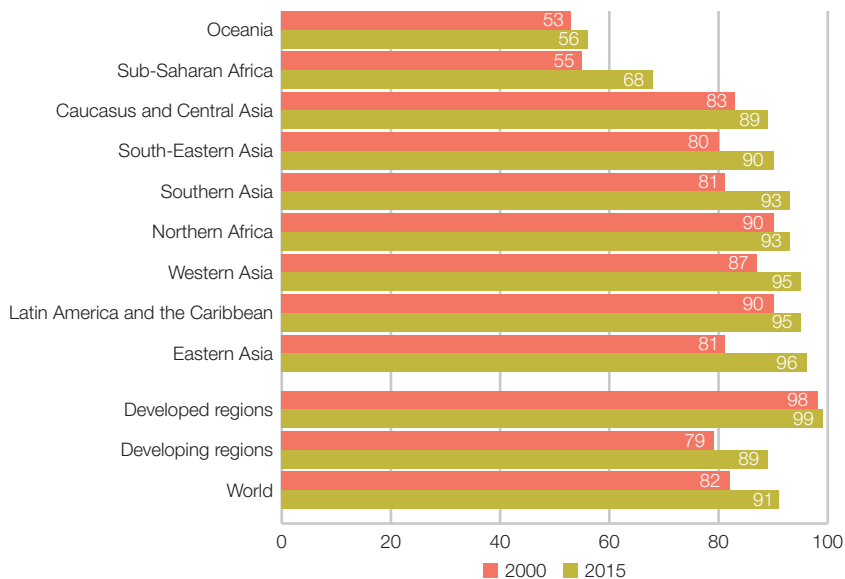


Figure 10.21 Percentage of population using improved drinking water sources, 2000 and 2015 (source: UN 2016)

What is being done to achieve SDG 6?

- increase access to safe and affordable drinking water for all
- increase access to adequate sanitation and hygiene for all
- reduce water pollution
- increase sustainable access to safe drinking water.



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Figure 10.22 Access to clean water lowers the likelihood that children will contract waterborne diseases, and allows them to attend school more regularly.

How does SDG 6 promote health and wellbeing, and human development?

Health and wellbeing

- Access to clean water and sanitation means that children are less likely to contract waterborne diseases such as cholera and typhoid, increasing the likelihood they are well enough to attend school and develop friendships. This can promote their social health.
- For females attending school or work, having access to sanitation facilities that are separate from those for males can reduce stress levels, and this promotes their mental health.

CRITICAL FRIEND

With the person next to you in class, each review the rationale and objectives of the SDGs. Critique each other's responses, referring back to the rationale and objectives at the beginning of this chapter if you need to.

Human development

- For females, having access to sanitation facilities that are separate from those for males means they are more likely to attend school or work, which enables them to enhance their capabilities and develop to their full potential.
- Access to clean water and sanitation makes people more likely to achieve a decent standard of living and less likely to become unwell from waterborne diseases such as cholera.

How do gains in SDG 6 contribute to gains in SDG 3?

Increased access to safe drinking water means that people are less likely to contract waterborne diseases such as diarrhoeal disease, cholera and typhoid, which decreases mortality and morbidity from these conditions. Improved access to sanitation facilities for females at school means they are more likely to attend. A higher level of education and literacy contributes to improved knowledge regarding health-promoting behaviours, such as leaving adequate time between the births of multiple children for the body to recover, which may contribute to SDG 3 by reducing levels of maternal mortality.

SDG 13: Climate action

SDG 13: Take urgent action to tackle climate change and its impacts

Climate change presents the single biggest threat to development, and its widespread, unprecedented effects impose a disproportionate burden on the poorest and the most vulnerable. Urgent action is needed, not only to combat climate change and its impacts, but also to build resilience in responding to climate-related hazards and natural disasters.





image folk/Adnan

Figure 10.23 Climate change affects people who are poor and vulnerable more than anyone else in the world.

What is SDG 13 seeking to achieve by 2030?

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
- Integrate climate change measures into national policies, strategies and planning
- Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
- Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change
- Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

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Why is SDG 13 important?

- 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.
- [Since the 1900s,] oceans have warmed, the amounts of snow and ice have diminished and sea level has risen. From 1901 to 2010, the global average sea level rose by 19 cm as oceans expanded due to [Arctic ice melting as a result of global warming]. The Arctic's sea ice [level] has shrunk in every successive decade since 1979, with 1.07 million km² of ice loss every decade ...

- Global emissions of carbon dioxide (CO₂) have increased by almost 50 per cent since 1990
- Emissions grew more quickly between 2000 and 2010 than in each of the three previous decades
- It is still possible, using a wide array of technological measures and changes in behaviour, to limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels

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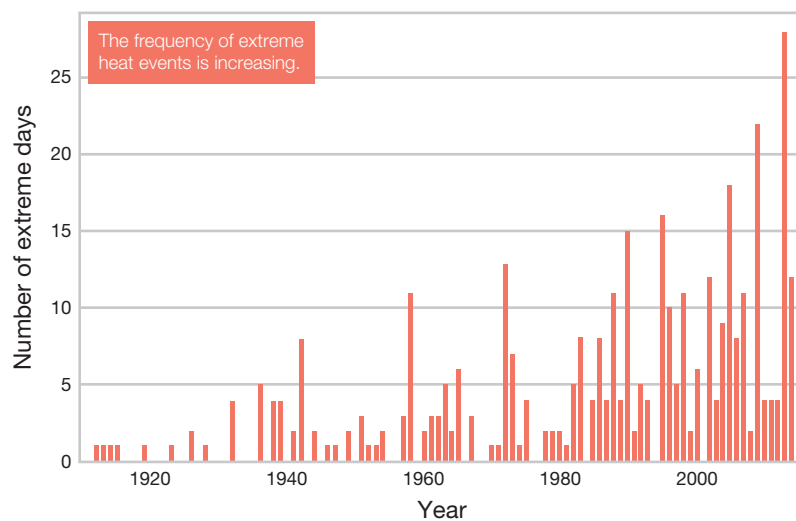


Figure 10.24 Average number of extreme hot days per year in Australia from 1900 to 2020 (source: CSIRO 2016)

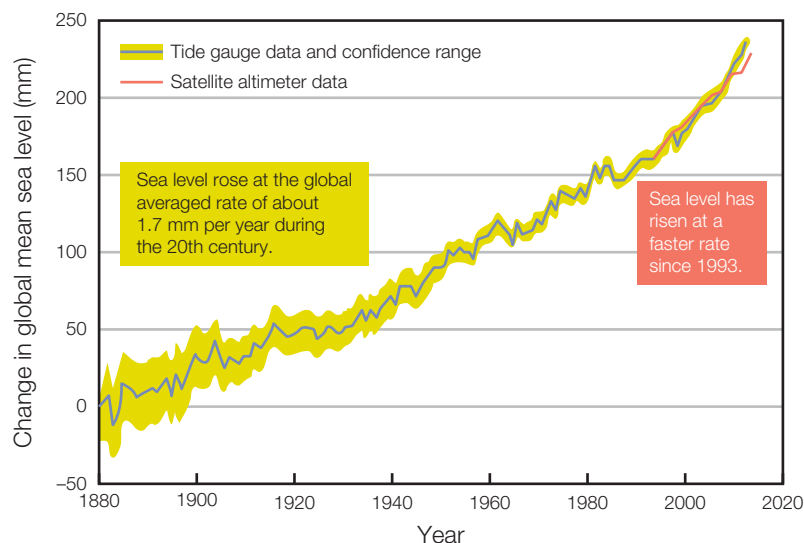


Figure 10.25 The rise in global sea levels relative to 1880 levels (source: CSIRO 2016)

What has been achieved so far for SDG 13?

In April 2016, 175 [UN] Member States signed the historic Paris Agreement, which sets the stage for ambitious climate action by all [member nations] to ensure that global temperatures rise no more than 2 degrees Celsius.

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What is being done to achieve SDG 13?

- improving the ability of countries to respond to climate-related natural disasters
- increasing education about the contributing factors to climate change
- altering the policies of countries to respond to changes as a result of **global warming**.

global warming the increase in Earth's average surface temperature due to the increased effect of greenhouse gases, which trap heat that would otherwise escape from Earth's atmosphere

How does SDG 13 promote health and wellbeing, and human development?

Health and wellbeing

- A reduction in the rise of global temperatures may reduce the incidence and severity of extreme weather events, such as hurricanes and extreme droughts. This will reduce the extent of injury and disease from such events and therefore promote physical health.
- Halting the rise in global temperatures may halt the rise in sea levels. This may reduce levels of stress and concern for people living close to the ocean and promote their mental health.

Human development

- Taking action on climate is something that individuals can do, and this allows people to participate in decisions that affect their lives. People can choose to participate in behaviours that reduce climate change, such as using low-emission transport (e.g. riding a bike).
- Combating climate change and rising sea levels will allow people who live in coastal areas to continue using coastal land to farm and earn an income. This enables these people to continue a decent standard of living and to contribute to their community.



Weblink

INVESTIGATE

Visit the United Nations UNstats website and go to the SDGs home page. Then click on the 'Reports' tab to access the latest SDG report. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

How do gains in SDG 13 contribute to gains in SDG 3?

Improvements in how countries respond to climate-related natural disasters may help reduce the spread of diseases such as cholera and diarrhoeal disease, as outbreaks of these diseases tend to follow disasters. Reducing such outbreaks will help lower morbidity from these conditions. A reduction in natural disasters related to climate change would in turn reduce levels of injury and death associated with such events. This would improve life expectancy and lower injury-related mortality, and thus contribute to improvements in SDG 3.

CRITICAL FRIEND

Ask the person next to you to give two examples of how achievements in SDG 5, 6 or 13 can be linked to achievements in SDG 3.

Case study

Bhutan and the changing environment

A changing environment

Perched in the Himalayas at an average elevation of 2220 m, Bhutan (the fourth-highest country in the world), is particularly vulnerable to health risks posed by changes in its climate. Dengue fever, never detected in Bhutan until 2004, is now endemic during the monsoon period. Diarrhoeal diseases are responsible for as much as 15% of Bhutan's annual morbidity. Glacial lake outburst floods have claimed scores of lives and destroyed multiple villages since the 1950s.

High altitude ecosystems, such as Bhutan's, face special climate change-related hazards. A growing body of evidence suggests that elevation amplifies the rate of warming, with serious consequences for health: shrinking glaciers and water reservoirs; expansions to the range of mosquitoes and sandflies, and attendant increases in diseases such as malaria, dengue, and visceral leishmaniasis; more frequent flash floods and landslides; and a higher incidence of water-borne illnesses.



iStock.com/KitedArab

Figure 10.26 Thimphu, Bhutan's capital city

Adapting to protect public health

Despite the susceptibility of Bhutan's public health to climate change, the country has worked hard to strengthen its capacity to adapt to climate change. An important innovation of the Bhutanese initiative is linking climate data with epidemiological surveillance.

At six combined health/meteorological centres throughout Bhutan, cases of diarrhoea, acute respiratory infections, malaria, dengue, visceral leishmaniasis, and Japanese encephalitis are monitored and recorded, and linked with climate data and insect counts.

The result is a national health system with more data on the relationship between meteorological variables and public

health, greater resilience to climate change, and more advance warning for climate sensitive diseases.

Change is in the water

The data initiative is complemented with water projects employing sustainable techniques. Through Bhutan's Public Health Engineering Division, more than 100 composting toilets have been constructed and installed. These toilets require no water to operate, reducing demand on dwindling water supplies. They also serve to prevent human waste from making its way into water supplies, reducing diarrhoeal diseases by more than a third – significant in a country where nearly 20 000 children under five with diarrhoeal illnesses are treated annually.

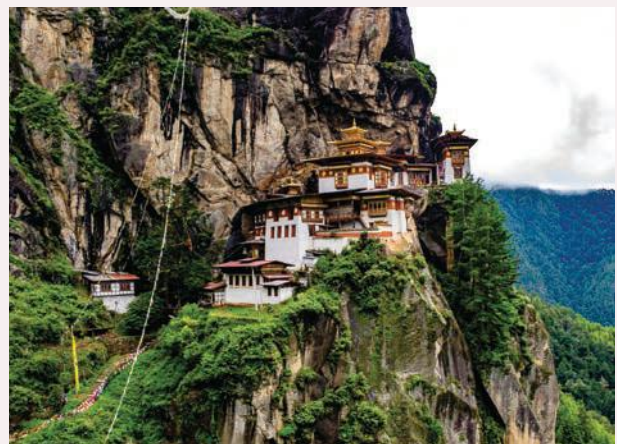
Other sustainable water practices include efforts to harvest and store rainfall more effectively; revive spring sources through water catchment development; and implement the practice of greywater management – showing the confluence of sustainable development, climate change adaptation, and public health.

Driving climate change issues to the foreground

Bhutan's government, with support from WHO and UNDP, is endeavouring to harness the lessons learnt in order to mainstream climate change issues into government policies, strategies, and plans, and to develop action plans for climate change adaptation.

For example, Bhutan's response to climate change included the development of a Water Safety Plan (WSP) – a comprehensive approach to risk assessment and management that includes all steps in the water supply from catchment to consumer. The WSP is being implemented nationwide and is expected to improve the safety of drinking water supplies in the country.

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iStock.com/MC_Noppadol

Figure 10.27 A monastery in Bhutan



Case study questions

- 1 Name five conditions that Bhutan is concerned about due to changes in climate.
- 2 Give examples of how Bhutan is attempting to manage the effects of climate change on health.
- 3 List the three SDGs that can be linked to this case study, and give examples of why you chose each goal.
- 4 Outline how human development may be affected by the changes in climate that are occurring in Bhutan.

Review and reflect

- 1 Name SDGs 4, 5, 6 and 13.
- 2 Explain why SDG 6 is important.
- 3 Explain how achievements in SDG 5 can be linked to achievements in SDG 3.
- 4 Outline how achievements in SDG 4 can promote health and wellbeing.

CRITICAL FRIEND

Ask the person next to you to outline two examples of social action that could be taken to promote health and wellbeing. You then have to choose which would be most effective and justify your choice.

Collaboration between the health sector and other sectors

Two joint programs that are based on collaboration between sectors in meeting the SDGs are described below. The first is the World Food Program in Sri Lanka, Scaling Up Nutrition Through a Multi-sector Approach, which aims to improve the health and nutrition of its population. The second program is Pro-water, which aims to improve access to clean water and sanitation facilities in the Philippines.

World Food Program: Scaling Up Nutrition in Sri Lanka

Sri Lanka made [significant] achievements in improving the health and nutritional status of its population between the 1970s and 2000. ... However, nutrition achievements have lagged behind in the last decade with the country currently experiencing high levels of under nutrition Following a rapid decline in stunting prevalence to the year 2000, there has been stagnation since then. In rural Sri Lanka, where 80 per cent of the total population lives, stunting rates are now moderately high compared to other indicators of development. ...

Causes of high malnutrition rates are attributed to Sri Lanka's high food and fuel prices that reduce household's access to food. Disasters have increased in scale, frequency and severity, resulting in a surge in the number of deaths, affected people and damage to the country. ...

Food security assessments conducted by the [World Food Programme (WFP)] jointly with the government of Sri Lanka (GoSL) has found that the food security situation among the war-affected communities has improved significantly from year 2010 to 2012. However, the most recent comprehensive food security and vulnerability assessment ... undertaken by WFP and GoSL in April 2012, determined that 1.3 million persons in the Northern and Eastern Provinces were ... food insecure. Two out of five households are food insecure, and food insecurity was particularly rife among socially vulnerable groups, such as female-headed households, the disabled, recent returnees

Partners involved in the program

- World Food Programme (WFP)
- Food and Agriculture Organisation (FAO)
- United Nations Children's Fund (UNICEF)
- Sri Lankan Ministry of Health
- Save the Children

SDGs addressed by the program

- SDG 2: Zero hunger
- SDG 3: Good health and wellbeing



Figure 10.28 Children in Sri Lanka are a focus of this nutrition program.

The WFP is conducting surveys and pilot studies of fortified rice, fortified salt and micronutrient powders to identify the viability of government initiatives. The FAO is changing behaviour and attitudes by concentrating on nutrition education for schoolchildren, training teachers, revising curricula, improving guidelines and increasing the capacity of schools to address nutrition levels.

Strategies used in the program include:

- fortifying in-country produced products with the correct micronutrients, to address deficiencies
- improving access to and availability of improved nutritional products for specific targeted groups, including children
- policy advocacy and increased discussions on:
 - alleviating poverty
 - improving social safety net programs
 - fortifying food products.

The beneficiaries of the program include children aged under 5 years, pre-school aged children, schoolchildren aged 6–14, pregnant and lactating women, teachers, school communities and educators.

and populations located in areas with few employment opportunities and under-developed economic infrastructure. ...

Given the causes of under nutrition are complex and multi-faceted, ... the GoSL has recognized that a multi-sector approach is required to reduce child under nutrition in an effective and sustained manner.

Extract from Sustainable Development Goals Fund, 'Sri Lanka: scaling up nutrition through a multi-sector approach', pp.4–5, <http://www.sdgfund.org/sites/default/files/SDG%20Fund%20-%20Sri%20Lanka%20-%20SCALING%20UP%20NUTRITION%20THROUGH%20A%20MULTI-SECTOR%20APPROACH%20-%202016-11-20.pdf>

What the program involves

The joint program allows the WFP and the Food and Agriculture Organisation (FAO) to provide technical and programmatic support to key ministries such as the Sri Lankan Ministry of Health.

Pro-Water: promoting water and sanitation access, integrity, empowerment, rights and resiliency

It is ironic that the Philippines – a nation of islands surrounded by water – is now suffering from water scarcity. In 2011, the proportion of families with access to safe water supply was at 84.4 percent but according to the Philippine Water Supply Sector Roadmap, trends show that overall access of the population to water supply services

and sanitation facilities has declined, along with the ability of water service providers to expand their services.

Water scarcity impacts on sanitation and hygiene and can degrade water quality. This is evidenced by the [Philippines Department of Health] finding that diarrhea and other water borne diseases are among the leading causes of mortality with an incidence rate of 1,967 for every 100,000 Filipinos. The rapid decline of the quality of water resources due to pollution, poor sanitation and the alarming number of Filipinos who still have to resort to open defecation at this day and age is cause for urgent attention. About one quarter of the population is still not served with individual sanitary types of sanitation facilities. ... This means that every single day probably 10 million Filipinos still defecate in the open, and this has serious consequences to health, human development and dignity ...

Conflict is another major barrier to access safe water, sanitation and hygiene. In times of conflict, water fetching, especially by women and girls, put them at risk of cross fires, violence and even rape. Practicing sanitation and hygiene become more difficult because safety is compromised. Water service providers are closed down because workers, staff and employees' lives become at risk. The conditions of safe water, sanitation and hygiene in evacuation centres are too often unacceptable. The breakout of diarrhea among women and children in an evacuation centre during the siege in Zamboanga City in 2012 is just one of the numerous incidences.

Extract from Sustainable Development Goals Fund, 'Pro-Water: Promoting water and sanitation access, integrity, empowerment, rights and resiliency,' pages 5-6, http://www.sdgfund.org/sites/default/files/SDG%20Fund%20-%20Philippines%20-%20PRO-WATER_%20Promoting%20Water%20and%20Sanitation%20Access%2C%20Integrity%2C%20Empowerment%2C%20Rights%20and%20Resiliency%20-%202016-11-20.pdf



image folk/Environmental Images

Figure 10.29 Many people in the Philippines lack access to clean water and sanitation facilities.

What the program involves

This joint program involves:

- implementing safe water, sanitation and hygiene in households, schools, health centres and public spaces
- improving governance of safe water, sanitation, and hygiene at all levels, especially local
- addressing gender equality and women empowerment issues, as women are rarely considered for employment in water supply construction projects. To this extent the program will involve:
 - women participating equally with men in designing and implementing projects based on safe water, sanitation and hygiene at the local level
 - constructing safe water supply facilities that will benefit women and men equally
 - allocating at least 5% of local government units' budgets for safe water, sanitation and hygiene to gender equality actions
 - improving quality of health care in health centres, ensuring that health centres have reliable access to water to sterilise equipment, provide hand-washing facilities for staff and treat patients appropriately, especially children and pregnant women.

SDGs addressed by the program

- SDG 3: Good health and wellbeing
- SDG 5: Gender equality
- SDG 6: Clean water and sanitation

Partners involved in the program

- United Nations Development Program (UNDP)
- United Nations Children's Fund (UNICEF)
- World Health Organisation (WHO)
- UN WOMEN
- Philippines Department of the Interior and Local Government
- Philippines Department of Health
- Philippines National Water Resources Board
- Philippine Commission on Women

Chapter summary

- In 2015 the UN established its 2030 Agenda for Sustainable Development. At the core of this plan are 17 goals, referred to as Sustainable Development Goals (SDGs).
- The SDGs have three main *objectives*: to end extreme poverty, to fight inequality and injustice, and to tackle climate change.
- For the sake of the HHD 3&4 course, not all 17 SDGs need to be learnt in detail; the following are the focus:
 - SDG 1 – No poverty** (End poverty in all its forms everywhere)
 - SDG 2 – Zero hunger** (End hunger, achieve food security and improved nutrition, and promote sustainable agriculture)
 - SDG 3 – Good health and wellbeing** (Ensure healthy lives and promote well-being for all at all ages)
 - SDG 4 – Quality education** (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all)
 - SDG 5 – Gender equality** (Achieve gender equality and empower all women and girls)
 - SDG 6 – Clean water and sanitation** (Ensure availability and sustainable management of water and sanitation for all)
 - SDG 13 – Climate action** (Take urgent action to combat climate change and its impacts)
- **SDG 1** calls for an end to poverty, including extreme poverty, over the next 15 years. All people everywhere should enjoy a basic standard of living and social protection benefits.
- **SDG 2** seeks to end hunger and all forms of malnutrition and to achieve sustainable food production by 2030.
- **SDG 3** aims to ensure health and wellbeing for all at all ages by: improving reproductive, maternal and child health; ending the epidemics of major communicable diseases; reducing non-communicable and environmental diseases; achieving universal health coverage; and ensuring access to safe, affordable and effective medicines and vaccines for all.
- **SDG 4** focuses on both girls and boys having equal access to education at all levels including, primary, secondary and tertiary.
- **SDG 5** aims to empower women and girls to reach their full potential, which requires eliminating all forms of discrimination and violence against them, including harmful practices.
- **SDG 6** goes beyond the provision of drinking water, sanitation and hygiene to also address the quality and sustainability of water resources.
- **SDG 13** is about taking climate action. Climate change presents the single biggest threat to development, and its widespread, unprecedented effects disproportionately burden the poorest and the most vulnerable.

Exam-style questions with sample answers

- 1 List and describe SDG 6. **(2 marks)**

Sample answer: SDG 6 – Clean water and sanitation (1 mark). Seeks to ensure that all people have access to clean drinking water and sanitation, and hygiene facilities. It also seeks to address the quality and sustainability of water resources (1 mark).

- 2 Explain why SDG 4 is important. **(2 marks)**

Sample answer: SDG 4, Quality education, is important because millions of children across the globe are still not enrolled in and attending school (1 mark). In addition to this, millions of people around the globe lack basic literacy skills, which impedes their ability to achieve optimal levels of human development (1 mark).

- 3 Outline how the work being done to achieve SDG 3 can promote human development. **(3 marks)**

Sample answer: When females are able to access sexual and reproductive health care services (1 mark), they are more likely to access knowledge that promotes their own health and the health of their baby, leading to safer pregnancies and childbirth (1 mark). These services can also provide women with information that allows them to participate in decisions affecting their lives, such as the appropriate period of time between births (1 mark).

Questions for you to practise

- 1 List SDG 13 and explain why this goal is important. **(3 marks)**

- 2 Outline how achievements in SDG 5 may be linked to achievements in SDG 3. **(3 marks)**

- 3 List the three major objectives for the SDGs, and name an SDG that is directly related to each objective. **(6 marks)**

- 4 Provide an example of how two sectors can work together to achieve SDG 13. **(2 marks)**

Chapter 11: The WHO and Australian aid

Key knowledge

- 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

Key skills

- explain the priorities and the work of WHO and discuss how the WHO priorities are reflected in different scenarios
- describe and justify different types of aid

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Key terms

- aid
- bilateral aid
- communicable diseases
- emergency aid
- gender equality
- International Health Regulations
- multilateral aid
- non-communicable disease (NCD)
- World Health Organization (WHO)

In this chapter

Priorities and work of the World Health Organization.....	page 318
Health-related Sustainable Development Goals	page 319
Non-communicable diseases	page 320
International Health Regulations.....	page 323
Universal health coverage	page 324
Increasing access to medical products.....	page 326
Social, economic and environmental determinants.....	page 328
Types of aid	page 330
Emergency aid.....	page 330
Multilateral aid.....	page 331
Bilateral aid	page 334

Australia's aid program	page 335
What kind of aid does Australia provide?	page 337
Australian aid priorities.....	page 338
Building resilience: humanitarian assistance, disaster risk reduction and social protection	page 340
Effective governance; policies, institutions and functioning economies.....	page 341
Gender equality and empowering women and girls.....	page 342
Agriculture, fisheries and water	page 343
Education and health	page 345
Infrastructure, trade facilitation and competitiveness.....	page 347
Australian aid partnerships	page 349

World Health Organization (WHO) the directing and coordinating authority for health within the United Nations system; WHO is responsible for providing leadership on global health matters.

Priorities and work of the World Health Organization

The **World Health Organization (WHO)** is the health branch of the United Nations. WHO was established on 7 April 1948, a day now celebrated annually as World Health Day. The goal of WHO is to build a better, healthier future for people all over the world. WHO has offices in over 150 countries, where it works with governments and partners to achieve the highest attainable level of health for all people.

The work of WHO is guided by its leadership priorities. These priorities were released in 2014 and are the areas where WHO believes its advocacy and technical leadership are most required. WHO seeks to engage countries around the globe in work aligned with the priorities, to promote health and wellbeing.



Figure 11.1 WHO leadership priorities (WHO 2017f)

There are six priorities:

- **H**Health-related Sustainable Development Goals
- **I**International Health Regulations
- **S**ocial, economic and environmental determinants
- **U**niversal health coverage
- **N**on-communicable diseases
- **I**ncreasing access to medical products.

Learning tip

Use the acronym 'HISUNI' to help you recall each priority.

Health-related Sustainable Development Goals

Before the establishment of the 17 Sustainable Development Goals (SDGs), the world was working towards achieving eight Millennium Development Goals (MDGs). The MDGs were time-bound, and from 2015 were replaced with the SDGs. Three of the MDGs had a specific health focus:

Goal 4: Reduce child mortality

Goal 5: Improve maternal health

Goal 6: Combat HIV/AIDS, malaria and other diseases.

Although most of the MDGs were not fully achieved, substantial progress was made in many areas, such as reducing child and maternal mortality, improving nutrition, reducing morbidity and mortality due to HIV infection, tuberculosis and malaria, and increasing access to safe water and sanitation.

Although the MDG initiative has concluded, this WHO priority seeks to improve on the gains so far to ensure that there is more equitable achievement across countries and populations in health-related goals. The work in this priority is now aligned with the work of SDG 3: Good health and wellbeing, and includes completing the eradication of poliomyelitis and selected neglected tropical diseases, as well as continued actions to reduce the burden from malaria, tuberculosis and HIV/AIDS around the world.



Weblink

INVESTIGATION

To learn more about the MDGs, go to the Millennium Project website. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink



Getty Images/Liba Taylor

Figure 11.2 WHO's work includes reducing maternal and child mortality.

Other actions include:

- developing strategies that countries can implement to address the focus areas of the health-related goals
- working with countries to ensure that health policies and programs are developed that can assist in achieving the focus areas of the goals
- working with the private sector and not-for-profit organisations to carry out the work of global health initiatives such as the Global Fund to Fight AIDS, Tuberculosis and Malaria
- working with countries in other priority areas that address health-related focuses of the goals, such as universal health coverage and increasing access to medical products.

How could WHO's work on the health-related SDGs promote health and wellbeing, and human development?

Work in SDG 3 includes the eradication of diseases such as poliomyelitis. When **communicable diseases** such as polio are eradicated, people are more likely to have strong, functioning bodies, which is positive for their physical health. When people are physically healthy they are better able to attend work and school, where they can contribute to the life of their community and develop to their full potential.

communicable diseases

diseases or illnesses caused by infectious organisms or their toxic products; transmission of the disease may occur directly or indirectly through contact with other humans, animals or other environments that harbour the organism

non-communicable disease (NCD)

a disease that is not contagious and cannot be spread from one person to another, such as cardiovascular disease or cancer

Non-communicable diseases

Non-communicable diseases (NCDs), also often referred to as chronic diseases, cannot be passed from person to person. Conditions that fall into this category and are the main focus of this priority are cardiovascular disease, cancers, chronic lung disease and diabetes. Conditions such as these are on the rise throughout the world. WHO estimates that NCDs kill approximately 38 million people per year and that nearly three-quarters of these deaths occur in low- and middle-income countries. In some of these countries, deaths from non-communicable diseases are surpassing those from communicable diseases. As part of the focus of this priority, WHO is seeking to address the major risk factors for cardiovascular disease, cancers, chronic lung disease and diabetes: tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. In addition to the four major diseases, this priority also focuses on other non-communicable diseases such as mental health, violence and injuries, and disabilities.

WHO recognises that poverty is closely linked with NCDs. It is predicted that the rapid rise in NCDs will impede poverty reduction initiatives in low-income countries, particularly by increasing household costs associated with health care. Treating conditions such as cardiovascular diseases, cancers, diabetes and chronic lung diseases is often expensive and can be difficult for low-income populations to meet. The cost of treatment, as well as the potential inability to work when suffering from NCDs, means many people are forced into poverty as a result of these conditions, making development difficult to achieve. While harmful drinking and unhealthy diet and lifestyles occur in both high- and low-income populations, high-income groups are more likely to be able to afford and access the health care required to reduce the impact of NCDs than low-income groups.

Because NCDs have many interrelated causes, addressing these diseases requires input from more than the health sector alone. NCDs are caused by interconnected factors, such as environmental exposure to harmful toxins, dietary behaviours, tobacco use and sedentary lifestyle/ inadequate physical activity. These factors are related to income, housing, employment, transport, and agricultural and education policies, which themselves are influenced by patterns of international commerce, trade, finance, advertising, culture and communications. Therefore, coordinating a successful plan to address NCDs in a range of societies is a significant challenge. It is a leadership priority for WHO, which recognises that coordinated, multisectoral action at the global, national and local levels is essential.



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Figure 11.3 A young boy with access to tobacco in a low-income country

Examples of WHO's work

- developing the Global Action Plan for the Prevention and Control of NCDs 2013–2020, to assist countries to focus their efforts
- providing frameworks, such as the Framework Convention on Tobacco Control, that countries can use
- creates a range of policies that countries can adopt to decrease the impact of non-communicable diseases in their country
- works with member states to assist them to develop their capacity to gather data and evaluate their response to the impact of non-communicable diseases.

How could WHO's work on NCDs promote health and wellbeing, and human development?

A reduction in non-communicable diseases, such as obesity and associated diabetes, may reduce the number of people who suffer from low self-esteem brought on by poor body image. This may contribute to improved levels of mental health for people, leading to greater participation in the community and interaction with others. When people are participating in the life of their community they are able to enhance their capabilities and this contributes to higher levels of human development.



Weblink

INVESTIGATE

For key facts about non-communicable diseases, go to the WHO Media Centre. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

Case study

We can, I can

The Pan American Health Organization (PAHO), founded in 1902, is the oldest international public health organisation in the world. It works with its member countries to improve the health and quality of life of the people of the Americas. As the Regional Office for the Americas of WHO, it is part of the United Nations system. It is also a member of the inter-American system.

With the slogan 'We can, I can,' the PAHO is joining the international community to commemorate World Cancer Day (February 4) by urging the implementation of public policies that could prevent more than one-third of cancers.

Cancer is the second-leading cause of death in the Americas, where an estimated 2.8 million people are newly diagnosed and 1.3 million people die from this group of diseases each year. The leading cancer types in the region in men are lung, prostate and colorectal cancer, and in women, breast, lung and cervical cancer. If no further action is taken, cancer is projected to result in over 4 million new cases and 1.9 million deaths by 2025, driven in part by the aging population and changing lifestyles.

Experts say, however, that more than one-third of cancers could be prevented by reducing risk factors for cancer and other noncommunicable diseases, particularly smoking, overweight and obesity, physical inactivity, unhealthy diet, and harmful use of alcohol.

'To address cancer and save lives, we must strengthen policies and services that effectively prevent and detect cancer in its early stages, and also increase access to treatment and improve cancer patients' quality of life,' said Silvana Luciani, PAHO's regional adviser on cancer.

Strategies proposed by PAHO/WHO to reduce the risk of cancer and other noncommunicable diseases include:

- Increasing taxes, restricting access, and warning about the dangers of tobacco and harmful use of alcohol
- Promoting public awareness about healthy diet, physical activity and healthy weight
- Immunizing infants against hepatitis B to prevent liver cancer, and immunizing girls against human papilloma virus to prevent cervical cancer
- Organizing screening programs for cervical cancer and breast cancer to detect them at early stages, when they are more amenable to treatment

'We can, I can'

The goal of World Cancer Day, which is supported by the Union for International Cancer Control (UICC), is to demonstrate how all people, both collectively and individually, can contribute to reducing the cancer burden.

Individually, people can:

- Talk to their doctor about their risk of cancer and how to reduce it
- Participate in cancer screening and early detection programs
- Adopt healthy lifestyles to reduce cancer risks
- Advocate for better access to cancer screening and treatment services
- If they or a loved one has had cancer, share their experiences with others
- Support people living with cancer
- Understand that early detection and early treatment save lives.

Collectively, we can:

- Prevent cancer
- Detect cancer early and improve treatment results
- Create health-promoting public policies to reduce cancer risk factors
- Ensure palliative care policies and access to pain medications
- Improve access to cancer care and cancer treatments
- Demonstrate the need to invest in cancer detection, treatment and research
- Better understand the causes and risk factors of cancer and how to prevent it
- Train health professionals to join the fight against cancer
- Educate and inform the public about cancer.

PAHO is working with countries in the Americas to reduce premature deaths from non-communicable diseases (NCDs), including cancer, by 25% by the year 2025.

Extract from Pan American Health Organization and WHO, n/d, 'PAHO urges governments to implement policies that can prevent more than one-third of cancers', http://www.paho.org/hq/index.php?option=com_content&view=article&id=11632&Itemid=1926&lang=en

Case study questions

- 1 Name the WHO priority that the case study above is most closely aligned with.
- 2 Give two examples of how individuals could take action and how this may help contribute to the WHO priority you identified in Question 1.
- 3 Give two examples of how governments could take action and how this may help contribute to the WHO priority you identified in Question 1.
- 4 Provide an example from the case study of the proposed work of the PAHO/WHO, and explain how this work could contribute to:
 - a improved health and wellbeing
 - b improved human development.

International Health Regulations

The **International Health Regulations (IHR)** are an international legal tool implemented on 15 June 2007 that seek to provide countries with assistance to work together to save lives and livelihoods that are vulnerable to the spread of diseases and other health risks. In accordance with the IHR, which are binding for 196 countries around the world, countries must report certain disease outbreaks and public health events to WHO. The IHR are an important legal tool to achieve collective global health security.

The aim of the IHR is to prevent, protect against, control and respond to the international spread of disease without obstructing international traffic and trade. The IHR are also critical for preventing the spread of disease at international airports, ports and ground crossings. In accordance with the IHR, countries must notify WHO of events that may represent a public health emergency of international concern and verify information about these events. This ensures that WHO can provide the required technical collaboration for effective prevention of emergencies or containment of outbreaks and notify other countries that may be affected by the public health risk and may need to take action.

By agreeing to be bound by the IHR (2005), [countries]:

- enjoy the benefits of a respected partner in the international effort to maintain global health security;
- receive WHO guidance in building the core capacities necessary to quickly detect, report, assess and respond to public health emergencies and public health risks, including those of national and international concern;
- are offered technical assistance and receive help in efforts to mobilize possible funding support to meet these new obligations;
- receive WHO guidance during outbreak assessment and response;

International Health Regulations (IHR) legally binding health regulations that provide countries with a set of rules to follow in the event of a disease outbreak



Getty Images/VCG

Figure 11.4 Health workers taking precautions to prevent the spread of disease

- have access to specific information gathered by WHO about public health risks world-wide which is necessary for them to protect themselves;
- receive WHO advice and logistical support, when requested, to respond to disease outbreaks and other public health events;
- have access to the Global Outbreak Alert and Response Network (GOARN), a 'one-stop shop' of global resources to help manage public health risks and emergencies of international concern.

Extract from WHO, 'Frequently asked questions about the International Health Regulations (2005)', <http://www.who.int/ihr/about/FAQ2009.pdf?ua=1>

Examples of WHO's work

- assisting countries in implementing the IHR
- providing guidance on assessment and response to disease outbreak
- evaluating its own systems and improving them so that it is well prepared to support countries responding to disease outbreaks.



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To see the answers to frequently asked questions about the International Health Regulations, go to the WHO website. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

How could WHO's work on IHRs promote health and wellbeing, and human development?

Countries that are able to respond effectively to disease outbreak are likely to reduce the impact of such diseases on their population, leading to a reduction in death and illness, and thereby promoting physical health. Responding quickly to

an outbreak of disease will reduce the spread of the disease, which will ensure that the population remains well enough to function in their daily lives, attending work and school, where they can enhance their capabilities and develop to their full potential.

Universal health coverage

The purpose of universal health coverage is to provide all people with the health services they need, regardless of their financial status. At least 400 million people in the world do not have access to one or more essential health services. Each year, up to 100 million people are forced into poverty and 150 million endure financial difficulties as a result of out-of-pocket expenditure on health services. The aim of universal health coverage is to prevent such situations by ensuring that access to health care is an option for all people.



Figure 11.5 Advice from WHO regarding what people need in order to get, be and stay healthy

The WHO believes that, to achieve universal health coverage, a country needs:

- a strong, efficient, well-run health system that meets priority health needs by:
 - informing and encouraging people to stay healthy, to prevent illness
 - detecting health conditions early
 - having the capacity to treat disease
 - helping patients with rehabilitation
- affordability – a system for financing health services so people do not suffer financial hardship when required to use them; this can be achieved in a number of ways
- access to **essential medicines** and technologies to diagnose and treat medical problems
- sufficient well-trained, motivated health workers to provide services that meet patients' needs, based on the best available medical evidence.

WHO understands that providing universal health coverage can improve the health of a population. People with access to health services are able to be productive and active contributors to their families and communities, and children are able to attend school and learn. Affordable and accessible health care also reduces the risk of people being forced into poverty or financial instability as a result of out-of-pocket expenses for health services. Therefore, universal health coverage is crucial for sustainable development and poverty reduction, and an important component of strategies to reduce social inequities.

essential medicines drugs that meet the health care needs of most people in a population, by being available at all times, in adequate amounts, in appropriate dosages, at an affordable price



Getty Images/Raveendran

Figure 11.6 People lining up to receive health care

CRITICAL FRIEND

With a partner in your class, discuss Australia's health care system and how it allows Australian citizens to experience universal health coverage. Remind each other how this system contributes to the high health status of Australians.



Weblink

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To read more about universal health coverage and view a video, go to the WHO website. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.



Weblink

INVESTIGATE

To read another example of the work being done to increase access to medical products, go to the WHO website. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

Examples of WHO's work

- providing funding to improve health systems – for example, to employ and pay health workers
- increasing access to essential medicines and medical technology
- helping to improve countries' health systems by providing training for health care workers.

How could WHO's work on universal health coverage promote health and wellbeing, and human development?

Improved access to medical products means that easily treatable conditions are less likely to develop into life-threatening illnesses. This means that people with increased access to medical products will spend less time unwell and more time participating in the life of their community, such as spending time with family and friends. This contributes to fostering strong relationships and social health for people.

Increasing access to medical products

WHO seeks to ensure that people have access to quality, safe and affordable medicines, vaccines, diagnostics and other health technologies. WHO defines 'essential medicines' as those that satisfy the priority health care needs of the population. They are selected according to public health relevance, evidence on efficacy and safety, and comparative cost-effectiveness. Essential medicines are intended to be available within a functioning health system at all times in adequate amounts, in the appropriate dosage forms, with assured quality and adequate information, and at a price the individual and the community can afford.

WHO works with countries around the world to increase people's access to medical products, as this is vital to keeping people well, so that they can go about their daily lives and thereby improve their level of human development. Improving access to medical products is central to achieving universal health coverage.

Examples of WHO's work

- providing guidance to countries about WHO's 'Model List of Essential Medicines', which lists essential medicines that should be available for all citizens
- working with experts to develop new and effective technologies to treat and prevent disease
- working with countries to increase the range of technologies and medications available to prevent and treat disease.

How could WHO's work on access to medical products promote health and wellbeing, and human development?

Improved access to medical products means that easily treatable conditions are less likely to develop into life-threatening illnesses. Therefore, people with increased access to medical products will spend less time unwell and more time participating in the life of their community, such as spending time with family and friends. This contributes to fostering strong relationships and social health for people.

Case study

Tanzania making steady progress in access to essential medicines and health products as new challenges emerge

In recent years Tanzania has made considerable progress in access to quality essential medicines and health products. Largely thanks to improved communication between small or remote health facilities and the central medical store, more medical supplies are reaching rural areas and enhanced regulatory capacity is ensuring better quality, safety and effectiveness of treatments and of medical devices and diagnostics. However, as in many sub-Saharan African countries, funds and efforts are largely concentrated on major, heavily donor-funded infectious diseases or maternal and child health programmes, leaving gaps in treatment and diagnosis for non-communicable diseases, which are rapidly spreading.

'We are experiencing a double epidemic,' says Dr Muhammad Bakari Kambi, the country's recently appointed Chief Medical Officer. 'We have communicable diseases ... and an upsurge of NCDs (non-communicable diseases) – cancers, diabetes, cardiovascular disorders. Unfortunately drugs and medical equipment needed to manage these conditions are very expensive and that's a huge challenge.'

Diabetes, hypertension and cancer are on the rise in the country. The government has included some medicines to treat these diseases in the national essential medicines list, but availability as well as prices remain a challenge.

Marco Salingo, Head of the Pharmacy Department at Mwananyamala District General Hospital, in Dar es Salaam, complains that medicines frequently run out at the hospital, especially medicines for chronic diseases like diabetes and cardiovascular conditions. 'We place our orders to the central medical store every three months,' he explains, 'but sometimes we run out of crucial medicines before the next order is placed, and there are also delays in orders being filled.'

Edward Terry, Acting Director of Customer Services and Zone Operations at the Medical Store Department, the body in charge of procuring medicines for public health facilities across the country, states that funds are a major problem. 'The money we are allotted is insufficient to service the entire country. Particularly for medicines like insulin and anti-hypertensives, the price is too high so we cannot buy as much as we would need.' He also claims that forecasting needs by hospitals and smaller health facilities is sub-optimal.

Dr Delila Moshi, the Medical Officer in Charge at Mwananyamala Hospital, echoes the concern about the funds made available by the government to buy medical commodities but also claims that there are problems with the supply chain. 'The distribution of medicines is slow and inefficient. When there's a stock-out of certain medicines we're forced to go to private suppliers, where the price is almost double.'

Dr Mavura Nurdin, head of the Diabetes clinic, says that diabetes is becoming an enormous problem in Tanzania, partly due to diet and lifestyle changes, but also because, with greater awareness, people are being checked for the disease more frequently than in the past. 'We have 7000 patients at Mwananyamala Hospital alone. We don't always have enough medicines for all of them, so when we run out, we tell the patients they need to go and buy their insulin in a pharmacy, and pay the full price.'

Medicines in Tanzania are supplied to patients in public health facilities on a cost-sharing basis. Patients holding the national health insurance card, or a council card reserved for rural areas, usually cover about 50% of the cost. For the poorest (those without a regular income), children under five, pregnant women and people over 60 years, current policy is to provide medical services and medicines for free. However, for the moderately poor, who are not eligible [for] free healthcare, paying 50% of the price out-of-pocket to treat infections that hit frequently in the country – malaria, typhoid, cholera, meningitis, yellow fever, etc. – still represents a considerable financial burden. When it comes to treatment for non-communicable diseases, the price is even higher. Ludovic Festo, [a] young man being treated for diabetes at Mwananyamala Hospital, pays 10 000 Tanzanian shillings (US\$5) a fortnight for his insulin treatment, in a country where the minimum wage is about \$50 a month.

The [Tanzanian] government is now trying to make national health insurance mandatory for everybody, with the poorest paying lower fees. But in spite of the plan to reach the entire population with at least basic coverage for medical costs, Dickson Kejo, a pharmacist in the Health Ministry, says that much still needs to be done to ensure everyone gets the services and treatments they need. 'The country is huge,' he explains. 'Reaching people and raising awareness in the interior and even coastal areas is a massive task, with some roads in bad condition, particularly during the rainy season. This is partly why the rural health facilities are often lacking the commodities they need.'

Moving towards universal coverage for essential medicines and medical services is, according to Dr Muhammad Bakari Kambi, a top priority for the government. 'We are working to ensure that every Tanzanian is covered with health insurance.' But several health workers say that it must be accompanied by a more efficient supply chain for products. The frequent stock-outs or simple unavailability of certain medicines are pushing people to procure their own treatments from private pharmacies and suppliers. This is even the case with terminal cancer patients, due to regular shortages of morphine and drugs for chemotherapy.

Extract from WHO, 'Tanzania making steady progress in access to essential medicines and health products as new challenges emerge', <http://www.who.int/medicines/about/country-stories/tanzania-overview/en/>





Case study questions

- 1 Outline how this case study demonstrates two of the WHO priorities in action.
- 2 Describe examples from this case study that promote global health.
- 3 Describe how increasing access to medical products can promote positive interrelationships between health, human development and sustainability.

Social, economic and environmental determinants

WHO recognises that action on the many contextual factors linked to ill-health, as well as on inequitable health outcomes (variations in health status within and between countries), is essential to improving health outcomes and increasing people's life expectancy. Many factors related to poor health can be categorised as social, economic or environmental determinants of health.

Social determinants of health refer to the circumstances in which people are born, grow, live, work and age. These social factors are influenced by economic determinants – that is, the distribution of money, power and resources at local, national and global levels. Health inequities are predominantly the result of social determinants of health.

Environmental determinants refer to the surroundings in which people live. The physical environment consists of water and air, workplaces, housing, roads, nature, schools, recreation settings and exposure to hazards. Reducing the social, economic and environmental causes of ill-health and disease, and promoting equity, is the focus of WHO's collaborative work with other sectors in this priority area.

Examples of WHO's work

Examples of work done by WHO in relation to this priority include:

- working with non-health sectors to address factors that contribute to poor health
- coordinating (by the WHO's Social Determinants of Health (SDH) unit) support to countries taking action to address the social determinants of health inequities
- supporting, guiding and strengthening (by the SDH) a country's capacity to develop, implement, monitor and evaluate initiatives to promote health equity by addressing social determinants of health inequities
- providing financial and technical support to help countries recognise the particular social determinants of health that may be contributing to health issues within that country.

How could WHO's work on social, economic and environmental determinants promote health and wellbeing, and human development?

Creating an environment that fosters human development is a challenge faced by many countries. However, when social determinants of health such as education and employment are provided for citizens, they have the opportunity to access knowledge and the ability to earn an income. This can enhance their capabilities and their ability to afford a decent standard of living, contributing to an environment where people can develop to their full potential. Environmental determinants that

are favourable, such as access to safe water, help reduce disease transmission, and this promotes physical health. When people are aware that they have access to a safe supply of drinking water, this can reduce levels of stress.

Table 11.1 Summary of WHO leadership priorities

Priority	Description
Universal health coverage	Ensuring that health care is accessible and affordable for all people, regardless of their financial status. No one should be forced into poverty as a result of health care expenses.
International Health Regulations	Requiring member countries, as guided by WHO, to monitor, report and respond appropriately to outbreaks of certain communicable diseases, e.g. Ebola and avian flu.
Increasing access to medical products	Ensuring essential, high-quality and affordable medical technologies are accessible for all.
Social, economic and environmental determinants	Supporting action required across the range of factors affecting health, such as safe water and sanitation, poverty and education, to improve people's health outcomes and healthy life expectancy.
Non-communicable diseases	Addressing the capacity of health systems to provide for the needs of populations threatened by increasing instances of non-communicable diseases in both developed and developing nations, particularly cancer, respiratory disease, cardiovascular disease, diabetes and mental health.
Health-related Sustainable Development Goals	Maintaining and building on improvements that have been made towards the 2015 MDGs, including reducing child mortality, improving maternal health and combating HIV/AIDS, malaria and other diseases.



Weblink

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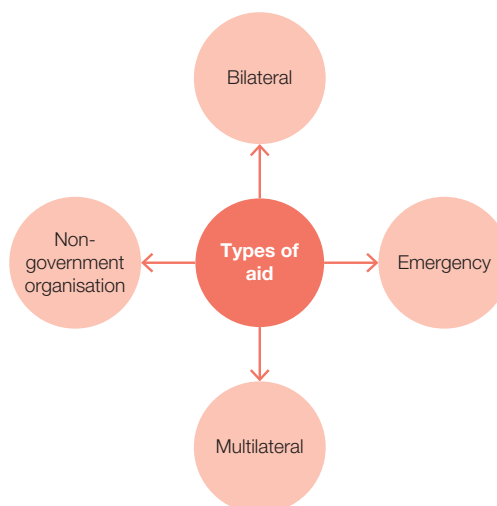
To read more about WHO leadership priorities, visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.

Review and reflect

- 1 What is the role of WHO?
- 2 Name the six WHO leadership priorities.
- 3 Choose a WHO leadership priority and provide an example of the work being done in this priority area to improve health status across the globe.
- 4 Conditions such as obesity, cardiovascular disease and cancer are contributing to rising numbers of deaths in many low-income countries. Name the WHO priority that is closely aligned to preventing the rise in incidence of these conditions, and outline how WHO is seeking to achieve this.
- 5 Outline how work in the WHO priority area of 'Social, economic and environmental determinants' promotes human development around the globe.

Types of aid

Like other high-income countries, Australia assists low-income countries throughout the world, but particularly in its own region, through the provision of **aid**. Aid is generally considered a form of assistance provided to a country or a community in need. This assistance is usually delivered during a crisis or for the ongoing development of the country or community and its people. There are several different types of aid, each of which either serves



aid assistance provided by donor government agencies

Figure 11.7 The four types of aid

a different function or originates from differing groups. Discussed in this section are emergency, bilateral and multilateral types of aid. Non-government organisation (NGO) aid is discussed in the next chapter.

Emergency aid

Purpose

emergency aid also known as 'humanitarian aid'; rapid assistance given to people or countries in immediate distress to relieve suffering, during and after human-made emergencies such as wars, and natural disasters such as flood, tsunami or earthquake

The term **emergency aid** can be used interchangeably with 'humanitarian aid'. Emergency aid is usually rapidly deployed by local or foreign governments, multilateral or non-government organisations to meet the needs of a population in crisis. Such crises may include human-made disasters such as war, or natural disasters such as earthquakes, tsunamis or floods. Emergency aid may take the form of providing medicine, food, water, temporary shelter and other immediate requirements, but can also be provision of healthcare workers or emergency personnel. This form of aid is designed to be short-term and rapid, and to help keep people alive in a time of need, by removing immediate threats to health. The intended purpose of emergency aid is not to address the causes of inequality or poverty. Many countries and organisations often work together to provide aid to countries in need and ensure that the response meets the scale of need.



Alamy Stock Photo/Chris Warham

Figure 11.8 Emergency aid being delivered following a crisis

Characteristics of emergency aid

- It is rapidly deployed.
- It is intended to address short-term needs.

How emergency aid improves health and wellbeing in a global context

Resources such as medication and clean water are often the first to be deployed in times of crisis. These resources can prevent diseases such as cholera from spreading, and this promotes physical health and therefore helps to reduce the scale of death following a crisis. When people have access to emergency aid following a disaster, it can promote good mental health. People's levels of stress are likely to be lower if they know that they have access to aid, such as food, when they may have lost their homes and access to such resources following a disaster.

Multilateral aid

Purpose

Multilateral aid is provided through international organisations such as the Asian Development Bank, WHO, the UN and the World Bank Group. It involves the governments of many countries contributing to the international organisations, which then direct this aid to large-scale projects such as reducing the impact of global warming and fighting the spread of disease. Countries that give to international organisations, such as Australia, may prefer to direct their support to organisations that work in their local region. For example, Australia directs much of its multilateral aid to organisations that focus on the Asia-Pacific region.

multilateral aid aid consisting of donations from a number of countries and distributed to recipients by an international organisation (e.g. World Bank, UN, WHO)



Getty Images/AFP/A Majeed

Figure 11.9 The World Food Programme in northwestern Pakistan is an example of multilateral aid.

Benefits

The Australian Department of Foreign Affairs and Trade (DFAT n/d) lists the following benefits of multilateral aid:

- Influence – Multilateral organisations [i.e. international organisations that deliver multilateral aid] can influence countries and resolve an issue when it may be difficult for a single bilateral donor to do so. ...
- Reach and scale – Multilateral organisations are also able to deliver programs where Australia does not have a significant presence or where bilateral assistance is not possible. ...
- Expertise – Multilateral organisations bring high levels of relevant expertise to their [focus area of development]. They are most often specialist organisations focused on specific development priorities such as **gender equality** ... and sexual and reproductive health rights. They are able to effectively mobilise relevant expertise and experience from around the world. ...
- Coordination – At global or regional levels, multilateral organisations can deliver multi-country programs to improve efficiency and help countries share lessons across borders. United Nations agencies work together across borders on issues such as HIV/AIDS, using inputs from organisations such as UNAIDS, the World Health Organisation and the UN Office of Drugs and Crime to effectively tackle the issue on a regional basis. This multi-country role can also be particularly important where countries are small or geographically isolated, such as in the Pacific. At the country level, multilateral organisations have close working relationships with host governments and help coordinate development efforts in line with developing countries' own plans. Improved coordination has the potential to reduce costs for donors.

gender equality when everyone receives equal treatment and no one is discriminated against because of their gender

Department of Foreign Affairs and Trade website - www.dfat.gov.au
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<https://creativecommons.org/licenses/by/3.0/au/>

Characteristics of multilateral aid

- It involves international organisations that can carry out large-scale projects.
- It often requires many organisations to cooperate and work together to achieve large goals.
- It can be directed towards projects that are sustainable and intended to provide long-term assistance to people in need.

How multilateral aid improves health and wellbeing in a global context

Multilateral aid can also be used by an organisation such as the World Bank Group to assist people in low-income countries to set up and run their own agricultural businesses. This may lead to employment and an ongoing source of income for these people, which can be beneficial for their mental and physical health. Mental health may be improved, as learning to run a successful business can be positive for people's confidence and self-esteem. Physical health may be improved, as the income generated from a business can be used to afford resources such as clean water, food and health care, all of which promote the functioning of the body and help prevent disease.

Case study

School meals provided by the World Food Programme

As the largest humanitarian provider of school meals worldwide, the World Food Programme (WFP), along with governments and partners, supports education, reduces malnutrition, and promotes development, especially during times of crises and emergencies. ...

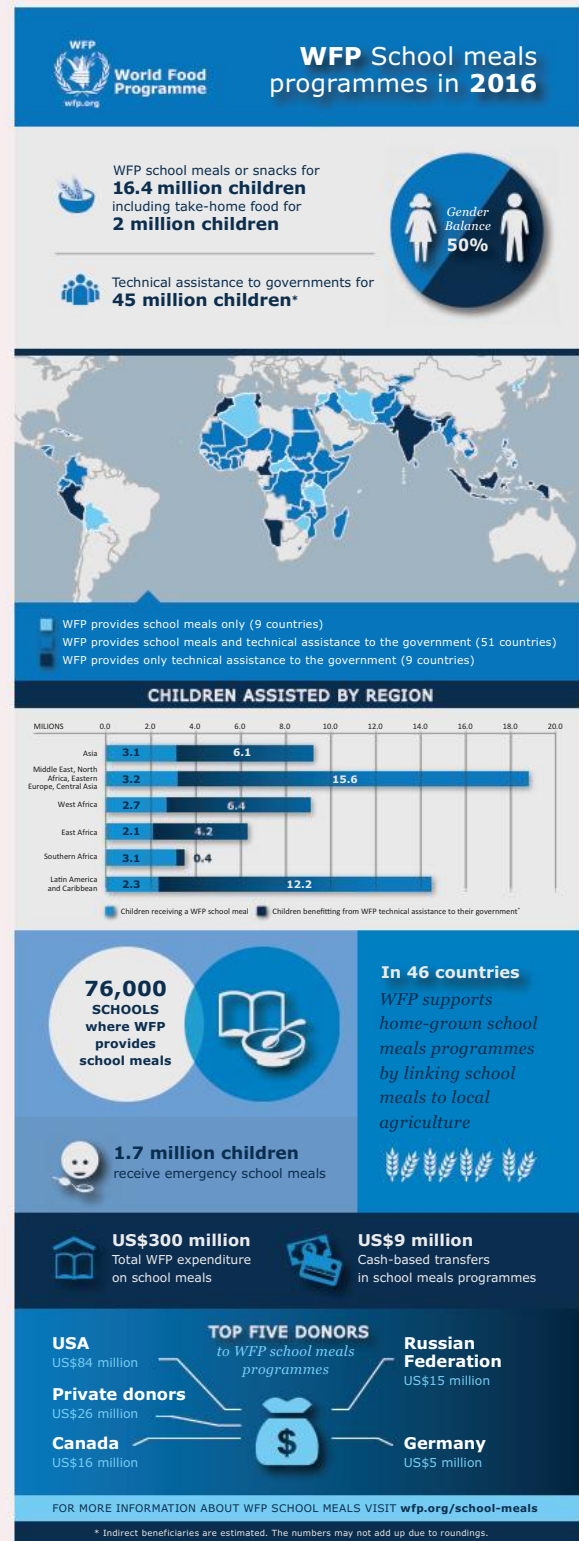
WFP provides school meals to more than 20 million children every year. ... School [food] programmes include meals for students and high-energy biscuits or snacks at schools where a crisis or emergency has struck. WFP also provides take-home rations to families with children who attend school regularly... A meal at school acts as a magnet to get children into the classroom. Continuing to provide a daily meal to children helps to keep them in school. The benefits of school meals extend beyond the classroom:

- **Safety Nets:** School meals help families to educate their children and protect their food security in times of crisis. School meals support development so children can become healthy and productive adults, breaking the cycle of hunger and poverty in the world's most vulnerable areas.
- **Nutrition:** In poor countries, school meals are often the only regular and nutritious meal a child receives. They are an investment in the child's future. Without them, hunger and micronutrient deficiencies can cause irreversible damage to their growing bodies. When school meals are combined with deworming and micronutrient fortification, especially when tailored to specific nutritional needs such as those for adolescent girls, that investment is multiplied.
- **Education:** A daily school meal provides a strong incentive to send children to school and keep them there. It allows children to focus on their studies [without being distracted and unfocused due to hunger] and helps to increase school enrollment and attendance, decrease drop-out rates, and improve cognitive abilities. Programmes can be tailored to provide take-home rations to target girls in areas where there is a gender gap [in attendance].
- **Local Agriculture:** As often as possible, food is bought locally, which benefits local farmers and the whole community while enhancing the sustainability of the programme.

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Case study questions

- 1 Provide an example from the case study that demonstrates that the aid described is multilateral aid.
- 2 Using an example from the case study, outline how this aid:
 - a contributes to improving global health status
 - b is improving levels of human development.



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Figure 11.10 School Meals in 2015, a World Food Programme, is an example of multilateral aid.

Bilateral aid

Purpose

The prefix 'bi' means 'two'. Bilateral aid involves the government of one country providing aid to the government of another country. For this form of aid to be effective, the governments of both countries must work together to ensure that the aid supplied is reaching and improving the circumstances of the people it is intended for. The projects supported by **bilateral aid** depends on the countries involved. They may be small-scale projects, such as improving a community's access to education, or larger-scale projects, such as improving roads and transport systems in a region. The level of aid and the projects it supports varies depending on the countries involved. Bilateral aid is sometimes criticised, because some countries may appear to be giving this type of aid for political or strategic reasons.

bilateral aid aid given by one country directly to another; an example is when Australia provides aid to East Timor



Alamy Stock Photo/US Marines Photo

Figure 11.11 Bilateral aid being delivered in Port-au-Prince, Haiti, after Hurricane Matthew in October 2016.

Characteristics of bilateral aid

- It is a coordinated effort between the governments of two countries, commonly a partnership between a high-income and a low-income country.
- It is project-based aid that can strengthen the relationship between two countries and therefore can benefit both countries.
- The projects that the aid supports can be small- or large-scale, depending on the need that exists.

How bilateral aid improves health and wellbeing in a global context

If bilateral aid is used to set up an education program in a community, this can benefit both social and emotional health. An education program, such as setting up a school, can lead to young people meeting and developing social skills while at school, and this can be positive for social health. At school these children may be taught about and observe adults responding appropriately to stressful situations and this can therefore be positive for their emotional health.

CRITICAL FRIEND

Find a partner in class and challenge them to define a type of aid, provide examples of its characteristics and outline how this type of aid can contribute to improved levels of human development. Once they have had a go, get them to quiz you.

Review and reflect

- 1 Provide three examples of humanitarian aid.
- 2 Explain why a country such as Australia may provide bilateral aid to countries in its region.
- 3 Outline an example of bilateral aid that would contribute to improving the levels of human development in a low-income country.
- 4 List two advantages of multilateral aid over bilateral aid.
- 5 Name two organisations that provide multilateral aid, and give an example of the type of aid these organisations may each provide.

Australia's aid program

The ultimate aim of Australia's aid program is to help people overcome poverty and help low-income countries attain sustainable development. The poverty-focused development assistance provided by Australia is guided by the SDGs.

It is in Australia's national interests to supply aid to other countries, as this aid can foster stability and prosperity both locally and further abroad. Low-income countries with social tension arising from poverty and inequality are prone to social disruption, which threatens their own security and that of neighbouring countries.

Australia's closest neighbours include low-income countries that suffer from widespread poverty. Economic growth in these neighbouring countries is in Australia's interests, because of the possibility of expanding existing trade partnerships and the potential for new partnerships. Countries that once received aid from Australia, such as South Korea, are now important trading partners for Australia. In an increasingly unpredictable globalised economy, the bilateral relationships fostered by the provision of aid are imperative for Australia and its neighbours.

The Department of Foreign Affairs and Trade (DFAT) manages Australia's aid program and focuses its aid efforts on areas in the Indo-Pacific region, close to Australia's borders, as this is the region where Australia can make the greatest impact, according to the government. In 2014–15, at least 90% of Australia's aid program went to the Indo-Pacific region, predominantly South-East Asia and the Pacific. This was mainly because most of Australia's closest neighbours are low-income nations facing major development challenges. Over 700 million people in the Asia-Pacific region live in extreme poverty, lacking access to basic necessities such as food, water and sanitation, with many living on less than US\$1.25 per day. The vulnerability of these nations can lead to instability, and this can affect Australia's national and security interests. Therefore, both Australia and recipient countries benefit from the growth, prosperity and stability that Australia's aid can provide in the region.



AAP Image/DFAT/Jonathan Gilbert

Figure 11.12 An example of Australian Aid packed and waiting to be deployed.

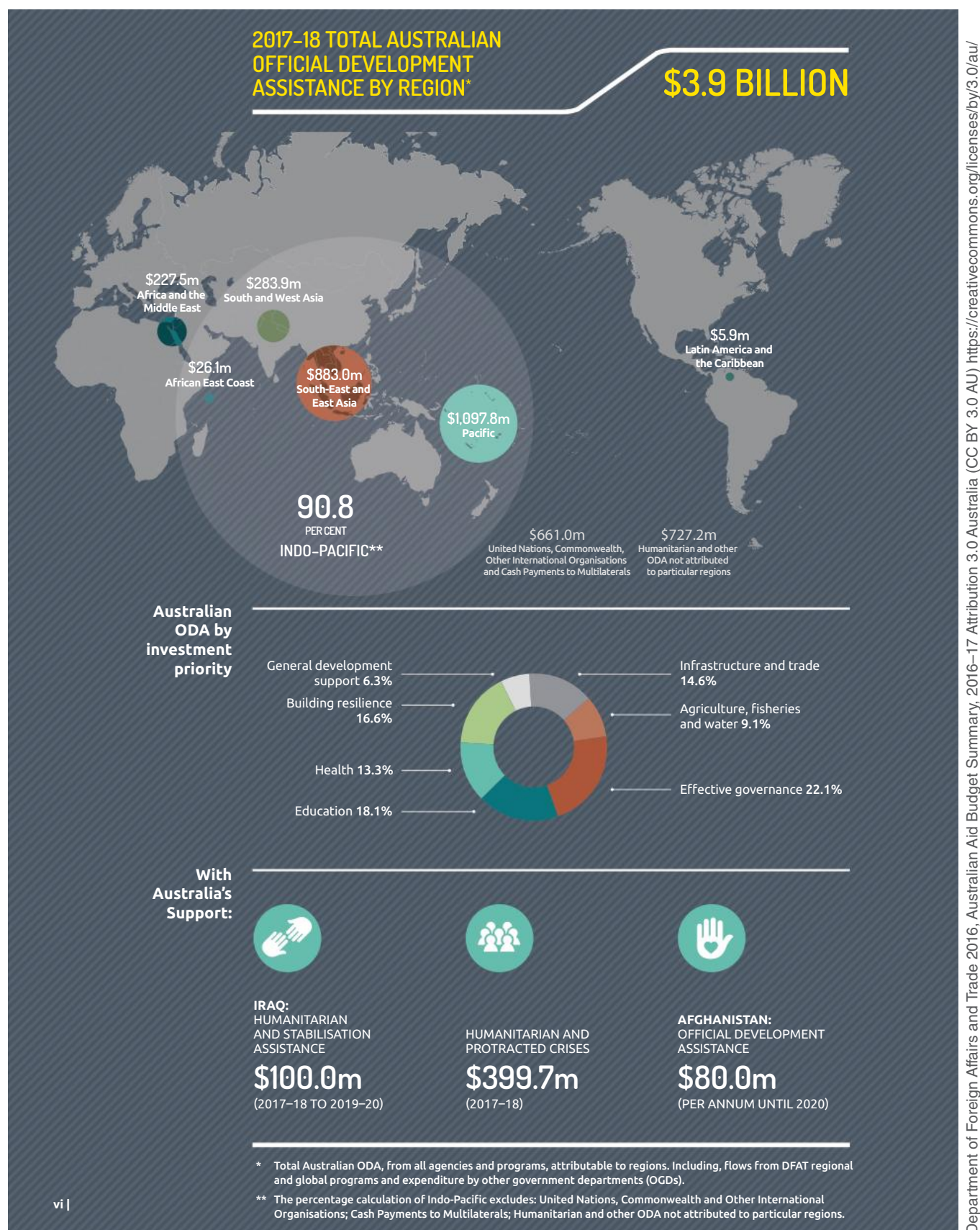


Figure 11.13 Recipients of Australian aid (figures are in millions of dollars)

Australia delivered \$3.9 billion in aid, known as Official Development Assistance (ODA), during 2017–18. Around 90% of this aid went to the Indo-Pacific region; however, Australia also had an emergency fund of approximately \$130 million, as part of its commitment to humanitarian assistance, to ensure a timely and effective response to disasters or other humanitarian crises.

What kind of aid does Australia provide?

The Australian Government provides funding for emergency, multilateral and bilateral aid, as well as funding for non-government organisations (NGOs) that deliver aid to communities in need.

Table 11.2 Australian aid funding provided during 2015–16 and 2016–17

Program	2015–16 revised budget estimate (\$m)	2016–17 budget estimate (\$m)
Gender equality fund	50.0	55.0
Regional scholarships and education	101.8	101.8
Health, water and sanitation	62.3	62.3
Infrastructure and rural development	38.4	40.1
Governance	10.8	10.5
Fisheries and agriculture	8.6	9.3
UN Development Fund (UNDP)	12.7	12.7
UN Children's Fund (UNICEF)	21.0	21.0
UN Population Fund (UNFPA)	9.2	9.2
UN Program on HIV & AIDS (UNAIDS)	4.5	4.5
World Health Organization (WHO)	12.4	12.4
UN Women	7.8	7.8
Global NGO Programs	130.4	130.4

(source: Australian Aid Budget Summary, 2016–17, pp.7–8, Figure 4)

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Learning fields

DFAT Staff Profile: Leilani

Year joined: 2007

Current position: Policy Adviser, Office of the Special Coordinator, Regional Assistance Mission to Solomon Islands (RAMSI)

Other positions in DFAT

- Executive Officer, Canada, Central America and the Caribbean Section, Americas and Africa Division
- Manager, Australian Cultural Program, Shanghai World Expo
- Manager, Indigenous Program, Cultural Diplomacy Section, Consular, Public Diplomacy and Parliamentary Affairs Division

Where did you live and what were you doing before joining DFAT?

Prior to joining DFAT, I lived on Thursday Island in the Torres Strait. I was employed by the Torres Strait Regional Authority (TSRA) as the Health Policy Officer, but was previously the Manager of the Gab Titui Cultural Centre and Arts Development Officer for the Torres Strait Region at the TSRA.



Figure 11.14 Leilani





What qualifications do you have?

Graduate Certificate in International Relations (Deakin University), Masters in Cultural Heritage (Deakin University), and a Bachelor of Business (Central Queensland University).

Have you used your qualifications/experience during your time in DFAT?

Most definitely. In my current role, my business background has been valuable to understand economic development issues in the Solomon Islands.

Secondly, the Masters in Cultural Heritage significantly contributed to and shaped policy and program matters regarding cultural heritage for our overseas posts. As Manager of the Australian Cultural Program at the Shanghai World Expo and for my work on cultural diplomacy more broadly, my tertiary studies and expansive experience in the arts industry was greatly valued.

Do you speak another language?

Yes – Solomon Islands pijin

Why did you apply to DFAT?

To make a strong contribution towards the overseas representation of Australia's Aboriginal and Torres Strait Islander peoples, culture and heritage.

What was the most challenging aspect of the recruitment/selection process?

The length of time for the security clearance process.

Do you have any tips for applicants on how to approach the selection process?

Yes – be specific in what you are looking for at DFAT. There are several pathways to gain employment in DFAT ranging from entry level to specialist positions and general bulk round vacancies. Ensure that one's experience and interests align with the specific mode of recruitment. For example, if one's background is in corporate, then consider applying for the corporate graduate program if one has recently completed tertiary studies, or consider the general corporate bulk vacancies at the appropriate lateral level. This will minimise a mismatch of expectation for both the applicant and DFAT.

Has the reality of working in DFAT differed from your perceptions of what it was going to be like?

Absolutely. At first, I was unsure what it would be like to work in DFAT and how the institution operated. However, over the years, I have enjoyed the diverse work opportunities and overseas experiences DFAT has provided to me. Every area is different and challenging across both the corporate and policy sectors.

What has been the highlight of your career with DFAT so far?

Working on the Shanghai World Expo and being part of a very cohesive team on such a grand scale. Creating awareness within a predominant Chinese audience about Australia, its people, cultures and societies was one of the greatest highlights for me. It was such a challenging and rewarding experience.

How have you found the overseas posting experience?

Very educational and informative. I completed a short term assignment in Shanghai in 2010 and am currently deployed to the Solomon Islands. The Solomons experience is very different to what I have done in the past, but at the same time, it reminds me of the Torres Strait. There are similarities and differences between the Solomons and the Torres Strait and I have learnt a great deal both personally and professionally on this deployment.

As an economist/accountant/lawyer etc, why would you recommend DFAT over other career options?

DFAT offers a range of opportunities both domestically and internationally as well as diverse work placements across policy and corporate areas. I believe keeping an open mind and a 'can do' approach to any work environment enables one to embrace a full range of work experiences DFAT has to offer.

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Australian aid priorities

The Australian Government implements a wide array of aid initiatives and this work is guided by six priority areas, which the government believes can bring significant improvements to health and wellbeing and human development around the globe. The six priorities are shown in Figure 11.15.

These six priorities contribute to the achievement of the two development outcomes the government has set: private sector development and human development (Figure 11.16). These development outcomes help recipient countries to promote sustainable economic development and in turn reduce poverty.



Figure 11.15 Australian aid priorities

Learning tip

Use the acronym 'GABEEI' to help you recall the six Australian aid priorities.

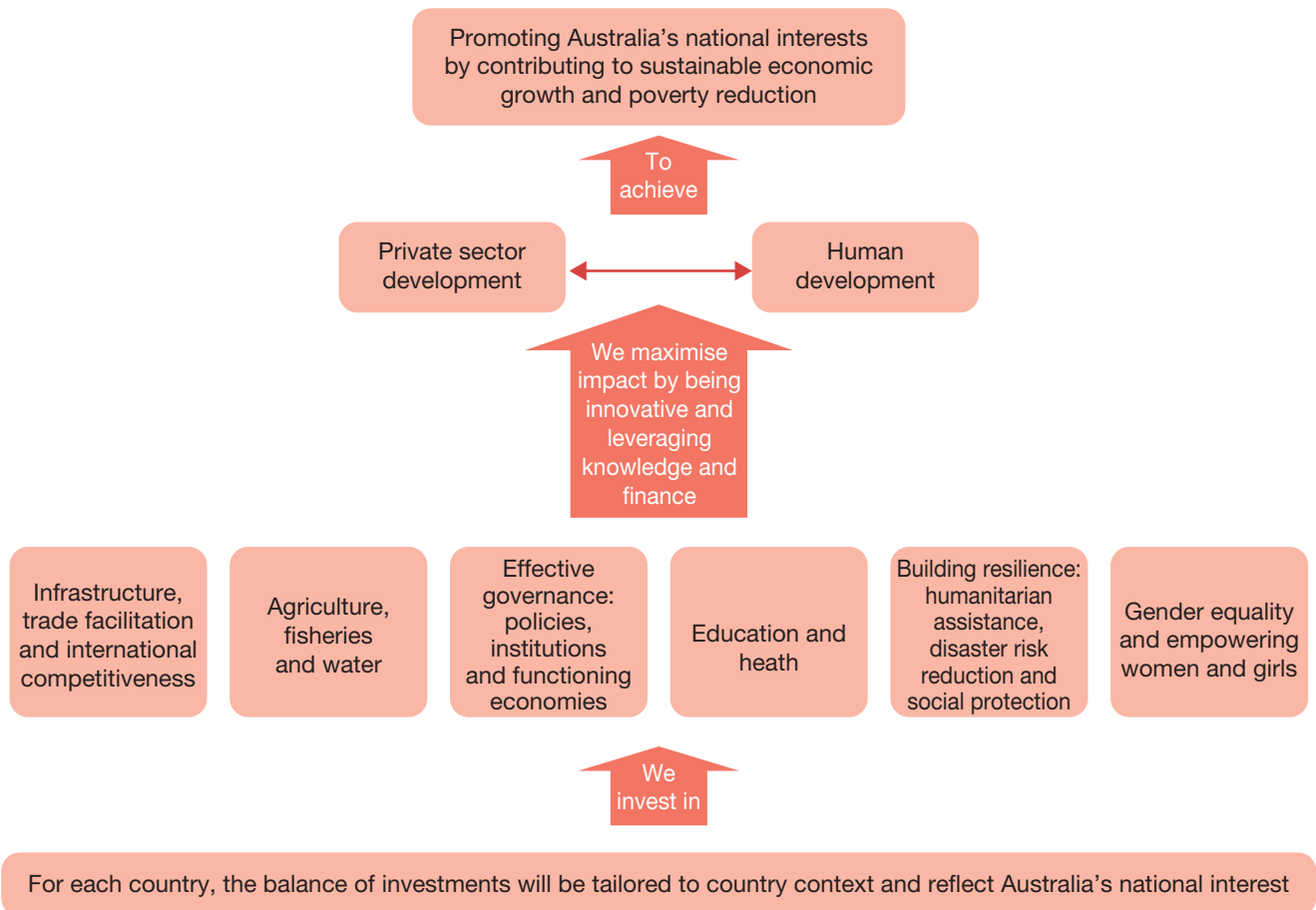


Figure 11.16 The strategic framework for Australia's aid program

Building resilience: humanitarian assistance, disaster risk reduction and social protection

External shocks such as natural disasters, conflict and economic shocks (such as food and fuel price spikes) can severely undermine growth in low-income countries, and increase poverty and insecurity. The Australian Government responds to humanitarian crises around the world by sending aid in the form of personnel and resources, including food, water, shelter and medication. This assistance helps Australia to achieve its goal for humanitarian action, which is to save lives, alleviate suffering and maintain human dignity during and in the aftermath of conflict, natural disasters and other humanitarian crises, as well as to strengthen preparedness for the occurrence of such situations.

The Australian Government recognises that preventing crises is a sound long-term investment and also encourages private sector investment in low-income countries. It therefore continues to work with countries to reduce disaster risks and promote preparedness. The aid program strengthens social protection, by helping to provide safety nets in the face of shocks, and helps build the resilience of countries and communities, particularly those in Australia's region.



Shutterstock.com/Chris Warham

Figure 11.17 Australian troops providing assistance in a low-income country

Examples of Australia's actions in building resilience

Australia's aid program:

- creates pre-positioned relief supplies across the globe to enable rapid response to disasters
- sends Australian expert personnel to regions that have experienced natural disasters, to assist in coordinating recovery efforts
- funds effective Australian NGOs to broaden the impact of its aid program
- works closely with partner governments to improve and expand the coverage of national social protection systems, so assistance reaches the poor, enabling them to improve their own lives
- works in partnership with international organisations such as the World Food Programme to deliver aid.

How could building resilience promote health and wellbeing, and human development?

Assisting countries to improve their ability to respond to disasters means that more people can be helped in times of need. This may reduce levels of illness, injury and death and therefore promote physical health in the affected country. The Australian Government working with governments of other countries promotes relationships between countries and is positive for the social health of people in those countries. In providing aid to countries that have suffered a natural disaster, the Australian Government is helping people to maintain a decent standard of living and access resources such as health care in times of need. In turn this helps people to maintain their health and improve their level of human development.

Effective governance: policies, institutions and functioning economies

A country's society and economy are affected by its government. A stable, productive government can promote the health and human development of its population. Effective governance can provide the foundations for economic growth, private sector investment and trade, and when this occurs, the government can generate revenue to reinvest in the country, improving and expanding services such as education and health care. Well-functioning institutions can provide stability and maintain law and order, by ensuring that disputes among citizens are settled peacefully and fairly. The Australian Government works with governments that are seeking to become more effective; it offers expert personnel and advice to help improve the day-to-day functioning of these societies.

Examples of Australia's actions in effective governance

Australia's aid program:

- assists in developing policies that strengthen the delivery of public services such as health care and education
- trains public servants in public administration competencies, such as record keeping and staff supervision
- works with partner countries to develop software to ensure that accurate records of enrolled voters can be kept
- provides assistance in developing processes for the recruitment of public servants, such as members of the police force.

How is our effective governance work promoting health and wellbeing, and human development?

By working with countries to improve the public services they can deliver, the Australian Government is helping to improve services such as education and health in partner countries. Greater access to education allows people to enhance their capabilities and expands their choices about what they can do with their lives. Education can also

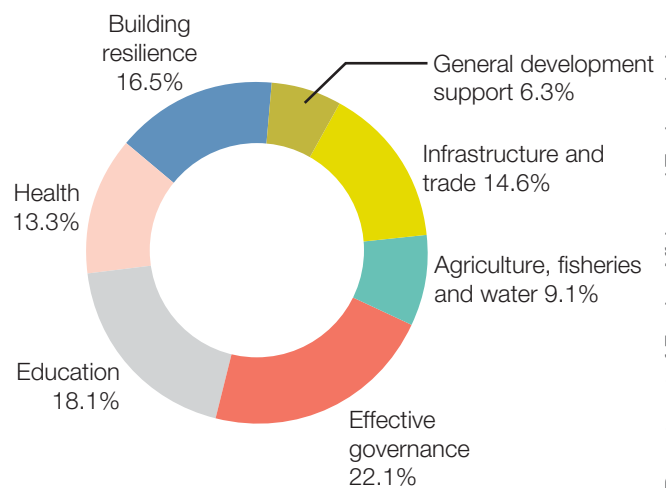


Figure 11.18 Australian aid investment (percentage of aid budget) by priority area

teach people to regulate their emotions and cope with stressful situations, which can promote emotional health. Improving services such as access to health care can assist in keeping people well, and this enables them to contribute to their community.

Figure 11.18 outlines how funding was divided among the aid priorities in 2016–17. (The ‘General development support’ priority is not discussed in this book.)

Gender equality and empowering women and girls

Gender equality refers to equal treatment, free of discrimination based on gender. The Australian Government supports gender equality and is aware that it is common for women and girls in low-income countries to lack the opportunities available to males in education and employment, and the freedom to make decisions that affect their lives. Therefore, the focus of this leadership priority is to increase gender equality and empower women, as this contributes to growth, development, stability and security for communities and countries in the region.

The Australian Government has three priorities that guide its work on gender equality:

- to enhance women’s voices and influence in decision-making, leadership and peace-building
- to promote women’s economic empowerment
- to end violence against women and girls.

Investment in the area of gender equality and empowering women and girls in high-income countries has demonstrated that better educated women have fewer, healthier and better educated children. If this could be achieved in low-income countries, it would reduce the burden of ill-health and increase savings for governments as well as contributing to enhancing women’s health and human development. In conflict situations, it has been demonstrated that women are often instrumental in brokering ceasefires and can help to deliver lasting peace. The Australian Government therefore seeks to ensure its aid initiatives prioritise the involvement of women and girls.



Figure 11.19 Australian troops assisting with children in a low-income country

Examples of Australia's actions in gender equality

Australia's aid program:

- assists female survivors of violence in partner countries in accessing services such as legal advice and counselling
- works to ensure that women can participate in work in a safe manner, by financially supporting programs such as the UN's Women's Safe Cities and Safe Public Spaces Global Initiative
- has a Gender Equality Fund – money from this fund is directed towards investments aimed at advancing gender equality and fostering innovative work by private sector and NGOs, particularly women's organisations
- has a program called Investing in Women – this program promotes private sector development, economic growth and gender equality in South-East Asia.

How is our work on gender equality promoting health and wellbeing, and human development?

The Australian Government is investing in promoting private sector opportunities for women to be employed and enhance their business skills. This work may lead to these women earning an income and obtaining a decent standard of living, and may also help them to lead creative, productive lives in accordance with their interests and needs. By helping women gain skills that will enable them to take control of their lives, the Australian Government is contributing to improving their confidence and self-esteem, which is positive for mental health.

Agriculture, fisheries and water

Millions of people in the world, particularly in rural regions, work in the agriculture and fisheries sectors. Agriculture and fishing provide employment and income for millions of workers in low-income countries, and provide an important pathway out of poverty. For island economies, fisheries are also a major source of domestic revenue that can then be reinvested into the economy in areas such as education and health.



Photo courtesy by the Market Development Facility (MDF), an Australian Government funded private sector development program. Business: Mr Devesh Nath, Director of Devesh and Bharos Farms of Nadi, Fiji. Photographer: Rob Rickman of Rampant (Fiji) Limited of Lautoka, Fiji.

Figure 11.20 A newly installed greenhouse facility in Fiji

The increasing global population and improvements in living standards are likely to contribute to an estimated 60% rise in global food demand and a 55% rise in global water demand by 2050. Therefore, in the future, food and water supplies will increase in importance and value. The agriculture and fisheries sectors are both critical to strengthening global food security and improving nutrition; hence, the Australian Government is committed to assisting countries in our region to improve their water and food security.

Examples of Australia's actions in agriculture, fisheries and water

Australia's aid program:

- works with agricultural groups in low-income countries to improve their ability to export their products to international markets
- invests in agricultural and fisheries research, to increase productivity, reduce post-harvest losses and make supply chains more efficient
- supports small-scale farmers, fishers and entrepreneurs, many of whom are women, to meet their livelihood and food security needs; one way in which this is done is by addressing the key challenges that inhibit commercial viability
- assists government and non-government groups in the efficient use of irrigation water, which helps increase crop yields and therefore farmers' incomes.

How is our work in this priority promoting health and wellbeing, and human development?

By supporting people in low-income countries to improve their food security by investing in fishers and entrepreneurs, the Australian Government is helping to reduce levels of hunger and malnutrition. In turn this promotes the healthy functioning of people's bodies and immune systems and contributes to good physical health. The Australian Government is also helping farmers to improve their yields by assisting in the efficient use of irrigation water. This is contributing to improved incomes and promoting a decent standard of living for the farmers. This income can then be spent on other resources such as health and education, contributing to an environment where people can develop to their full potential.

Case study

Australia providing bilateral assistance to Fiji

Australia and Fiji have an enduring relationship, underpinned by strong people-to-people links and longstanding trade and investment ties. Australia's national interest is in a stable and prosperous Fiji that is an active member of the Pacific community.

Rising inequality in Fiji means that development assistance needs to focus on the disadvantaged and marginalised: the rural poor, women and people living with disabilities. Literacy and numeracy skills are declining in school-age children and life expectancy [rises have stalled]. Limited economic opportunities, particularly in rural Fiji, underpin challenging poverty levels and more than 15 per cent of the population lives in informal settlements.

Australia's aid program will work in partnership with the Government of Fiji in support of Fiji's development. Australian aid will complement other donors and play a major role in leveraging the public or private sector to deliver meaningful results.

[Australia shares] the Government of Fiji's interest in enhancing private sector growth and stimulating the economy in order to generate jobs and incomes for the poor. Following the release of Fiji's National Development Plan in late 2015, Australia and Fiji [identified] jointly agreed priorities for development cooperation which will be reflected in an Aid Partnership.

Australia plans to continue as the lead donor in health and education, areas in which [it has] historically been the largest contributor and where major ongoing challenges remain. Australia will also focus on private sector development, good governance and gender equality. These new areas





of engagement reflect Fiji's major development challenges as well as Australia's development cooperation priorities as outlined in the Australian Aid policy.

In order to support inclusive economic growth to reduce poverty in Fiji, Australian aid to Fiji from 2015–16 to 2018–19 will be organised under two strategic objectives:

Objective 1: Increased private sector development

Australia will support good governance and invest in the private sector to stimulate growth. [It] will provide technical assistance and funding for programs that increase opportunities for employment and income generation, particularly in rural communities. [Australia] will focus on helping the Fijian Government to reform the public sector, streamline business regulations, facilitate trade and bolster accountability [of] institutions.

Objective 2: Improved human development

To help ensure the benefits of economic growth are shared by all Fijians, Australia will focus on improving access to quality health and education services, particularly for disadvantaged segments of the population, including the rural poor, women and people living with disabilities. Australia will work with the Government of Fiji and the private sector to strengthen the key systems, policies and capacities that underpin quality services and ensure value for money.

...

[Australia's past results in Fiji]

In 2014, Australia's aid program contributed to:

- Increasing the number of trained midwives by 25%;
- [The leverage of] almost \$2 million through the Market Development Facility in private sector investments across the tourism and horticulture sectors, generating \$840,000 in new business activity;
- [The renovation of] 197 classrooms in 2014, benefitting over 5000 students through Australia's Access to Quality Education Program; and
- Fiji's successful national elections held in September 2014 by providing technical assistance to the Fijian Elections Office and co-leading the Multinational Observer Group.

Department of Foreign Affairs and Trade website – www.dfat.gov.au

Case study questions

- 1 List two Australian aid priorities that are being achieved through the work outlined in the case study. Justify each example.
- 2 Give an example of how the Australian Government's work in Fiji is promoting:
 - a the health and wellbeing of the Fijian people
 - b Australia's national interests.

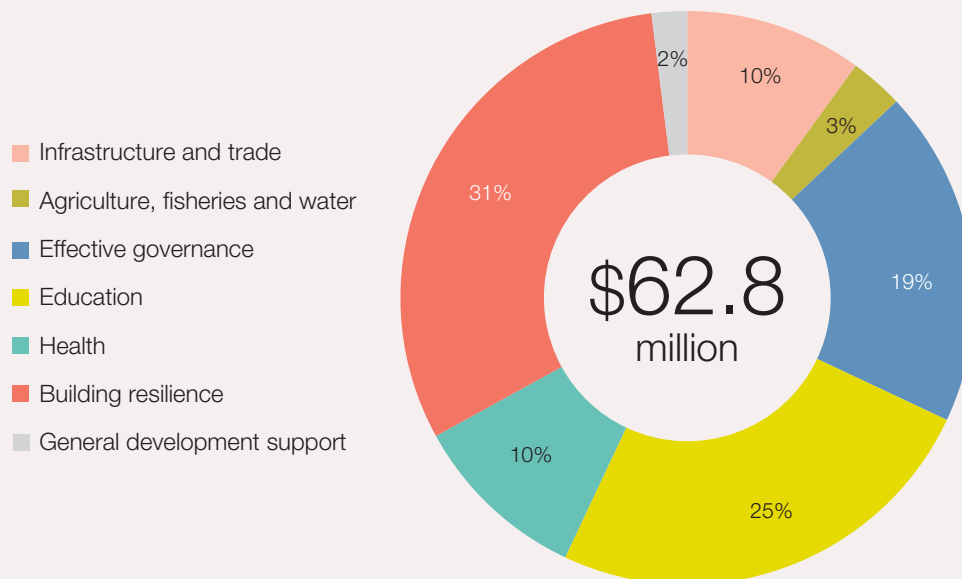


Figure 11.21 Australian aid to Fiji by investment priorities 2015–16 (source: DFAT, 2017)

Education and health

The Australian Government works with countries to make their health and education systems accessible, equitable and affordable, thereby contributing to the improvement of health and wellbeing and human development around the globe. Through Australia's aid program, investments in health systems are made

so that men, women and children can achieve better health outcomes and live healthy and productive lives. The education and health priority provides aid that addresses major health concerns in low-income countries, such as communicable diseases like malaria and HIV, and also non-communicable diseases such as heart disease and cancer. The aid program seeks to reduce the burden of communicable diseases, which claim many lives each year, by improving hygiene, sanitation and access to safe drinking water.

The Australian Government recognises that education is important in overcoming poverty and in assisting individuals to lead productive, creative lives in accordance with their needs and interests. In alignment with Sustainable Development Goal 4, the aid program invests in better quality education, enabling young people to get the skills they need to contribute to the economy. Australia is supporting changes to education systems and policies in order to deliver better services for women, girls and people with a disability, as these groups are particularly disadvantaged by poor-quality and inadequate education services.

Examples of Australia's actions in education and health

Australia's aid program:

- provides assistance with teacher training and curriculum development in countries in the region
- contributes funds and resources to build schools in areas where school attendance is an issue
- promotes learning for all, with a focus on girls, disadvantaged children and those with a disability
- works to improve access for students in low-income countries to technical education and training to ensure they are job ready
- enables students from partner countries to undertake tertiary study in Australia
- supports partner governments in improving hygiene and access to essential water supplies and sanitation services in poor communities and in schools and health centres, to directly benefit women and girls
- promotes improved health outcomes through quality maternal and child health and family planning services
- helps to prevent millions of deaths from hepatitis B, measles and rotavirus diarrhoea in low-income countries by donating to the Global Alliance for Vaccines and Immunisation (GAVI) organisation, which provides people with vaccines against these diseases.

How is our work in this priority promoting health and wellbeing, and human development?

The Australian Government is improving access to maternal and child health and family planning services in many partner countries. This means that women can have greater knowledge about the risks of home births and having multiple births in close succession. Such information can assist in reducing maternal health complications and promote physical health. These women may also be provided with support post-birth to help them adapt to the new challenges of raising a child, and this may promote their emotional health. The Australian Government is contributing to education in low-income countries by investing in teacher training, and this is enhancing the capabilities of citizens and also contributing to improved access to knowledge for students.



image folk/Dinodia Photo/Arun Mishra

Figure 11.22 Students at primary school using an electronic reader developed in their mother tongue

Infrastructure, trade facilitation and competitiveness

This priority aims to increase employment opportunities and average incomes in low-income countries, by promoting economic development. It focuses on growing the private sector and this is supported by efforts including investments in infrastructure, trade facilitation and international competitiveness. The cost of undertaking business is lowered with improved infrastructure, and trade facilitation ensures that businesses can take advantage of international opportunities.

Examples of Australia's action in this priority area

Australia's aid program:

- provides funding for low-interest loans so that people in low-income countries can invest in their businesses and increase their competitiveness
- invests in infrastructure, such as the construction of transport and water systems
- provides funding for developments that assist countries with trade (port and road developments)
- trains people from partner countries in areas related to global trade, including agricultural trade
- sends expert business personnel to help countries develop their businesses' international competitiveness.

How is our work in this priority promoting health and wellbeing, and human development?

By investing in infrastructure (such as transport infrastructure), the Australian Government may help partner countries improve their levels of global trade. Increased global trade may lead to an improved economy and more job opportunities for citizens, and these opportunities can contribute to increased incomes and a greater ability to afford health care. This can contribute to an environment where people can develop to their full potential. Contributing to

increased levels of global trade and an improved economy for a partner country may also promote the mental health of the citizens in that country, as it may reduce levels of concern about future prosperity. When a country's economy is performing well, this generally leads to greater opportunities for employment and money that can be spend on resources such as health care and education.

CRITICAL FRIEND

Ask the person next to you to list the six Australian aid priorities. Ask them to choose one priority and provide examples of what DFAT does in the area of this priority. Finally, get them to make a link between this work and how it contributes to improved levels of health and wellbeing. Once they have had a go, get them to quiz you.



Figure 11.23 Women from a local village in Timor-Leste working on a Roads 4 Development project

Table 11.3 Summary of Australian aid priorities

Priority	Description
Gender equality and empowering women and girls	The Australian Government has three priorities that guide its work on gender equality: - to enhance women's voices and influence in decision-making, leadership and peace-building - to promote women's economic empowerment - to end violence against women and girls.
Agriculture, fisheries and water	The Australian Government is committed to assisting countries in Australia's region to improve water and food security.
Building resilience: humanitarian assistance, disaster risk reduction and social protection	The Australian Government continues to work with countries to reduce disaster risks and promote preparedness. The aid program will strengthen social protection, by providing 'safety nets' in the face of shocks and help build the resilience of countries and communities, particularly those in Australia's region.
Education and health	The Australian Government works with countries to make their health and education systems accessible, equitable and affordable.
Effective governance; policies, institutions and functioning economies	The Australian Government works with governments that are seeking to become more effective and offers expert personnel and advice to help improve the day-to-day functioning of these societies. Effective governance can provide the foundations for economic growth, private sector investment and trade.
Infrastructure, trade facilitation and international competitiveness.	This priority aims to increase employment opportunities and average incomes in low-income countries by promoting economic development. It focuses on growing the private sector and this is supported by efforts including investment in infrastructure, trade facilitation and international competitiveness.

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Review and reflect

- 1 Name the six Australian aid priorities, and give an example of how the Australian Government contributes to each priority.
- 2 Outline how Australia's efforts in one of its aid priorities could contribute to achieving a Sustainable Development Goal.
- 3 Describe how the Australian Government may use aid work to promote regional stability in the Pacific.
- 4 Choose an Australian aid priority and explain how the work of the Australian Government in this area may promote health status around the globe.

Australian aid partnerships

The Australian Government recognises that partnerships with a wide range of groups are essential for an effective aid program. Partnerships assist DFAT to meet its objectives and complete work in alignment with its priorities, as they ensure that suitable support for the department can be sourced as required. Table 11.4 summarises the four main types of partnership that DFAT engages in, and gives an example of the type of work achieved by such partnerships.



Figure 11.24 The Fairtrade ANZ logo: The Australian Government's aid program works with this private sector organisation.

Table 11.4 DFAT's types of partnership

Type of partnership	Description	Example
Partnerships with the private sector	Partnerships with the private sector are an important way for DFAT to achieve its aid and development objectives. Such partnerships can help the aid program to maximise its overall development impact. Private sector organisations that are already working with the Australian aid program include Westpac, ANZ and Fairtrade Australia and New Zealand (ANZ).	Working in partnership with Fairtrade ANZ, the Australian Government is improving productivity along food and agriculture supply chains and building demand from consumers for ethically-sourced products. The DFAT partnership supports Fairtrade ANZ to build demand in the Australian domestic retail market for ethical and sustainable products, and builds the capacity of smallholder producers in the region to supply products.
Bilateral partnerships	The Australian Government has bilateral partnerships with many other countries around the world. Through these partnerships the impact and reach of Australian aid is enhanced and DFAT can learn from and leverage other countries' experiences and resources to achieve its development objectives.	Australia has a strong bilateral partnership with Papua New Guinea. In 2014–15, Australia assisted with the construction of 80 double classrooms, 40 teacher houses and 48 sanitation and washing blocks for boys and girls, in areas of need identified by provincial authorities.
Partnerships with multilateral organisations	Multilateral organisations like the United Nations or World Bank extend the reach of Australia's aid program as their large size enables them to undertake projects on a scale that would not be possible for donors such as Australia.	In 2014–15, Australia provided \$157.1 million to the United Nations Development Programme (UNDP). UNDP is the global development network of the United Nations. Australian funding to UNDP contributed to 750 000 people (51% women) in 22 countries gaining access to legal aid services in 2014–15.
Partnerships with non-government organisations (NGOs)	NGOs such as CARE maximise the impact and reach of Australian aid. NGOs often have strong connections to local communities and can therefore provide access to areas that others don't or can't reach. NGOs often have comprehensive knowledge of poverty in particular contexts and deep development expertise, both of which benefits the Australian aid program.	Thanks to the Australian Government, young people in Afghanistan's Badghis Province are gaining access to literacy skills and vocational training. Through the support of DFAT, 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.

Case study

A life-changing toilet

Can you remember the first time you saw a toilet? Noy does. 'I felt confused, and shocked. I thought, where does it go?!' Noy lives in a remote village in Laos, up until three years ago the village did not have toilets. The health of this community was poor – people got sick regularly, suffering from diarrhoea. Noy remembers this sickness well. 'I got sick and vomited and had a terrible stomach ache.'

Australian NGO, Plan International, and partner government staff met with the whole community and mapped out all the places where people defecate in and around the village, and showed how it can end up in the water they drink and wash in. This is part of a participatory community mobilisation approach called Community Led Total Sanitation. Community members attended sessions on the importance of basic hygiene practices like hand-washing before eating and defecating in the toilet (rather than in the open field or in the river).

For Noy, incorporating daily changes like washing her hands every day, and using the toilet into her routine wasn't hard. 'It was easy – because it's about life,' she says. 'I want my village to be healthy, and to stay healthy.'

Noy's toilet has become her pride and joy, 'Before we had the toilet we had to go out in the open, sometimes at night. We'd be scared of the dogs and the dark.' Now she has a safe and private place.

The Plan International Australian project is jointly funded by the DFAT Australian NGO Cooperation Program (ANCP). The project works across four Districts in Laos and assist with toilets for community members and schools.

Extract from Department of Foreign Affairs and Trade 2016, 'A life-changing toilet', 14 January 2016, <http://dfat.gov.au/aid/who-we-work-with/ngos/ncp/news/Pages/a-life-changing-toilet.aspx>

Case study questions

- 1 Identify the partnership in this case study. Justify your answer.
- 2 Describe how the partnership you identified in Question 1 has contributed to improving health and wellbeing for this remote village in Laos.
- 3 Outline how the outcome of this program might not have been possible without the partnership you identified in Question 1.



Courtesy PLAN International

Chapter summary

- The World Health Organization (WHO) is the health branch of the United Nations. The goal of WHO is to build a better, healthier future for people all over the world.
- The six WHO leadership priorities are:
 - 1 Universal health coverage – ensuring health care is accessible and affordable for all people, regardless of their financial status.
 - 2 International Health Regulations – member countries, guided by WHO, are required to monitor, report and respond appropriately to outbreaks of certain communicable diseases, e.g. Ebola and avian flu.
 - 3 Increasing access to medical products – ensuring essential, high-quality and affordable medical technologies are accessible for all.
 - 4 Social, economic and environmental determinants – action is required across the range of factors affecting health, such as safe water and sanitation, poverty and education, to improve health outcomes and healthy life expectancy for people.
 - 5 Non-communicable diseases – the capacity of health systems to support the needs of the population is threatened by the increasing instances of non-communicable diseases in both developed and developing nations.
 - 6 Health-related Sustainable Development Goals (SDGs) – maintaining and building on the improvements that have been made towards the 2015 MDGs, including reducing child mortality, improving maternal health and combating HIV/AIDS, malaria and other diseases.
- There are three main types of aid:
 - bilateral aid – the government of one country provides aid to the government of another country
 - emergency aid – aid that is rapidly deployed to help a population in crisis
 - multilateral aid – the governments of multiple countries contributed aid to international organisations, that then distribute the aid.
- Non-government organisations also provide aid.
- Australia's aid program focuses its aid efforts on areas close to the Australian borders in the Asia-Pacific region.
- The Australian Government's aid is directed into six main areas:
 - 1 Gender equality and empowering women and girls
 - 2 Agriculture, fisheries and water
 - 3 Building resilience: humanitarian assistance, disaster risk reduction and social protection
 - 4 Education and health
 - 5 Effective governance, policies, institutions and functioning economies
 - 6 Infrastructure, trade facilitation and international competitiveness

Exam-style questions with sample answers

- 1 List one WHO priority and outline how it may reduce the rate of maternal deaths in low-income countries. **(3 marks)**

Sample answer: Universal health coverage (1 mark). This priority relates to having health systems with well-trained staff and adequate resources to treat a range of health needs (1 mark). Universal health coverage in low-income countries will allow women who are pregnant to access appropriate treatment if pregnancy complications arise, and this may prevent their death, thereby lowering the rate of maternal deaths (1 mark).

- 2 Describe how the WHO priority 'Non-communicable diseases' could contribute to improved health and wellbeing in a global context. **(3 marks)**

Sample answer: This priority involves WHO working to educate people about the lifestyle choices that lead to non-communicable diseases (1 mark). For example, WHO is working to educate people about the risks of tobacco use. This may contribute to improved physical health as lower rates of smoking would contribute to the improved functioning of the respiratory and cardiovascular systems of people globally (2 marks).

Questions for you to practise

- 1 Describe one WHO priority and outline how it may increase health-adjusted life expectancy in low-income countries. **(3 marks)**
- 2 Outline how two WHO priorities can work together to improve levels of health in a low-income country. **(3 marks)**
- 3 List two disadvantages of emergency aid. **(2 marks)**
- 4 Outline the six priorities that are taken into account when allocating the Australian aid budget. **(6 marks)**

Chapter 12: NGOs and effective aid programs

Key knowledge

- 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

- 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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Key terms

- acquired immunodeficiency syndrome (AIDS)
- food security
- gender equality
- sanitation
- social action
- human immunodeficiency virus (HIV)
- non-government organisations (NGOs)
- NGO aid

In this chapter

NGOs that promote health and wellbeing, and human development	page 354
Save the Children International.....	page 356
CARE Australia.....	page 358
Oxfam Australia.....	page 360
International Committee of the Red Cross	page 362
How can NGOs promote health and wellbeing and human development?	page 366
Effective aid programs	page 367
Appropriateness	page 367

Affordability	page 368
Equity	page 369
Effective aid programs that address the SDGs	page 370
Plan International Australia – Early Childhood Care and Development Program	page 370
World Vision’s Permaculture Project	page 371
CARE Australia SAFE Motherhood Program	page 372
Social action and health and wellbeing	page 374

NGOs that promote health and wellbeing, and human development

non-government organisations (NGOs) legally constituted organisations without the participation or representation of any government

Thousands of **non-government organisations (NGOs)** around the world seek to improve the lives of people facing poverty and hardship. NGOs are generally not-for-profit organisations that are independent of state and international governments. They usually comprise a board that oversees their work and are funded by donations or partnerships with other sectors. Examples of NGOs in the international aid arena include Save the Children International, World Vision, Oxfam, CARE, the International Committee of the Red Cross and Plan International.

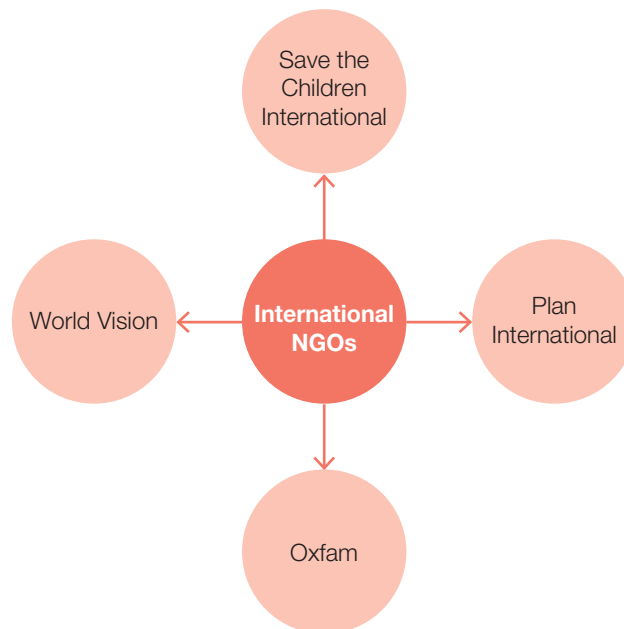


Figure 12.1 Some examples of international NGOs

non-government organisation (NGO) aid the aid provided by NGOs, often focusing on communities; NGOs take differing approaches to aid, including specific projects or programs, emergency aid, volunteering, education and development

The aid provided by NGOs, often referred to as **non-government organisation aid (NGO aid)**, is often directed towards specific projects or programs in low-income countries. This aid usually focuses on community development and participation, and targets the direct needs of the people with whom the organisations are working. Because NGOs often employ local people in their work, they tend to have a greater understanding of the needs of a community and are therefore better able to meet these needs than other organisations.

Many NGOs within Australia provide assistance to those in need, both locally and overseas. Many of these organisations receive government funding through the Department of Foreign Affairs and Trade (DFAT), but a large portion of their operating costs is covered by donations. NGOs are a vital part of Australia's aid program as they often provide for specialist needs and have networks within local communities. Examples of Australian NGOs are CARE Australia, World Vision Australia, Save the Children Australia, Australian Red Cross, Oxfam Australia and PLAN International Australia.

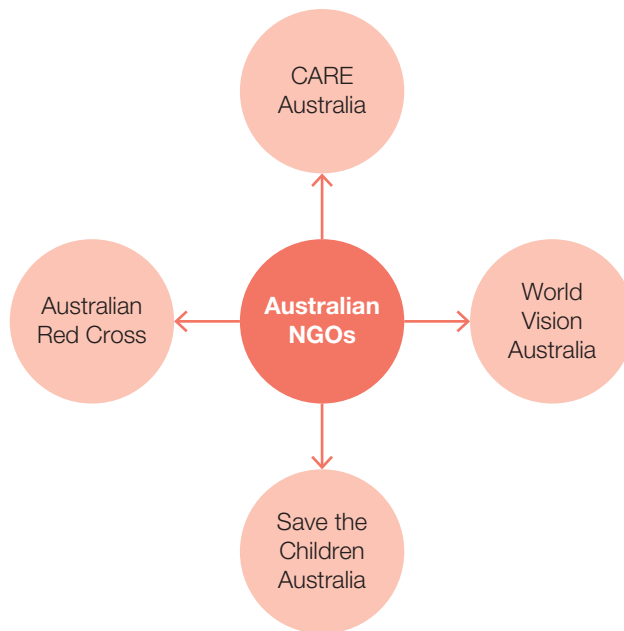


Figure 12.2 Some examples of Australian NGOs



Fairfax Syndication/Louie Douvis

Figure 12.3 Australian Red Cross workers conduct a charity drive

This chapter looks in detail at the work of four of these organisations – two Australian (CARE Australia and Oxfam Australia) and two international (Save the Children International and the International Committee of the Red Cross) – and their impact on health and wellbeing, and human development.

Save the Children International

Save the Children International is an NGO that has been leading global action on children's rights for almost 100 years. The Save the Children Fund was first established in 1919 by Eglantyne Jebb, who wanted to feed children facing starvation after World War I. Following this, the organisation grew and took on issues such as promoting and keeping countries accountable for upholding children's rights. In 1977 a number of Save the Children organisations formed an alliance, leading to a single global Save the Children movement. In more recent years, Save the Children has participated in large global humanitarian operations, such as the response to the Indian Ocean tsunami (2004), where their response program received US\$272 million in funding. The organisation's work directly reaches approximately 50 million children around the world each year.

The vision of Save the Children is a world in which every child has the right to survival, protection, development and participation. It works to achieve rights for all children, particularly the most deprived and marginalised, and it campaigns for other groups to do the same. Save the Children defines the most deprived and marginalised children as those least likely to survive, learn and be protected. The organisation acknowledges that there are many factors that influence whether a child is deprived and marginalised, including income, poverty, gender, geography, ethnicity or caste, and disability. Often, it is a combination of these factors that deny children the right to survive, learn or be protected.

Save the Children recently stated its ambition for children by 2030:

We will do whatever it takes to ensure that all children survive, learn and are protected by 2030.

- No child dies from preventable causes before their fifth birthday. [survive]
- All children learn from a quality basic education. [learn]
- Violence against children is no longer tolerated. [protected]

Extract from Save the Children, Global Strategy: Ambition for children 2030 and 2016-2018 strategic plan', <https://www.savethechildren.net/sites/default/files/Global%20Strategy%20-%20Ambition%20for%20Children%202030.pdf>, p.6

This 2030 ambition is based on the following statistics. Of the 2.6 billion children in the world:

- each year 5.9 million aged under 5 years die from preventable causes (linked to the 'survive' goal)
- fifty-nine million were not in school (75% of refugee children). Of those who are in school, 250 million were not learning reading and maths (linked to the 'learn' goal)
- up to 1.5 billion experienced violence each year (linked to the 'protected' goal) (source: Save the Children n/d).

When evaluating the effectiveness of an aid organisation, it is often useful to look at its reach and achievements. Save the Children's achievements in 2016 included:

- Over 56 million children were reached directly through the work of the organisation and its partners.
- In 2016, Save the Children responded to 99 emergencies in 60 countries, 80% caused by natural disasters. As well as saving lives, Save the Children helped millions more children and families to rebuild their lives and prepare for future disasters.



Weblink

INVESTIGATE

Go the Save the Children website and see a map of where the Fund was working last year. In how many countries was the Fund active?

- More than 600 000 homes were destroyed when two earthquakes struck Nepal. Shelter kits were distributed to nearly 10 000 families in the region.
- By July 2016, 15 000 displaced children had reached Italy, 90% without parents or relatives. Save the Children provided essential child protection services and child-friendly spaces along the migrant route. Save the Children also worked in refugee camps in Greece, providing food and support to families. It also ran safe spaces for children where they could learn, play and recover from the distressing events they had witnessed.
- The organisation's work led to 8.4 million life-saving interventions, including immunisations and treatment for malaria, pneumonia and diarrhoea, for children aged under five, in 36 countries.
- The organisation ensured that skilled birth attendants were present at more than 874 000 births, giving mothers and babies the best start.
- The organisation helped train 216 000 health workers in 44 countries. Around half of these were in Nepal, Bangladesh, Nigeria, Afghanistan and Ethiopia. (Save the Children Australia 2016)

Save the Children works with many partners to achieve its vision. These partners provide funding and resources to help the organisation achieve large-scale and long-term change around the globe. They include organisations such as Accenture, Bulgari, GlaxoSmithKline, IKEA and IKEA Foundation, Johnson & Johnson and TOMS.



Getty Images/AFP/Ishara S. Kodikara

Figure 12.4 Save the Children distributes shelter kits in Sindhupalchowk district, Nepal, where 80% of homes were destroyed by earthquakes.

Protecting Children of Sex Workers Program

In Bangladesh, Save the Children is working to protect the children of sex workers and children affected by HIV and AIDS. ...

Save the Children works in partnership with the Bangladesh and Australian governments to deliver this life-changing program. We provide training on child rights for children, parents, teachers, and government to improve the health of the most vulnerable children, and protect them from abuse.

Why protecting children of sex workers is important

The children of Bangladeshi sex workers have hard childhoods. Discrimination, poverty and violence feature predominantly in their lives, and illness and death rates are high.

Many lose their parents to HIV and AIDS, subjecting them to trauma, malnutrition and limited education opportunities. This experience also makes them more vulnerable to sex trafficking, homelessness and HIV and AIDS.

Save the Children's Protecting Children of Sex Workers program

We're helping to build community-based child protection activities that support vulnerable children and help parents protect their children.

We're establishing child protection committees in local communities, holding community meetings and information sessions, and creating child-friendly spaces and youth groups to give vulnerable children a space to play and learn. And, we're creating peer groups for sex workers to learn from each other about protecting their children.

How do we know we are making a difference?

In the communities where we work, a series of meetings targeted at raising awareness about child rights mobilised more than 400 community members to help advocate for child rights. Almost 200 teachers also learnt about the importance of protecting children.

Mothers and caregivers who received training in positive parenting, child protection, nutrition and health have reported a change in how they keep children safe from harm.

Children have been trained on their rights and equipped with life skills that allow them to take ownership of their future. They've also been linked with Government health centres where they have received basic healthcare, immunisations and counselling.

Extract from Save the Children, 'Helping children of sex workers create better futures', <http://www.savethechildren.org.au/our-work/program-selector/protecting-children-of-sex-workers-in-bangladesh>

CARE Australia



CARE Australia aims to fight global poverty. It is part of an international organisation that was founded in 1945 and has branches in countries around the world, including France, Peru, India, Denmark, Japan and the USA. In 2015, CARE's activities benefited over 65 million people from 95 countries. All CARE branches, including CARE Australia, have a special focus on empowering women and girls and ensuring that there is ongoing and long-lasting change to their lives and in their communities. In 2015, CARE Australia directly helped 2.3 million people in 23 countries, including in response to 11 emergencies.

CARE Australia is a significant player in the international aid arena, as highlighted by some of its achievements. In 2010–15, CARE Australia:

- provided aid to an average of 3.1 million people annually in 23 countries
- responded to an average of 10 humanitarian emergencies each year
- focused 90% of its long-term programs on women's empowerment
- allocated 88.8 cents from every \$1 donated to aid programs (CARE Australia 2016).

CARE Australia's mission is: 'to serve individuals and families in the poorest communities in the world' (CARE Australia 2016, p.3). It works with the Australian Government's aid program.

CARE Australia aims to:

- strengthen capacity for self-help
- provide economic opportunity
- deliver relief in emergencies
- influence policy decisions at all levels and
- address discrimination in all its forms.

This mission is achieved through various projects, such as CARE Australia's response to the Syrian Refugee Crisis.

Response to the Syrian Refugee Crisis

Since conflict broke out in March 2011, more than 12 million people are in need inside Syria and a further four million have been forced to seek refuge in neighbouring countries.

To date, CARE has helped more than one million people in Egypt, Jordan, Lebanon, Syria and Turkey.

Women and children make up three-quarters of the refugee population.

Turkey is now the largest refugee-hosting country in the world, and CARE is coordinating with the Turkish authorities and other organisations to provide the newly arrived refugees with food, blankets, clothing and hygiene items. CARE aims to assist 30 000 refugees in Turkey.

In Egypt, CARE is assisting refugees, particularly those at risk of sexual gender-based violence, providing legal and psycho-social support as well as transition shelter in emergency cases. CARE has reached 15 200 Syrian refugees in Egypt so far.

More than 1.18 million Syrians are currently seeking refuge in Lebanon. Of these refugees, 55 per cent live in poor shelters, such as informal tented settlements and substandard buildings.

CARE is providing support by improving living conditions at informal tented settlements, rehabilitating substandard houses, and advocating for support within the donor community.

Syrian refugees are also being assisted with basic needs such as cash assistance, food parcels and World Food Programme vouchers, and access to water and **sanitation**. Over 150 000 Syrian refugees in Lebanon have been assisted so far.

In Jordan, CARE is working with those living in urban areas who need support to pay for basic living costs including rent and food. We also run vocational and livelihood training programs in collaboration with government and local partners.

We have reached more than 580 000 people in Jordan, providing cash assistance, essential relief items and vital information on how to access healthcare and social support. In April, a vaccine campaign resulted in more than 370 000 children under five being vaccinated against polio.

sanitation the hygienic means of promoting health through prevention of human contact with hazardous waste, for example faeces

Extract from CARE Australia 2016, Annual report 2015, https://www.care.org.au/wp-content/uploads/2015/11/000061_CARE_Annual_Report_20160105_FINAL_WEB.pdf, p.17



CARE/Sabine Wilke

Figure 12.5 A CARE Australia worker in an immigration camp



Oxfam Australia

Oxfam Australia, one of Australia's largest international development organisations, was created by a merger between two leading Australian international development agencies: Community Aid Abroad and the Australian Freedom from Hunger Campaign, founded in 1953 and 1961 respectively. Oxfam Australia is one of 17 Oxfam organisations around the world that together form the Oxfam Confederation. This Confederation has developed the Oxfam Strategic Plan, which contains goals that reflect Oxfam's priorities until 2019. Oxfam Australia has developed its own strategic plan, with 'six goals to change the world':

- 1 The right to be heard
- 2 Gender justice
- 3 Saving lives
- 4 Sustainable food
- 5 Fair sharing of natural resources
- 6 Finance for development.

Oxfam's vision is of 'a just world without poverty'. It seeks a world where there are human rights for all, and everyone is valued and treated equally. Oxfam believes that each person should have the power to make decisions that affect their life, and should assume their responsibilities as a citizen of the world. Oxfam achievements in 2015–2016 include the following:

- 500 000 people received food, water, shelter, toilets and hygiene kits in the first 12 months after the Nepal earthquakes
- 11 500 people were tested for HIV in Zimbabwe
- 390 000 people in India were educated about violence against women and girls and encouraged to take action to prevent it
- 16 000 people in South Africa now have access to toilets and hand-washing stations (Oxfam Australia 2017).

Oxfam Australia has a long history of providing support and aid to those in need. In 2015–2016, it reached more than 2.5 million people – around half through its long-term development work, and assisting the other half of that number affected by disaster (Oxfam 2017).

Examples of Oxfam's partnerships

Oxfam works with many partners, including Deloitte, Thankyou Group, JB Hi-Fi and Studio Thick.

Deloitte

For more than 17 years, Oxfam has received the strong support of Deloitte and helped us make [a] positive and enduring impact in our fight against poverty. With more than \$3 million in contributions, Deloitte has answered our call in countless emergencies, including the Nepal earthquake appeal in 2015 and, most recently, for Fiji's Cyclone Winston. Through their extensive pro-bono work, Deloitte ensures Oxfam remains a relevant force for change. Oxfam regards Deloitte as the best practice example of corporate and not-for-profit partnership.

Thankyou Group

The last 12 months have seen Thankyou Group continue to grow their support for Oxfam and other leading development agencies, donating \$3.7 million. Through market-leading products, transparency of impact and a clear vision, Thankyou Group continue to innovate at the forefront of the social enterprise sector. Oxfam is proud to continue working with Thankyou Group to help us mobilise the power of people against poverty.

JB Hi-Fi

JB Hi-Fi empower their staff to make a real difference through their Helping Hands program, which allows employees to donate to a diverse range of charities and to have that donation matched for double the impact. JB Hi-Fi have supported Oxfam to launch OXJAM, the month-long party against poverty, in 2015 and continue to be a committed and passionate supporter of Oxfam's work.

Studio Thick

Studio Thick represent an organisation 100% committed to creating positive social impact through their operations. By donating 5% of their profits to Oxfam Australia, they are showing their passion to create a better world for all. In addition, they continue to support Oxfam with their expertise and are an inspiring and thought-leading partner of Oxfam.

Extract from Oxfam Australia 2016 Annual Report, <http://resources.oxfam.org.au/pages/view.php?ref=1773&k=7a4fb312e4>, p.38

Oxfam Australia's Water for Life initiative

Oxfam is providing clean water, sanitation and hygiene education in some of the world's poorest countries. ...

Running taps, working toilets, clean, safe drinking water and soap – in Australia, they're things people can take for granted. Yet around the world, millions of poor people get sick or die each day because they must go without these necessities of life.

Almost 900 million people in the world do not have access to clean, safe drinking water, while 2.6 billion live without basic sanitation. Across the globe, more than 6000 people die each day from diseases caused by dirty water – two-thirds are children. (World Health Organization)

Oxfam's water engineers and public health specialists are known internationally for the speed and efficiency with which they can help provide large-scale water supplies, essential sanitation facilities and hygiene improvements, even in the most difficult circumstances. ...

Emergencies

When disaster strikes, Oxfam acts quickly to save lives by delivering clean water and sanitation – from simple solutions like distributing buckets, jerry cans, soap and water purification tablets, to building and rehabilitating water supply systems, providing tanks, delivering clean water and constructing toilets.

This goes hand-in-hand with educating people about the importance of washing hands, collecting water in clean containers, storing water safely and purifying water for drinking and cooking.

'Clean water, sanitation and hygiene promotion are the most important elements in controlling the spread of infectious disease following a humanitarian disaster,' says Praphulla Shrestha, Oxfam Australia's Water and Sanitation Technical Advisor.

'The first step always involves talking to the people in the camps about how poor hygiene practices can contaminate water supplies and make it unsafe to drink. Then we can start to test the water that people are drinking.'

Praphulla emphasises that the key to saving lives is to get trained water, sanitation and hygiene experts into the disaster area as quickly as possible. And we have these experts on standby around the world to provide fast, effective and innovative solutions.

Oxfam was one of the first aid agencies to use specialised water treatment units that purify vast amounts of water in a very short time – up to 6000 litres an hour. Other agencies began using similar technologies following Oxfam's example. ...

One of Oxfam's greatest water innovations is also one of its most simple – the Oxfam bucket, which we distribute to displaced people during emergencies. Winner of a Millennium Design Award, the bucket is designed to be light, durable, and keep water clean and safe. It stacks, is easy to transport, has a tight-fitting lid to keep out the

dirt and prevent spillage, and an insertable tap to prevent collected water from being recontaminated. The plastic is UV resistant to prevent algal build-up.

Vasantha Nilaweera was one of thousands of displaced people living in temporary camps in Sri Lanka after the 2004 tsunami who experienced Oxfam's comprehensive water response.

'Oxfam gave training to everyone in safety and hygiene,' Vasantha recalls. 'They gave us water filters and we took water from two separate tanks – one for drinking and one for washing. People from Oxfam also came to check the quality of the water.'

Long-term solutions

In the context of our long-term development work, Oxfam provides water, sanitation and hygiene solutions that are tailored to local needs, conditions and technologies.

We drill boreholes, sink wells, install tanks, pumps and tap stands, construct entire gravity-fed water supply systems and small-scale irrigation schemes, build toilets, set up household water treatment solutions, promote the production and use of soap and promote safe hygiene practices in homes and schools.

In Laos for example, Oxfam built a gravity-fed water system to carry water from a mountain spring to a village, two kilometres away. Oxfam then provided families with training in safe hygiene practices, especially washing hands with soap at key times.

One village member, Sou Yang, can see the benefits. 'Before we had the water supply, our children used to get skin diseases and eye irritations. There was also lots of diarrhoea and cholera. Now that we use the clean water system we don't have problems anymore.'

'Our choice of water, sanitation and hygiene technology is decided in consultation with the poor communities where we work,' [Oxfam worker] Jane Bean says. 'We prioritise simple technologies, that communities can afford, and that women and girls can operate and maintain.'

Extract from OXFAM Australia, 'Water for life', <https://www.oxfam.org.au/what-we-do/water-sanitation-and-hygiene/water-for-life/>



Figure 12.6 A young girl filling a container with water from a pump

International Committee of the Red Cross

The International Committee of the Red Cross (ICRC) was created in 1863 and since this time has had the sole objective of securing protection and assistance for victims of armed conflict and strife. It is an independent, neutral organisation that acts in response to emergencies and also promotes respect for international humanitarian law and its implementation in national law.

The work of the ICRC is based on the Geneva Conventions of 1949. Today, all countries are bound by the four Geneva Conventions of 1949, which, in times of armed conflict, protect wounded, sick and shipwrecked members of the armed forces, prisoners of war and civilians.

The ICRC leads the International Red Cross and Red Crescent movement, a collection of approximately 190 individual bodies. These organisations are guided by the following seven principles.

- *Humanity*: to prevent and put an end to suffering and bring assistance without discrimination, wherever it may be required.
- *Impartiality*: to not discriminate on the basis of nationality, race, religious belief, class or political opinion.
- *Neutrality*: to assist others without taking sides.
- *Independence*: to govern one's self in order to at all times act in accordance with the principles of the Red Cross movement.
- *Voluntary service*: to assist others without seeking personal gain.
- *Unity*: only one Red Cross or Red Crescent Society is to exist per country, and it will be open to all.
- *Universality*: the International Red Cross and Red Crescent Movement is worldwide and all societies have equal status, duties and responsibilities.



Getty Images/UiG/Gogong

Figure 12.7 Red Cross and Red Crescent logos



Getty Images/AFP/Mahmoud Taha

Figure 12.8 An ICRC car in action in Syria

The ICRC in action: Mali

Enduring terrible hardship, often with no means of survival or even shelter: that is the reality for thousands who have fled widespread violence in northern Mali [situated in western Africa] in recent months. Their plight has prompted the distribution of 1400 tonnes of food, as well as seed and other essential supplies, in and around Mopti, Timbuktu, Gao and Kidal by the International Committee of the Red Cross (ICRC), working together with the Mali Red Cross and community leaders.

'We're very worried about the violence. It's taking its toll not only on these communities, but on safe access for humanitarian workers too, thereby depriving people of crucial assistance,' said Christoph Luedi, head of the ICRC delegation in Mali. 'Neutral and impartial humanitarian work must be allowed to go ahead so that those who are destitute receive the help they need.'

Rice, beans, oil and other food supplies have been distributed to some 63 000 people in recent weeks. Almost 18 000 people who have returned to their homes in the region have received mosquito nets, cooking utensils, hygiene items and other essentials.

'This aid meets the most pressing needs, including those of communities which are hosting displaced people. These host communities are themselves struggling to make ends meet and their generosity is being severely tried,' said Jean-Pierre Nereyabagabo, who runs the ICRC's economic security programmes in Mali.

The ICRC also provided rice, millet and sorghum seed to 100 000 subsistence farmers, while nearly 900 000 head of livestock have been vaccinated and treated for disease. The ICRC works in close collaboration with Mali Red Cross volunteers, community representatives and public utilities.

International Committee of the Red Cross (ICRC) 2015, 'Mali: Over 250,000 people receive aid in north', News Release, 29 June 2015, <https://www.icrc.org/en/document/mali-over-250000-people-receive-aid-north>



ICRC

Watch a short video from the ICRC about what goes in an ICRC Emergency Aid Parcel for Iraq. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.



INVESTIGATE

Learn more about the ICRC on their website. Visit <http://hhdvce3and4.nelsonnet.com.au> to access the weblink.



Alamy Stock Photo/frans lemmens

Figure 12.9 Food being distributed in Mali

Case study

NGO aid in action: Save the Children Australia's Children of Uruzgan (CoU) Program

In Uruzgan one-third of the population do not have access to any health services. Less than half of children under the age of two have received basic immunisations. Every year around 300 mothers and more than 3000 children under the age of five die. Nine out of 10 women give birth at home without any skilled support.

There are also challenges for children's education. For three decades, children have had few opportunities to access formal education. It is estimated that 81% of children aged 7–13 in Uruzgan do not attend school, and of those students that do attend, less than 10% are girls.

The Children of Uruzgan (CoU) program is a flagship partnership between the Australian Government (AusAID) and Save the Children Australia. It is one of the most ambitious aid projects ever undertaken by an Australian NGO.

CoU is a four-year program aimed at enhancing access to, quality of and use of basic health and education services for children and their families in the six districts of Uruzgan province, Afghanistan. ...

The CoU program will improve women's and children's health by increasing access to and quality of essential maternal and child health and nutrition services. CoU will train community health workers, which will increase the capacity of communities to address and prevent malnutrition and child illnesses, such as pneumonia and diarrhoea, which claim the lives of so many children under five. CoU will also train midwives to ensure women have access to skilled birth attendants during childbirth. ...

The CoU program will improve access to and quality of basic education for children, particularly girls, by building community schools, increasing non-formal education opportunities and improving school management and teaching skills. CoU will also train female teachers, which is essential to encouraging girls to attend school. Literacy and early childhood development groups will also be established. ...





A key part of the program is to develop and build the capacity of local communities. CoU will train 30 community leaders and nearly 2000 members of health councils and parents' associations to become advocates on the importance of health and education in their communities. CoU will also work with 300 communities to develop their own community projects.

Save the Children

Case study questions

- 1 Name the NGO involved in this case study, and provide examples of the aid that it is providing.
- 2 Describe how the aid described in the case study promotes health and human development for the people receiving it.
- 3 Outline how the aid described in the case study can be considered sustainable.
- 4 Give an example of where the NGO in this case study may receive funding to carry out its work.



Alamy Stock Photo/vario images GmbH & Co.KG

Figure 12.10 Children in an Afghan classroom

Review and reflect

- 1 Name three NGOs involved in aid work, including one Australian NGO.
- 2 Describe two characteristics that differentiate NGO aid from other types of aid.
- 3 Give an example of aid that may be provided by an NGO, and outline how the aid in your example promotes human development.
- 4 List two limitations of relying on aid from an NGO.
- 5 Give an example of aid that may be provided by an NGO, and outline how the aid in your example promotes health and wellbeing.
- 6 Discuss how an NGO can work with WHO in setting up health-related development programs.

Learning field

Profile of an Australian aid worker

Just off a plane from South Sudan, aid worker Libby Bowell reflects on her career path and what it takes to work for Red Cross overseas.

How did you get into aid work?

Back in the 90s I was an emergency and intensive care nurse in Newcastle [NSW]. A couple of remote area nurses came to work in the emergency department and I was immediately drawn to what they did. Shortly after, I moved to the Northern Territory and began working as a remote area nurse. From there it seemed like a natural progression to the international aid world.

What's the connection between bush nursing and humanitarian aid?

Remote area nursing combines primary healthcare and community development. It's working in a community, living in a community, being part of a community. There's also the isolation, the distance to more definitive care, the lack of resources and just living a long way from your family. So it's a really good grounding place to get experience for



AAP Image/Australian Red Cross

Figure 12.11 Aid worker Libby Bowell



> international field work.

Tell me about some of your missions with Red Cross.

I started with Red Cross in Aceh after the Boxing Day tsunami. Then I was part of an emergency team in Yogyakarta after an earthquake. I've been away pretty much every year since – Kenya, PNG, Sierra Leone, Haiti after the earthquake and the Philippines after Typhoon Haiyan. I've worked in the Solomon Islands several times over a four-year period, and just now in South Sudan.

What were you doing in South Sudan?

There was a cholera outbreak in Juba City. The Nile River runs through the country and there's almost 100 per cent open defecation across the country, so there was a concern that if the disease got out of Juba, there could be quite catastrophic consequences.

I was part of an international Red Cross team that went to assess the situation, the capacity of South Sudan Red Cross to respond, and how we could support them. There's a great network of volunteers at the community level who can deliver prevention messages – wash your hands, boil water before drinking, safe sanitation methods. We also set up oral rehydration points in communities for people who had cholera – this reduces loss of lives and severity of cases, and also helps relieve the burden on hospitals.

Why is it important to support local efforts?

Because ultimately, we're going to go home and they're going to stay and face the crisis, day in, day out. So the National Red Cross Society takes the lead and we're there to support them. And whatever we do has to be sustainable for them.

Is being an aid worker everything you expected it to be?

Truthfully, at the start I was champing at the bit to save lives. The reality is you do very little of that. I sometimes feel like an invisible helper – training, guiding, supporting – not getting in and saving the world. I think you have to accept that. ...

What kind of experience do you need to break into aid work?

You need to have done some long-term, community development stuff. It is so beneficial to understand how development works as well as what happens in emergencies. Get to know who the players are, how they work together. There are lots of opportunities with Red Cross to do training.

What personal traits do you need to succeed in this area of work?

You have to be calm, you have to be flexible and adaptable. You have to be able to break complex things down into simple terms.

What are some of the physical challenges you've faced as an aid worker?

There are usually strict security guidelines and you need to be accepting of the rules and restrictions. Life in the field is rarely comfortable, so you learn to take little things that are important to you. It's always difficult being away from family, too.

Staying well can sometimes be an issue, especially in emergencies when you work long and hard with little rest. You learn to be aware of your own boundaries.

So how did you know this was the right career choice?

I feel really comfortable with my decision to work with Red Cross because I believe in its principles. I feel well supported by Australian Red Cross. Even when it's hard, it's good. You get the opportunity to help people help themselves, and being a part of that is incredibly rewarding.

Extract from Australian Red Cross 2017, 'About us. Careers. International aid work. Stories from the field. So you want to be an aid worker?' <http://www.redcross.org.au/so-you-want-to-be-an-aid-worker.aspx>

How can NGOs promote health and wellbeing and human development?

As you have read in this chapter, NGOs are often involved in community-centred programs that contribute to the health and wellbeing of the communities they work in. Improving access to health care and promoting **food security** promote the optimal functioning of bodily systems, and this contributes to high levels of physical health. NGOs often are involved in education and skills-based programs that enable people to find work. These programs can help individuals develop their ability to interact with others, which contributes to their social health. Through such programs, community members may develop new skills that help them to recognise and manage their feelings, promoting emotional health.

food security when all people are able to obtain nutritionally adequate, culturally appropriate, safe food regularly through local non-emergency sources

NGOs may also run programs that help people to establish businesses and to manage their products and staff. Learning such skills can boost people's self-esteem and confidence in their ability to provide for themselves and their family, which can be positive for mental health. When people are able to contribute to their community through work, they often feel a sense of connection to the people and life of the community, and this can promote spiritual health.

The programs implemented by NGOs often enhance human development. As mentioned previously, NGOs are often involved in education and skill-based programs, both of which can contribute to enhancing people's capabilities and providing them with access to knowledge. People can then use these skills and knowledge to participate in decisions that affect their lives and to earn an income, which allows them to provide a decent standard of living for themselves and their family. Through work, people can contribute to the life of their community and pass on their knowledge and skills to others. This is how NGOs help to create an environment in which human development is fostered in an ongoing way.

Effective aid programs

The implementation of effective aid programs is largely responsible for increases in levels of health and wellbeing and human development around the globe. These programs tend to be delivered via bilateral, multilateral and NGO aid. These types of aid can provide assistance to a single community or multiple communities in low-income nations, to establish programs that deliver continual improvements in health and wellbeing and human development.

When considering implementing an aid program in a low-income country, many factors need to take into account in order to determine whether the program will be effective. Appropriateness, affordability and equity are three important elements to consider.

Learning tip

You may also want to consider how an aid program contributes to the three dimensions of sustainability (social, economic and environmental) to determine if it is effective.

Appropriateness

Differences in culture and way of life between different countries and groups must be considered when implementing an aid program. A successful program for a disadvantaged population in Australia cannot simply be implemented elsewhere with the assumption that it will also succeed there. Assessing appropriateness means considering the requirements of a specific community and aiming to address those needs in the aid program.

An appropriate aid program considers the following questions.

Are local community members involved in the project?

The establishment, implementation and modification of any program that affects local community members should involve them. Local input helps to enhance the skills and capacity of those involved, and gives the program greater relevance to community members. When locals have ownership over a project, it is more likely to be maintained over time.

Are the outcomes of the project what the community desires?

The program outcomes must have meaning and be important to community members, in order for them to continue to carry it out once outside assistance has been withdrawn.

Is the project culturally appropriate?

The cultural values and practices of a community must be respected in order for a project to be accepted by the local people. The project is more likely to receive continued support from the community if this is done successfully.

Are community members being educated by the project?

Educating people, both generally and regarding the management of a project, helps to ensure the longevity of a program and teaches important problem-solving skills. Education is an important part of any project, as it ensures that any issues that may arise with the project in the future can be solved by the community. Educating and empowering women in particular can be greatly beneficial for a community, as it is women who complete much of the daily work within a community.



Figure 12.12 A water pump can meet the clean water needs of a community.

Affordability

In order for a program to remain ongoing once outside assistance has been withdrawn, the community must be able to afford to continue the program. For this to be achieved, there may need to be regular government or non-government input. Most people in low-income countries have minimal dispensable income, and so, in order to achieve maximum health benefits in these countries, programs need to be free or available at very little cost. For a program to succeed, the infrastructure used in the implementation and maintenance of the project must be affordable and accessible.

An important aspect of affordability of programs is education, and the flow-on effect of work and income. With more people earning an income and a country's gross domestic product (GDP) increasing, there is greater availability of money (via taxes) for infrastructure, business support and health programs.

Equity

A program is more likely to be effective if it is accessible to all members of the community, so larger numbers of people can become involved. An equitable program considers the following questions.

Does the program involve women and girls?

In low-income countries, women and girls are often more vulnerable than men and have less access to health and education services. To achieve maximum health outcomes and build the capacities of individuals and communities, a program must involve and be accessible to women and girls.

Is the program accessible to people living in all areas?

To achieve optimum health and human development outcomes, people living in remote and very remote locations should be able to access a program without having to travel long distances. Often those with the greatest need live outside urban areas, so programs should be based in locations where all people can access and experience the program's benefits.

Is participation in the program being restricted by cost?

Access to a program should be focused on need, rather than ability to pay. This prevents the social hierarchy from affecting health outcomes, by ensuring that everyone has access, not just those who can pay for it.

CRITICAL FRIEND

Ask to the person next to you to explain the difference between appropriateness, equity and affordability. Critique their answers by comparing them to the information given in this section.

Case study

World Vision's Permaculture Project

World Vision's Australian-funded Permaculture Project is supporting families in four provinces of Sri Lanka to establish organic gardens, securing access to food, increasing livelihoods and protecting the environment. For women like Krishanthi and Mallika, the gardens are a vital source of income and nutrition for their children.

Two-year-old Chamodhya puts her tiny hands into a can to scoop out some water. She's a busy little girl as helping her mother water the garden is quite a task. After all, the home-based patch is packed with fruit and vegetables. Her mother, Krishanthi, laughs, saying: 'My garden has chillies, okra, beans, aubergines, bitter gourds, oranges, papayas, mangoes, bananas... Shall I go on?' The 30-year-old started growing her lush garden thanks to World Vision's Permaculture Project, funded by the Australian Department of Foreign Affairs and Trade (DFAT). The project establishes sustainable, eco-friendly agriculture using local resources and technology to improve farmers' quality of life.

'After my oldest daughter joined the sponsorship program, World Vision gave me some coconut, jackfruit and mango saplings as a start,' explains Krishanthi. 'I'd studied agriculture before, so I was happy to start my own home garden.'

Living in the next village is Mallika, another proud owner of a thriving domestic garden. 'I knew a little bit about gardening,

but I didn't know how to do it systematically,' says the 38-year-old. 'I've learnt how to look after a plant nursery, make organic weed-killers and fertilisers and organise the garden properly.'

To date, World Vision has introduced the Permaculture Project in eight of its Sri Lankan Area Development Programs (ADPs). For most of the island nation's rural communities, farming is the primary source of income, but the widespread use of chemicals has degraded soil fertility, slashing yields. After offering community members the knowledge and tools for organic farming, World Vision links the producers to farmer networks and agricultural specialists in the government, who provide further technical advice.

Krishanthi says: 'The training I've attended has helped me think about how I can improve my garden even more. I don't really need to visit the market that much except to buy onions and fish. I have almost every type of fruit and vegetable here.'

The project also includes livestock to enhance households' nutrition as well as their income. This year, World Vision provided dairy cows to 80 families, with the farmers able to access organic and fair-trade markets [to sell milk].

Like Krishanthi and Mallika, many Sri Lankan women have benefited from the project, with 2200 being trained to run small businesses this year alone. Deepthi Silva, manager of the ADP, observes: 'Since this project has taken root, there has been a cultural and attitude shift in terms of health and





nutrition. Women are the key to the project. Many of them were unemployed before they engaged in home gardening, but now they're very involved in every aspect of their families' well-being by skilfully managing the practical as well as the financial aspects of the project.'

For Mallika, being able to save is a huge relief. 'Since our home garden supplies almost all the vegetables and fruit my family needs,' she says, 'what I'd usually spend on buying food at the market now goes towards my children's education.' Krishanthi adds: 'Not only can I save, but I can also provide something healthy for my children to eat from my own garden all year round. And my kids are healthy. We rarely have to visit the doctor now and I believe that's because of the good, clean food they eat.'

Extract from World Vision 2015, 'Organic gardening helps families flourish in Sri Lanka', <https://www.worldvision.com.au/global-issues/work-we-do/famine/permaculture-sri-lanka>

Case study questions

- 1 Summarise the aid provided in the Permaculture Project.
- 2 Evaluate whether the Permaculture Project is an effective aid program, using the effective aid program elements of affordability and appropriateness.
- 3 Describe how the people who participate in this aid program may improve their level of human development.
- 4 Explain how this aid program could be improved. Include two examples, and justify your choice of each example.

Effective aid programs that address the SDGs

As noted by the United Nations Secretary General when launching the Sustainable Development Goals (SDGs), these goals can only be achieved if different sectors work together. There are many aid programs that address the SDGs, and these programs often involve partnerships across many sectors, in most cases enhancing their effectiveness. Three such programs are outlined below. The purpose of each program and the SDG(s) it addresses are detailed, along with the program's implementation and the partnerships involved, and an example of how it contributes to promoting health and wellbeing and human development.



Plan International Australia – Early Childhood Care and Development Program

SDG 4: Quality education

Purpose

Each year approximately 58 million children around the world miss out on primary school education, with up to 40% of these children likely never to enter a classroom. Plan recognises that a good start to life includes a quality education, as this promotes good health and wellbeing and contributes to enhanced levels of human development. Plan is working to remove the barriers to children receiving education, such as poverty, remoteness, disability and gender-based discrimination.

Implementation

Plan International Australia's Early Childhood Care and Development (ECCD) Program promotes children's right to development, through play, parenting programs and children's transition to primary school and beyond. The ECCD program involves:

- providing support for parents participating in parenting education sessions, helping to improve their knowledge and skills to support their children's development
- developing and piloting a teacher training resource to help improve early literacy among children, particularly those in ethnic minorities and remote communities. Teacher training methodologies are developed that will allow children to explore their mother tongue through, for example, dance, constructive play, puppetry, song, storytelling and so on
- ensuring that early learning and education is culturally appropriate, inclusive and gender sensitive, and accessible to all girls and boys. Discrimination and attitudes that limit girls' access to early learning and education are addressed
- providing financial support in the form of grants from donors, including DFAT and the New Zealand government. (PLAN International n/d)

How could the ECCD program promote health and wellbeing and human development?

- Education enhances literacy, which leads to greater employment prospects and increased income. Income provides individuals with the capacity to pay for nutritious food, shelter, clean water and health care, and therefore achieve a decent standard of living.
- When people are educated, they are better able to understand health promotion messages, such as the importance of having regular health check-ups and not smoking. These healthy behaviours are likely to benefit the physical health of the people engaging in them and therefore promote the optimal functioning of their bodies. When people are educated they are also more likely to be able to read, which boosts their self-image and is positive for their mental health.

World Vision's Permaculture Project

SDG 2: Zero hunger

Purpose

Globally, 795 million people have poor nutrition, and this causes nearly half of all deaths in children aged under five (3.1 million children each year). World Vision's Permaculture Project seeks to improve food security in Sri Lanka, in order to help improve nutritional intake and reduce health issues related to undernourishment.

Implementation

The Permaculture Project, funded by the Australian Department of Foreign Affairs and Trade (DFAT), is supporting families in Sri Lanka to establish organic gardens. The program includes:

- providing saplings such as coconut, jackfruit and mango to commence gardens
- providing community members with the knowledge and tools for organic farming

- linking producers to farmer networks and agricultural specialists within the government, who provide further technical advice regarding production and sale of produce
- providing livestock, such as dairy cows, to enhance households' nutrition and income. Farmers are provided with links to organic and fair-trade markets to sell their products
- training women to run small businesses.

(Source: <https://www.worldvision.com.au/global-issues/work-we-do/famine/permaculture-sri-lanka>)

How could the Permaculture Project promote health and wellbeing and human development?

Learning tip

For each program that you learn, you should know an example of how that program involves partnerships between organisations or sectors to improve health and wellbeing and human development.

- When people are well nourished, it strengthens their immune system. Their bodies are therefore better able to function and this helps prevent communicable diseases from significantly reducing their physical health. When people know they have an ongoing source of food, they are less likely to be stressed about feeding themselves and their family, which promotes good mental health.
- Through the program, women in Sri Lanka are learning business skills, which provide them with access to knowledge and enhances their capabilities. When children are nourished through food from the gardens, they have sufficient energy to attend school and enhance their capabilities, which provides the opportunity for them to develop to their full potential.

CARE Australia SAFE Motherhood Program

SDG 5: Gender equality

Purpose

Women all around the world face difficulties in accessing reproductive and sexual health services, because of location, discrimination, poverty or a range of other factors. Often these difficulties lead to high rates of miscarriage, unplanned pregnancy and child deaths. CARE Australia's SAFE Motherhood Project is working to assist women in overcoming barriers to access, use and provision of quality health services, and to help pregnant women receive health and nutrition education.

Implementation

The SAFE Motherhood Project is made possible through the support of the Australian Government's aid program and the donations of Australians. The program includes:

- teaching women about family health and nutrition, partially through education and training in building kitchen gardens
- women learning the importance of birth spacing, contraception and vaccination for their own health and that of their children
- women working with health professionals to create a safe birth plan, such as getting health checks during pregnancy, to ensure a better chance of survival and wellbeing with a home-based birth for themselves and their baby
- facilitating inclusive and effective spaces for dialogue between communities, health providers and government on women's health needs (Source: CARE Australia 2015 Annual Report).

How could the SAFE motherhood program promote health and wellbeing and human development?

- When women learn about family health and nutrition, they are better able to participate in decisions that affect their lives. They gain access to knowledge and enhance their capabilities, and are able to improve their level of human development.
- Women who are educated about sexual and reproductive health tend to 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. This supports their safety, the healthy functioning of their bodies and their physical health.

image folk/Stan/Zoonar



Figure 12.13 CARE's program supports mothers and their children to be well nourished.

CRITICAL FRIEND

Find a partner in your class and challenge them to describe the features of one effective aid program that addresses an SDG. They should be able to:

- give examples of implementation
- describe its purpose and the SDG(s) addressed
- name the partnerships involved
- outline the program's contribution to promoting health and wellbeing and human development.

Review and reflect

- 1 Describe an aid program that addresses SDG 3. In your answer include:
 - details of the implementation of the program
 - an example of one or more partnerships involved in the program
 - how the program promotes health and wellbeing and human development.
- 2 Use examples from the Water for Life program outlined in this chapter to explain how it could lead to achievements in SDG 2.
- 3 List two features of one aid program that could prevent it from being effective.

Social action and health and wellbeing

social action organised activity that seeks to improve human welfare

In this century, the global and pervasive nature of technology means that a greater number of people than ever are engaged with a variety of social issues, including those that affect health. **Social action** can be thought of as behaviour, often carried out in groups, that is aimed at influencing the action of one or more other persons in order to improve human welfare. Working together helps social groups to use their numbers to exert greater influence, in order to be effective.

Global health can be promoted via a range of social actions, which can be divided into two categories: direct and indirect. Direct social actions are those in which individuals directly partake in the act that is responsible for change. In contrast, indirect social actions are those in which individuals donate money or resources, which are used by and support others to generate social change.

Examples of direct social action

- Volunteering or working for NGOs such as Oxfam Australia
- Supporting campaigns, such as those coordinated by organisations such as Amnesty International to improve people's human rights, e.g. by writing letters for a campaign
- Joining protests in the interests of global health, such as a Greenpeace protest to halt activity that contributes to climate change and affects people's health
- Volunteering or working for an international organisation such as Médecins Sans Frontières (Doctors Without Borders)

Examples of indirect social action

- Donating money and supplies, such as food and clothes, to an organisation such as Red Cross Australia
- Encouraging and convincing friends or family to donate to a cause
- Raising awareness of causes using social media to help persuade others to become involved



Figure 12.14 A Greenpeace vessel that often hosts volunteers

Benefits to global health and wellbeing of individual social action

While it may seem doubtful that the actions of an individual can make an impact in the world, the reality is that the collaboration of many individuals helps to achieve progress. This collaboration often means that supplies are more quickly distributed to people in times of need and services are more accessible in unlikely places. Without non-paid assistance, many organisations such as the Red Cross and Amnesty International would struggle to function, leading to millions of people missing out on vital assistance and the consequent achievement of optimal health and human development. The world relies on individuals with the resources and capacity to help their fellow global citizens in achieving health outcomes, as it is too great a challenge for any one government or organisation to achieve alone. If all people with the ability to help out did so, accomplishing optimal health and wellbeing and human development for all people around the world would surely be attainable in your lifetime.

CRITICAL FRIEND

Ask the person next to you to outline two examples of social action that could be taken to promote health and wellbeing. You then have to choose which would be most effective and justify why this may be the case.

Review and reflect

- 1 Define 'social action that promotes health'.
- 2 Provide three examples of how an individual can take social action that promotes health.
- 3 Explain the difference between direct and indirect social actions.
- 4 Outline two potential benefits to the health and wellbeing of people around the world from social action on health.



Chapter summary

- NGOs are generally not-for-profit organisations that are independent of state and international governments.
- Examples of NGOs in the international aid arena include Save the Children International, World Vision, Oxfam, CARE, the International Committee of the Red Cross and Plan International.
- NGOs are a vital part of Australia's aid program as they often provide for specialist needs and have networks within local communities.
- Examples of Australian NGOs are CARE Australia, World Vision Australia, Save the Children Australia, Australian Red Cross, Oxfam Australia and PLAN International Australia.
- Three important elements that should be considered when determining whether or not an aid program is likely to be effective are: appropriateness, affordability and equity.
- Appropriateness – a program must take into consideration the needs of a specific community and should aim to address those needs.
- Affordability – most people in low-income countries have little disposable income, so for maximum health benefits projects must be free or available at very little cost.
- Equity – all members of a community should be able to access a program; there should not be barriers that prevent certain groups from participating.
- An example of an effective aid program that addresses SDG 2 (Zero hunger) is World Vision Australia's Permaculture Project, funded by the DFAT. It supports families in Sri Lanka to establish organic gardens. The program:
 - provides saplings to commence gardens
 - provides community members with knowledge and tools for organic farming
 - links producers to farmer networks and agricultural specialists within the government
 - provides livestock and links to markets
 - trains women to run small businesses.
- Social action is behaviour intended to influence the action of one or more other persons, often done in groups. Groups can exercise power collectively because of their numbers.
- Direct social actions are those where individuals participate in the act that is bringing about change.
- Indirect social actions are those where people donate money or resources so that other people can bring about the social change.

Exam-style questions with sample answers

- 1 List one Australian NGO and describe the aid it provides that helps increase the number of girls attending school in low-income countries. **(3 marks)**

Sample answer: Oxfam Australia (1 mark). Oxfam Australia helps build schools for females only in low-income countries (1 mark). This provides opportunities for girls who may not have been allowed to attend school for cultural reasons to get an education, thus increasing the number of girls attending school in low-income countries (1 mark).

- 2 Explain how taking social action can contribute to promoting human development. **(3 marks)**

Sample answer: Taking social action such as volunteering/working for a NGO such as the Australian Red Cross can promote human development (1 mark). This work could involve building shelter or helping to install clean water pumps in low-income countries (1 mark). This would assist people from these communities to achieve a decent standard of living and obtain the resources to maintain good health and wellbeing, thus promoting their human development (1 mark).

Questions for you to practise

- 1 Describe a program implemented by an Australian NGO. Outline how this program may increase the health status of a population in a low-income country. **(4 marks)**
- 2 List and explain the three features that are generally required for an aid program to be effective. **(3 marks)**

Glossary

acquired immunodeficiency syndrome (AIDS) the condition that arises post-infection by the human immunodeficiency virus (HIV) in which progressive failure of the immune system allows life-threatening opportunistic infections and cancers to thrive

aid assistance provided by donor government agencies

air pollution when the air contains gases, dust or fumes in amounts that are considered harmful to health or comfort

allied health practices include services such as psychology, pharmacy, physiotherapy, occupational therapy, radiography, optometry, chiropractic, Chinese medicine, podiatry and osteopathy, with registered professionals from the National Registration Accreditation Scheme

bidis small, thin, hand-rolled cigarettes, sometimes flavoured. Tobacco is rolled in a leaf.

bilateral aid aid given by one country directly to another; an example is when Australia provides aid to East Timor

biological factors bodily states that have the potential to influence health status of individuals and populations

blood lipids fatty substances found in the blood, including triglycerides and cholesterol

blood pressure the pressure of blood cells on the walls of arteries as blood is pumped around the body

body mass index (BMI) a biological factor that can influence health status; it is calculated using a person's weight and height

bulk billing system of payment for medical services, where the health professional accepts the Medicare benefit as full payment for service and does not charge any additional fees such as administration or booking fees

burden of disease the total fatal and non-fatal impact of a condition, measured by the unit disability-adjusted life year (DALY)

carcinoma a malignant tumour (cancer) that begins in the skin or in the tissue that lines organs, such as the liver or kidneys

cardiovascular disease (CVD) all diseases and conditions that involve the heart and blood vessels

characteristic a distinguishing feature or quality

climate change a change in the pattern of weather, occurring over time periods of decades or longer

climate change a change in weather patterns over decades or longer

climate weather conditions that prevail in an area over a long period, including air temperature, levels of UV radiation and likelihood of extreme weather events

communicable diseases diseases or illnesses caused by infectious organisms or their toxic products; transmission of the disease may occur directly or indirectly through contact with other humans, animals or other environments that harbour the organism

conflict a violent situation or period of fighting (e.g. between two countries)

culture the system of traditions, thoughts and behaviours shared by a group of people

dental caries damage to teeth resulting from softening of the enamel, leading to cavities and decay

diabetes a condition characterised by the body's inability to maintain healthy levels of glucose in the blood; there are three types: type 1, type 2 and gestational diabetes

digital technologies electronic tools, systems, devices and resources that generate, store or process data

disability-adjusted life year (DALY) a measure of overall disease burden, expressed as the number of years lost to disability, ill-health or early death years lost to disability (YLD) the number of years lost to disability or ill-health; a measure of the non-fatal burden of disease

discrimination treating a person or particular group of people differently (particularly worse) than the way in which you treat other people, because of their skin colour, sex, sexuality, etc

double burden of disease non-communicable diseases (NCDs) make up 66% of all deaths, but in all except high-income countries infectious (communicable) diseases are also very high, causing a 'double burden'.

economic sustainability using resources efficiently so future generations are able to earn an income

emergency aid also known as 'humanitarian aid'; rapid assistance given to people or countries in immediate distress to relieve suffering, during and after human-made emergencies such as wars, and natural disasters such as flood, tsunami or earthquake

emotional health 'relates to the ability to express feelings in a positive way. Emotional health is about the positive management and expression of emotional actions and reactions as well as the ability to display resilience'

environmental factors factors relating to the physical environment in which we live and work which can influence health status

environmental sustainability when the natural environment is conserved in a way that enables future generations to access its resources

epidemic a sudden, severe outbreak of a disease; the occurrence of more cases of a disease than expected

essential medicines drugs that meet the health care needs of most people in a population, by being available at all times, in adequate amounts, in appropriate dosages, at an affordable price

extreme weather events unpredictable, severe weather such as heat waves, droughts, tornadoes and hurricanes

food security when all people are able to obtain nutritionally adequate, culturally appropriate and safe food regularly through local non-emergency sources

gap payments the gap amount is the difference between the schedule fee and the Medicare benefit paid

gender equality when everyone receives equal treatment and no one is discriminated against because of their gender

global partnership a commitment of countries around the world to work together

global warming the increase in Earth's average surface temperature due to the increased effect of greenhouse gases, which trap heat that would otherwise escape from Earth's atmosphere

glucose regulation a process in the body through which blood glucose levels are regulated to stay within narrow limits

health a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity

health indicator a statistical measure used to provide information about a particular aspect of the health status of a population

health inequities differences in health status between population groups that are socially produced, systematic in their unequal distribution across the population, avoidable and unfair

health promotion the process of enabling people to increase control over and improve their health

health status the level of health that is experienced by an individual or a population at a particular time

health treaty a document that outlines a formal international agreement between nations to address a specific health issue and is ratified by a law organisation

health-adjusted life expectancy (HALE) the number of years in full health that a person can expect to live, based on current rates of ill-health and mortality

high-income country a country that has a GNI per capita above a certain amount set by the World Bank annually (e.g. \$12 476 in 2017)

HIV a retrovirus causing severe infection which, if untreated, can lead to AIDS

housing the accommodation that people reside in, including the type of dwelling and its condition, the location, and the number of people who live in it

Human Development Index (HDI) a tool developed by the UN to measure and rank countries' levels of social and economic development

human development when people live in an environment that enables them to develop to their full potential and lead productive, creative lives

illness the experience of being in a state of poor health, usually due to the presence of a disease or injury

immune system fights infections in the human body using white blood cells made in the bone marrow, and proteins called antibodies

incidence the number of new cases of a disease or condition in a population in a specified period

inequality an unfair situation in which some people have more opportunities, money, etc. than other people

infant mortality rate the number of deaths of children aged under one year in a population in a given year

International Health Regulations (IHR) legally binding health regulations that provide countries with a set of rules to follow in the event of a disease outbreak

life expectancy an indication of how long a person can expect to live; the number of years of life remaining to a person at a particular age if death rates do not change

low-income country a country that had a GNI per capita of \$1025 or less in 2015

lymph system a network of tissues and organs that help rid the body of toxins, waste and other unwanted materials; important in fighting infection

malaria a mosquito-borne infectious disease caused by a parasite

mass migration when a large number of people move from one geographical area to another

maternal mortality rate the number of maternal deaths (during pregnancy or within 42 days of the end of the pregnancy) from a cause related to pregnancy or delivery, in a population in a given time period

Medicare Benefits Schedule details all the services covered by Medicare in full

medicine a substance or therapy that improves the overall functioning and wellbeing of the body or prevents a disease. It includes prescription and non-prescription medicines, including complementary health care products

melanoma a potentially deadly type of skin cancer that usually results from overexposed to the sun, although rare melanomas can occur in parts of the skin or body that have never been exposed to the sun

mental health 'the current state of well-being relating to the mind or brain and it relates to the ability to think and process information' (VCAA Advice to Teachers 2017)

middle-income country a country that had a GNI per capita between \$1026 and \$12 475 or less in 2015

migration when a person (or a group of people) moves across an international border, or within a State, in order to re-settle there; includes refugees, displaced persons, economic migrants and family reunification

Millennium Development Goals a set of eight goals set by the United Nations and intended to be achieved by 2015

modifiable risk factor a behaviour or group of behaviours that a person engages in that puts them at risk of illness, disease or death, and can be eliminated or reduced through behavioural or environmental changes

morbidity the level of ill-health in an individual or a population

mortality rate 'the number of deaths in a population in a given period' (AIWH 2016, p. 2)

multilateral aid consisting of donations from a number of countries and distributed to recipients by an international organisation (e.g. World Bank, UN, WHO)

non-communicable disease (NCD) a disease that is not contagious and cannot be spread from one person to another, such as cardiovascular disease or cancer

non-government organisation (NGO) aid the aid provided by NGOs, often focusing on communities; NGOs take differing approaches to aid, including specific projects or programs, emergency aid, volunteering, education and development

non-government organisations (NGOs) legally constituted organisations without the participation or representation of any government

nutrition the intake of food, considered in relation to the body's dietary needs

optimal health and wellbeing the highest level of health an individual can achieve given their potential, including a balance between all dimensions of health

oral health the health of the tissues in the mouth, including the muscles of the bone, teeth and gums

osteoporosis a disorder with a characteristic reduction in the amount of bone in the body; the bones in the skeleton become easily broken because they are porous and fragile; tends to develop most often in the elderly and middle-aged, especially women after menopause

per capita for each person

physical health 'relates to the functioning of the body and its systems, it includes the physical capacity to perform daily activities or tasks'

poverty when people lack the resources to meet their basic needs; the World Bank defines extreme poverty as living on less than US\$1.90 per day

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prevalence the number (or percentage) of cases of a particular disease or condition in a population at a particular time

primary health care the first point of contact that a person has with health services, including for example, GP, health centre, allied health practices. It is the foundation for the rest of the health system – basic, accessible and affordable care, primarily concerned with treatment, cure and care of people with illness. In Australia it also includes services beyond those outlined in this book, including Australian Immunisation Register, Australian Organ Donor Register, Child Dental Benefit Scheme, Chronic Disease Management, National Bowel Cancer Screening Register

private sector the part of the national economy that is not controlled by the state/government

public sector the part of the national economy that is controlled by the state/government

renal disease disease of the kidneys

rising sea levels increasing volume of the earth's oceans as a result of increasing temperature, melting glaciers and other factors resulting from climate change

safety net program that enables equity of access to health care, ensuring lower or no costs for services once an initial threshold has been reached within a year

sanitation the hygienic means of promoting health through prevention of human contact with hazardous waste (e.g. faeces)

second-hand smoke the smoke in the air near a smoker that is inhaled by a non-smoker

self-assessed health status an overall measure of a population's health based on an individual's personal perceptions of their health

social action organised activity that seeks to improve human welfare

social health 'relates to the ability to form meaningful and satisfying relationships with others and the ability to manage or adapt appropriately to different social situations' (VCAA Advice to Teachers 2017)

social sustainability accessing social resources in a way that allows ongoing access by the community in future

sociocultural factors factors relating to the society (socio) and culture (cultural) of an individual or population that can influence health status both positively and negatively

socioeconomic status (SES) an individual or group's economic and social standing in relation to others based on income, education and occupation

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

stroke occurs when blood supply to parts of the brain are lost due to blockage or haemorrhage, resulting in death of brain cells

sustainability when current needs are met without preventing future generations from meeting their needs

Sustainable Development Goals a set of 17 goals set by the United Nations for the health and wellbeing of all people, and the protection of the planet, intended to be achieved by 2030

tobacco a substance sourced from tobacco leaves; the main chemical in tobacco is nicotine, an addictive substance that is categorised as a stimulant drug

tourism the movement of people to places outside their usual environment for leisure, business, religion, health, and visiting friends and relatives

tuberculosis (TB) an infectious disease caused by the bacterium *Mycobacterium tuberculosis*, which most commonly affects the lungs

under-five mortality rate the number of deaths of children under five years of age in a population in a given period

United Nations an international organisation founded in 1945 after World War II by 51 countries committed to maintaining international peace and security, developing friendly relations among nations and promoting social progress, better living standards and human rights

urban design and infrastructure the arrangement, appearance and function of suburbs, towns and cities

waiting period a time that must be served when beginning or upgrading private health insurance cover. It may mean that the cover will not be provided for certain treatments or that lower benefits will be paid until the waiting period is over

weather patterns repeating types of weather such as precipitation, temperature, air pressure and wind that recur at relatively predictable times

wellbeing 'a complex combination of all dimensions of health, characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged'

workplace hazards short- and long-term risks that are encountered in the workplace as part of doing a job

World Health Organization (WHO) the directing and coordinating authority for health within the United Nations system; WHO is responsible for providing leadership on global health matters.

world trade worldwide business that involves transactions in goods and services, and transporting them to interested markets

years of life lost (YLL) years of life lost to premature mortality; a measure of the fatal burden of disease

Additional references

Chapter 1

Australian Institute of Health and Welfare (AIHW) 2014, *Australia's Health 2014*, '1.1 Health and illness', Australia's health series no. 14. Cat. no. AUS 178, AIHW, Canberra

Better Health Victoria 2016, 'Wellbeing', <https://www.betterhealth.vic.gov.au/health/healthyliving/wellbeing>

WHO 1984, Thirty-seventh World Health Assembly, Resolution WHA37.13. World Health Organization, Geneva

AIHW 2016, *Australia's health 2016*, Australia's health series no. 15. Cat. no. AUS 199, p. 130, AIHW, Canberra

WHO 2015, 'WHO's first ever global estimates of foodborne diseases find children under 5 account for almost one third of deaths', news release 3 December 2015, <http://www.who.int/mediacentre/news/releases/2015/foodborne-disease-estimates/en/>

Food and Agriculture Organization of the United Nations, International Fund for Agricultural Development (FAD) and World Food Programme (WFP) 2015, *The State of Food Insecurity in the World 2015: Meeting the 2015 international hunger targets: taking stock of uneven progress*, FAO, Rome

WHO 2016, 'Obesity and overweight' fact sheet, WHO Media Centre, updated June 2016, <http://www.who.int/mediacentre/factsheets/fs311/en/>

Sareen J, Afifi TO, McMillan KA et al. 2011, 'Relationship between household income and mental disorders: findings from a population-based longitudinal study', *Archives of General Psychiatry*, 68 (4), pp. 419–27, <https://www.ncbi.nlm.nih.gov/pubmed/21464366>

WHO 2005, 'Ecosystems and human well-being. Health synthesis. A report of the Millennium Ecosystem Assessment', <http://apps.who.int/iris/bitstream/10665/43354/1/9241563095.pdf>

Amos, J 2017, 'Polluted air causes 5.5 million deaths a year new research says', BBC News 13 Feb 2016, <http://www.bbc.com/news/science-environment-35568249> access 30/1/2017

Hjelmgaard, K 2017, 'Study: 8 people have same wealth as world's poorest half', USA Today, 15 Jan 2017, <http://www.usatoday.com/story/news/world/2017/01/15/global-inequality-oxfam-report/96545438>

Oxfam 2017, 'An economy for the 99%', Briefing paper, <https://www.oxfam.org.au/wp-content/uploads/2017/01/An-economy-for-99-percent.pdf>

Chapter 2

AIHW 2017, *Australia's health 2016*, <http://www.aihw.gov.au/australias-health/2016/overview/>

American Cancer Society 2013, *Cancer facts and figures 2013*, p. 4, <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2013/cancer-facts-and-figures-2013.pdf>

WHO 2016, 'Children: reducing mortality' fact sheet, WHO Media Centre updated Sep 2016, www.who.int/mediacentre/factsheets/fs178/en/

Zhou M, Wang H, Zhu J et al. 2015, 'Cause-specific mortality for 240 causes in China during 1990–2013: a systematic subnational analysis for the Global Burden of Disease Study 2013', *The Lancet*, vol. 387, no. 10015, pp. 251–72, [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)00551-6/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)00551-6/abstract)

Cancer Council Australia 2017, 'About cancer. What is cancer? Facts and figures. Cancer in Australia', <http://www.cancer.org.au/about-cancer/what-is-cancer/facts-and-figures.html>

AIHW 2017b, *Australia's health 2016*, 'Chapter 3 Leading causes of ill health', <https://www.aihw.gov.au/reports/aus/199/australias-health-2016/contents/ill-health>

Heart Foundation 2014, 'Cardiovascular heart disease fact sheet', <https://www.heartfoundation.org.au/about-us/what-we-do/heart-disease-in-australia/cardiovascular-disease-fact-sheet>

Heart Foundation 2016, 'Australian heart disease statistics 2015', https://www.heartfoundation.org.au/images/uploads/publications/RES-115-Aust_heart_disease_statistics_2015_WEB.PDF

AIHW 2016c, 'Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011', AIHW, Canberra, <https://www.aihw.gov.au/getmedia/d4df9251-c4b6-452f-a877-8370b6124219/19663.pdf.aspx?inline=true>

Baker IDI Heart and Diabetes Institute 2012, 'Diabetes: The silent pandemic and its impact on Australia', <https://static.diabetesaustralia.com.au/s/fileassets/diabetes-australia/e7282521-472b-4313-b18e-be84c3d5d907.pdf>

Australian Bureau of Statistics 2007, 'National survey of mental health and wellbeing. Summary of results', cat. no. 4326.0, [http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/6AE6DA447F985FC2CA2574EA00122BD6/\\$File/43260_2007.pdf](http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/6AE6DA447F985FC2CA2574EA00122BD6/$File/43260_2007.pdf)

Beyondblue n/d, 'Stats and facts', <https://www.youthbeyondblue.com/footer/stats-and-facts>

AIHW 2011, 'Asthma rates drop among Australian children and young people', media release, <http://www.aihw.gov.au/media-release-detail/?id=10737420227>

ADDITIONAL REFERENCES

VCAA 2017, 'VCE Health and Human Development: Advice for teachers, Accreditation period 2018–2021'

ABS 2015, 'National Health Survey 2014–2015', cat. no. 4364.0.55.001, Table 3

ABS 2016, 'Causes of death Australia 2015', cat. no. 3303.0, <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/3303.0~2015~Main%20Features~Understanding%20diabetes%20mortality%20in%20Australia~5>

ABS 2016, 'Table 1: Life tables, States, Territories and Australia – 2013–2015: Table 1.9', cat. no. 3302.0.55.001, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3302.0.55.0012013-2015?OpenDocument>

AIHW 2016, *Australia's health 2016*, Australia's health series no. 15. Cat. no. AUS 199, AIHW, Canberra

Chapter 3

AIHW 2011, 'Health and the environment. A compilation of evidence', AIHW, Canberra, <http://www.healthplaces.org.au/userfiles/file/Miscellaneous/AIHW%20Health%20and%20the%20Environment%20Report%20Mar%202011.pdf>

Cancer Australia 2017, 'Melanoma of the skin statistics', <https://melanoma.canceraustralia.gov.au/statistics>

Mindframe 2016, 'Facts and stats about suicide in Australia', <http://www.mindframe-media.info/for-media/reporting-suicide/facts-and-stats>

Better Health 2011, 'Work-related fatalities', <https://www.betterhealth.vic.gov.au/health/healthyliving/work-related-fatalities>

AIHW 2015, 'The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015', <http://www.aihw.gov.au/publication-detail?id=60129550168>

Australian Human Rights Commission (AHRC) n/d, 'Face the facts: gender equality', <https://www.humanrights.gov.au/education/face-facts/face-facts-gender-equality>

Department of Prime Minister and Cabinet (DPMC) 2014, 'Aboriginal and Torres Strait Islander Health Performance Framework 2014 Report: 1.20 Infant and Child Mortality', <https://www.dpmc.gov.au/sites/default/files/publications/indigenous/Health-Performance-Framework-2014/tier-1-health-status-and-outcomes/120-infant-and-child-mortality.html>

ABS 2014, 'Australian Aboriginal and Torres Strait Islander Health Survey: biomedical results 2012–13', cat. no. 4727.0.55.003, <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4727.0.55.003~2012-13~Main%20Features~Feature%20article:%20%20Chronic%20disease%20results%20for%20Aboriginal%20and%20Torres%20Strait%20Islander%20and%20non-Indigenous%20Australians~134>

AIHW 2014, 'Housing circumstances of Indigenous households, Tenure and overcrowding.' cat. no. IHW 132, <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129548056>

AIHW 2017, 'Australia's Health 2016, Determinants of health', <https://www.aihw.gov.au/getmedia/9844cefb-7745-4dd8-9ee2-f4d1c3d6a727/19787-AH16.pdf.aspx?inline=true>

DPMC 2014, 'Aboriginal and Torres Strait Islander Health Performance Framework 2014 Report: 3.08 Cultural competency', <https://www.dpmc.gov.au/sites/default/files/publications/indigenous/Health-Performance-Framework-2014/tier-3-health-system-performance/308-cultural-competency.html>

Brotherhood of St Laurence (BSL) Research and Policy Centre 2014, 'Knowledge. Who experiences social exclusion? Indigenous background', <https://www.bsl.org.au/knowledge/social-exclusion-monitor/who-experiences-social-exclusion>

ABS 2015, 'National Health Survey: First results, 2014–15: Self-assessed health status', <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.001~2014-15~Main%20Features~Self-assessed%20health%20status~6>

Stringhini S, Carmel C, Jokel M et al. 2017, 'Socioeconomic status and the 25 x 25 risk factors as determinants of premature mortality: a multicohort study and meta-analysis of 1.7 million men and women', *The Lancet*, vol. 389, no. 10075, pp. 1229–37, [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(16\)32380-7/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)32380-7/fulltext)

Heart Foundation n/d, 'High cholesterol statistics', <https://www.heartfoundation.org.au/about-us/what-we-do/heart-disease-in-australia/high-cholesterol-statistics>

Baker IDI Heart and Diabetes Institute 2011, 'Australia's cholesterol crossroads: an analysis of 199,331 GP patient records', p. 25, https://www.baker.edu.au/Assets/Files/Australia's%20Cholesterol%20Crossroads%20Report_FINAL.pdf

Quit Resource Centre 2016, 'Smoking rates', <http://www.quit.org.au/resource-centre/facts-evidence/fact-sheets/smoking-rates>

Chapter 4

AIHW 2016, *Australia's health 2016*, Australia's health series no. 15. Cat. no. AUS 199, AIHW, Canberra

Australian Government Department of Human Services 2017, 'Medicare service', <https://www.humanservices.gov.au/customer/subjects/medicare-services#a1>

Private Health Insurance Ombudsman (PHIO) n/da, 'What is covered by Medicare?' <http://www.privatehealth.gov.au/healthinsurance/whatiscovered/medicare.htm>

Chapter 5

Scollo, MM and Winstanley, MH (eds) 2015, Deaths worldwide annually, http://www.who.int/tobacco/mpower/2009/gtcr_download/en/

Winstanley, MH & Greenhalgh, EM 2015, '3.0 Introduction', in *Tobacco in Australia: Facts and issues*, Scollo, MM and Winstanley, MH (eds), Cancer Council Victoria, Melbourne, <http://www.tobaccoinaustralia.org.au/chapter-3-health-effects/3-0-background> [Deaths in Australia annually and in Victoria 2008–2009]

- AIHW 2016a, 'Healthy Communities: Tobacco smoking rates across Australia, 2015–15', http://www.myhealthycommunities.gov.au/Content/publications/downloads/AIHW_HC_Report_Tobacco_Smoking_Rates_Report_December_2016.pdf?t=1481185276295
- Quit Victoria n/d, 'Deaths and disease from smoking', Quit resource centre, <http://www.quit.org.au/resource-centre/facts-evidence/factsheets/deaths-and-disease-from-smoking>
- AIHW 2016b, *Australia's health 2016*, Australia's health series no. 15. Cat. no. AUS 199, AIHW, Canberra
- AIHW 2016c, 'Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011', AIHW, Canberra, <https://www.aihw.gov.au/getmedia/d4df9251-c4b6-452f-a877-8370b6124219/19663.pdf.aspx?inline=true>
- WHO 2016, 'World Health Statistics 2016 data visualizations dashboard: Tobacco smoking, Prevalence of tobacco smoking', <http://apps.who.int/gho/data/node.sdq.3-a-viz?lang=en>
- WHO 2017, 'Tobacco Free Initiative (TFI) World Health Assembly Resolution 56.1: Preamble', http://www.who.int/tobacco/framework/final_text/en/index2.html
- Department of Health and Ageing (DHA) 2006, 'The costs of tobacco, alcohol and illicit drug abuse to Australian society in 2004/05, National Drug Strategy, Monograph Series no. 66, Australian Government Department of Health and Ageing, [http://www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/mono66/\\$File/mono66.pdf](http://www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/mono66/$File/mono66.pdf)
- Cancer Council 2012, 'Tobacco in Australia, Facts & issues: A comprehensive online resource', chapter 2, p. 59, http://www.tobaccoinaustralia.org.au/downloads/chapters/Ch2_Consumption.pdf
- WHO n/d, 'Global Health Observatory (GHO) data: Road safety', http://www.who.int/gho/road_safety/en/
- Bureau of Infrastructure, Transport and Regional Economics (BITRE) 2017, 'Safety statistics: Road safety statistics', Australian Government Department of Infrastructure and Regional Development, <https://bitre.gov.au/statistics/safety/index.aspx>
- Transport Accident Commission (TAC) 2017, 'Lives lost – annual, Calendar year to midnight 31 December 2016', <http://www.tac.vic.gov.au/road-safety/statistics/lives-lost-annual>
- State Government Victoria 2016, 'Towards zero 2016/2020. Victoria's road safety strategy and action plan', https://www.towardszero.vic.gov.au/__data/assets/pdf_file/0010/183556/STU_0206_RS_STRATEGY_2016_web.pdf
- WHO 2004, 'World Report on Road Traffic Injury Prevention', eds Peden M, Scurfield R, Sleet D et al., <http://apps.who.int/iris/bitstream/10665/42871/1/9241562609.pdf>
- TAC n/d, 'Towards Zero eLearning Module', <http://www.tac.vic.gov.au/road-safety/towards-zero/safe-system-learning-module/safe-system>
- AIHW 2016d, 'Skin cancer in Australia', AIHW, Canberra, <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129556026>
- Cancer Council 2016, 'Understanding skin cancer: A guide for people with cancer, their families and friends', Cancer Council Australia, http://www.cancer.org.au/content/about_cancer/ebooks/cancertypes/Understanding_Skin_Cancer_booklet_February_2016.pdf
- Cancer Council n/d, 'Can you spot ... A skin cancer?', poster, <http://www.cancer.org.au/content/pdf/Factsheets/MS%20214%20CCA%20MELANOMA%20POSTER%20V4%20.pdf>
- Montague M, Borland R & Sinclair C 2001, 'SunSmart twenty years on. What can we learn from this successful health promotion campaign?', extract, ed by Redman K, Sinclair C & Stent S, <http://www.sunsmart.com.au/downloads/about-sunsmart/sunsmart-20-years-on.pdf>
- Cancer Council Victoria 2017, 'SunSmart: History', <http://www.sunsmart.com.au/about/history>
- ABS 2015, 'National Health Survey: First results 2014–15: Smoking', cat. no. 4364.0.55.001, <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.001~2014-15~Main%20Features~Smoking~24>
- US Department of Health, Education and Welfare (DHEW) 1967, *The Reports of the Surgeon General. The Health Consequences of Smoking, a Public Health Service Review*

Chapter 6

- AIHW 2016, *Australia's Health 2016 in brief*, Fruit and vegetables, p. 3, <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129557059>
- AIHW 2016, *Australia's health 2016*, Australia's health series no. 15. Cat. no. AUS 199, AIHW, Canberra
- AIHW 2012, *Australia's Food and Nutrition 2012*, chapter 5, <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737422837>
- VicHealth n/d, 'Going soft drink free in YMCA Victoria aquatic and recreation centres', downloadable PDF in 'Building the business case: healthy food & drink policies', <https://www.vichealth.vic.gov.au/media-and-resources/publications/healthy-choice-food>
- Ball K, Timperio A & Crawford D 2009, 'Neighbourhood socioeconomic inequalities in food access and affordability', *Health & Place* vol. 15, pp. 578–85 (cited in AIHW 2012)

Chapter 7

- World Bank n/da, 'Data. How does the World Bank classify countries?', <https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries>
- World Bank, n/db, 'Data. World Bank country and lending groups', <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>
- United Nations Population Fund (UNPF) n/d, 'Gender equality', <http://www.unfpa.org/gender-equality>

ADDITIONAL REFERENCES

- UN n/d, 'Sustainable development goals: 17 goals to transform our world. Goal 5: Achieve gender equality and empower all women and girls', <http://www.un.org/sustainabledevelopment/gender-equality/>
- UN 1948, Universal Nations Declaration of Human Rights, <http://www.un.org/en/universal-declaration-human-rights/>
- WHO 2017a, 'Health topics: Sanitation', <http://www.who.int/topics/sanitation/en/>
- United Nations Development Program (UNDP) 2012, 'Middle-income countries: The role and presence of the United Nations for the achievement of the internationally agreed development goals', background paper prepared jointly by UNDP, UNFPA (coordinator), UNOPS, UNICEF, UN-Women and WFP, 30–31 Jan 2012, p. 2, New York, <http://documents.wfp.org/stellent/groups/public/documents/resources/wfp243909.pdf>
- VCAA 2017, 'VCE Health and Human Development: Advice for teachers, Accreditation period 2018–2021
- WHO 2017d, 'The top 10 causes of death, Top 10 causes of death worldwide' fact sheet, WHO Media Centre, updated 2017, <http://www.who.int/mediacentre/factsheets/fs310/en/>
- WHO 2015a, 'Global Health Observatory (GHO) data: Annex B Tables of health statistics by country, WHO region and globally', Part 1, http://www.who.int/gho/publications/world_health_statistics/2016/EN_WHS2016_AnnexB.pdf?ua=1
- AIHW 2017, 'Burden of disease: Highlights', 'Australian Burden of Disease Study: impact and causes of illness and death in Australia 2011', AIHW, Canberra, <http://www.aihw.gov.au/burden-of-disease/>
- WHO 2011a, 'Many countries hit by health threats from both infectious and chronic diseases. New data site makes WHO data and analyses widely available', news release, WHO media centre, http://www.who.int/mediacentre/news/releases/2011/health_statistics_20110513/en/
- WHO 2015, 'Noncommunicable diseases' fact sheet, WHO Media Centre, <http://www.who.int/mediacentre/factsheets/fs355/en/>
- WHO 2016b, 'Drinking water' fact sheet, WHO Media Centre, <http://www.who.int/mediacentre/factsheets/fs391/en/>
- WHO/UNICEF 2015, 'Progress on sanitation and drinking water, 2015 update and MDG assessment', http://apps.who.int/iris/bitstream/10665/177752/1/9789241509145_eng.pdf?ua=1
- WHO 2016c, '10 facts about schistosomiasis' fact file, <http://www.who.int/features/factfiles/schistosomiasis/en/>
- AT Still University (ATSU) 2016, 'Infections and intoxications of the intestines', <https://www.atsu.edu/faculty/chamberlain/website/lectures/lecture/gi4.htm>
- WHO 2016d, '10 facts on malaria' fact file, <http://www.who.int/features/factfiles/malaria/en/>
- WHO 2016e, 'Drowning' fact sheet, WHO Media Centre, <http://www.who.int/mediacentre/factsheets/fs347/en/>
- National Academy of Sciences 2007, 'Safe drinking water is essential. Why is safe water essential?', Global Health and Education Foundation, <https://www.koshland-science-museum.org/water/html/en/Overview/Why-is-Safe-Water-Essential.html>
- WHO 2016f, 'Sanitation' fact sheet, WHO Media Centre, <http://www.who.int/mediacentre/factsheets/fs392/en/>
- WaterAid Australia 2016, 'Water and sanitation essential to fighting malnutrition', <http://www.wateraid.org/au/news/news/water-and-sanitation-essential-to-fighting-malnutrition>
- WHO 2016, 'Global Health Observatory data repository: Burden of disease, Data by country', <http://apps.who.int/gho/data/node.main.INADEQUATEWSH?lang=en>
- WHO 2011, 'World Health Statistics Part II Global health indicators', http://www.who.int/whosis/whostat/EN_WHS2011_Part2.pdf?ua=1
- UNICEF n/d, 'Water, sanitation and hygiene', 'Millions without a toilet', fig 7.22, <https://www.unicef.org/wash/>
- UN n/db, 'No poverty: why it matters', http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/1_Why-it-Matters_Poverty_2p.pdf
- World Bank 2015, 'World Bank forecasts global poverty to fall below 10% for first time; major hurdles remain in goal to end poverty by 2030', press release, 4 Oct 2015, <http://www.worldbank.org/en/news/press-release/2015/10/04/world-bank-forecasts-global-poverty-to-fall-below-10-for-first-time-major-hurdles-remain-in-goal-to-end-poverty-by-2030>
- The Poverty Site n/d, 'Relative poverty, absolute poverty and social exclusion', <http://www.poverty.org.uk/summary/social%20exclusion.shtml>
- UN n/dc, 'Sustainable development goals: 17 goals to transform our world. Goal 1: End poverty in all its forms everywhere', <http://www.un.org/sustainabledevelopment/poverty/>
- World Bank 2014, 'Poverty and health', <http://www.worldbank.org/en/topic/health/brief/poverty-health>
- WHO 1999, 'The World Health Report 1999', chapter 2, http://www.who.int/whr/1999/en/whr99_ch2_en.pdf
- Rahman MA 2011, 'Working poor in Bangladesh: an attempt at understanding its nature and causes', thesis, University of Western Sydney, Research Direct Library, <http://researchdirect.uws.edu.au/islandora/object/uws%3A22717>
- Trenerry B, Franklin H & Paradies Y 2012, 'Preventing race-based discrimination and supporting cultural diversity in the workplace. An evidence review: full report', Victorian Health Promotion Foundation, Melbourne, Australia
- Klocker N, Trenerry B & Webster K 2011, 'How does freedom of religion and belief affect health and wellbeing?', Victorian Health Promotion Foundation (VicHealth), Carlton

UNDP 2014, 'Humanity divided: confronting inequality in developing countries', <http://www.undp.org/content/undp/en/home/librarypage/poverty-reduction/humanity-divided--confronting-inequality-in-developing-countries.html>

Human Rights Watch 2014, 'Malawi: end widespread child marriage', <https://www.hrw.org/news/2014/03/06/malawi-end-widespread-child-marriage>

Wang H, Dwyer-Lindgren L, Lofgren KT et al. 2012, 'Age-specific and sex-specific mortality in 187 countries, 1970–2010: a systematic analysis for the Global Burden of Disease Study 2010', *The Lancet*, vol. 380, no. 9859, pp. 2071–94

Baker P, Dworkin SL, Tong S, Banks I, Shand T and Yarney G 2014, 'The men's health gap: men must be included in the global health equity agenda', *Bulletin of the World Health Organization: Perspectives*, <http://www.who.int/bulletin/volumes/92/8/13-132795/en/>

UN 2001, 'Outcomes on racism', <http://www.un.org/en/development/devagenda/racism.shtml>

VicHealth 2011, 'How does freedom of religion and belief affect health and wellbeing?', <https://www.vichealth.vic.gov.au/media-and-resources/publications/freedom-of-religion-and-belief>

WHO 2017f, 'Health topics: Tobacco', <http://www.who.int/topics/tobacco/en/>

WHO 2011c, *World Health Statistics 2011*, http://www.who.int/whosis/whostat/EN_WHS2011_Full.pdf?ua=1

International Wines and Spirits Record (IWSR) 2015, 'Duty Free/Travel Retail Summary Report 2015', https://www.theiwsr.com/iwsr_duty_free_reports.html

VicHealth 2014a, 'Alcohol kills more than 5,500 every year new figures show', <https://www.vichealth.vic.gov.au/media-and-resources/media-releases/alcohol-kills-15-australians-a-day>

VicHealth 2014b, Gao C, Ogeil RP & Lloyd B 2014, Alcohol's burden of disease in Australia, FARE and VicHealth in collaboration with Turning Point, Canberra

WHO 2011d, 'Global status report on alcohol and health', http://www.who.int/substance_abuse/publications/global_alcohol_report/msbgsruprofiles.pdf

euronews 2013, 'The lowdown on smoking on World No Tobacco Day', <http://www.euronews.com/2013/05/30/the-lowdown-on-smoking-on-world-no-tobacco-day>

CDC (Centers for Disease Control and Prevention) 2016, 'Bidis and kreteks', https://www.cdc.gov/tobacco/data_statistics/fact_sheets/tobacco_industry/bidis_kreteks/

Kearney J 2010, 'Food consumptions trends and drivers', *Philos Trans R Soc Lond B Biol Sci*, vol. 365, no. 1554, pp. 2793–807, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2935122/><https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2935122/>

Chapter 8

UNDP (United Nations Development Programme) 2016, 'Human Development Reports: What is human development?', HDRO Outreach, <http://hdr.undp.org/en/content/what-human-development>

UNDP 2015, 'Human Development Report 2015: Work for Human Development', http://hdr.undp.org/sites/default/files/2015_human_development_report_0.pdf

VCAA 2017, 'VCE Health and Human Development: Advice for teachers, Accreditation period 2018–2021'

Chapter 9

Edenhofer OR, Pichs-Madruga Y, Sokona E et al. (eds) 2014. *Climate Change 2014, Mitigation of Climate Change, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Summary for Policymakers, Cambridge University Press, UK

National Geographic 2015–2017, 'Sea level rise', <http://www.nationalgeographic.com/environment/global-warming/sea-level-rise/>

United States Environmental Protection Agency (US EPA) 2016, 'A student's guide to global climate change, Rising sea level', <https://www3.epa.gov/climatechange/kids/impacts/signs/sea-level.html>

National Geographic 2015, 'Oceans will rise much more than predicted, NASA says', <http://news.nationalgeographic.com/2015/08/150827-NASA-climate-oceans-seas-greenland/>

WHO 2014, 'Quantitative risk assessment of the effects of climate change on selected causes of death, 2030s and 2050s', WHO, Geneva

Robine JM, Cheung SL, Le Roy S, Van Oyen H, Griffiths C, Michel JP et al. 2008, 'Death toll exceeded 70,000 in Europe during the summer of 2003', *C R Biol.* 2008, 331(2), pp. 171–8

Paz S, Negev M, Clermont A et al. 2016, 'Health aspects of climate change in cities with Mediterranean climate, and local adaptation plans', *Int J of Environmental Research & Public Health* 2016, 14(4), p. 438, MDPI, <http://www.mdpi.com/1660-4601/13/4/438>

Zhou XN, Yang GJ, Yang K, Wang XH, Hong QB, Sun LP et al. 2008 'Potential Impact of Climate Change on Schistosomiasis Transmission in China', *Am J Trop Med Hyg.* 2008, 78(2), pp. 188–94

WHO 2017a, GHO Data, 'Number of malaria deaths', <http://www.who.int/gho/malaria/epidemic/deaths/en/>

University of Rhode Island (URI) 2010–2015, 'Hurricanes: science and society. Hurricane hazards and impacts', <http://www.hurricanesociety.org/society/impacts/>

Lam L 2017, 'New evidence that climate change is altering hurricane season as you know it', The Weather Channel, Environment, <https://weather.com/science/environment/news/climate-change-study-changing-intensity-number-hurricanes>

WHO n/d a, WHO media centre, <http://www.who.int/globalchange/mediacentre/events/climate-health-conference/climatechange-infographic2.jpg?ua=1>

ADDITIONAL REFERENCES

- WHO n/d b, WHO media centre, <http://www.who.int/globalchange/mediacentre/events/climate-health-conference/climatechange-infographic1.jpg?ua=1>
- UNICEF/UNFPA n/d, 'The effects of conflict on health and well-being of women and girls in Darfur. Situational analysis report: conversations with the community', https://www.unicef.org/infobycountry/files/sitan_unfpaunicef.pdf
- United National Development Fund for Women (UNIFEM) 2010, 'Ending violence against women and girls. Evidence, data and knowledge in the Pacific Island countries. Literature Review and annotated bibliography. Augusts 2010', <https://www.unicef.org/pacificislands/evaw.pdf>
- UN n/d, 'United Nations Department of Economic and Social Affairs, Population Division, International migration', <http://www.un.org/en/development/desa/population/theme/international-migration/>
- Internal Displacement Monitoring Centre (IDMC) 2015, 'Global overview 2015: People internally displaced by conflict and violence', <http://www.internal-displacement.org/assets/library/Media/201505-Global-Overview-2015/20150506-global-overview-2015-en.pdf>
- United Nations Population Fund (UNFPA) n/d, 'Migration', <http://www.unfpa.org/migration>
- UNHCR 2015, 'Global Trends: Forced displacement in 2015', <https://s3.amazonaws.com/unhcrsharedmedia/2016/2016-06-20-global-trends/2016-06-14-Global-Trends-2015.pdf>
- Syrian Refugees 2016, 'Syrian refugees: A snapshot of the crisis – in the Middle East and Europe', <http://syrianrefugees.eu/>
- WHO 2017b, 'Water sanitation hygiene: What are the health risks related to overcrowding?', http://www.who.int/water_sanitation_health/emergencies/qa/emergencies_qa9/en/
- ECHO 2016, European Commission. Humanitarian aid and civil protection (ECHO) fact sheet, Refugees June 2016
- IOM n/d, 'Fatal Journeys Volume 2: Identification and tracing of dead and missing migrants', IOM Online Bookstore, <http://publications.iom.int/books/fatal-journeys-volume-2-identification-and-tracing-dead-and-missing-migrants>
- World Vision 2017, 'Syria refugee crisis: facts you need to know', <https://www.worldvision.org/refugees-news-stories/syria-refugee-crisis-war-facts>
- World Vision 2016, 'Struggle for children who fled Aleppo is "just beginning", warn aid workers', <https://www.worldvision.org/about-us/media-center/struggle-children-who-fled-aleppo-just-beginning-warn-aid-workers>
- WebFinance Inc. 2017, 'Global trade', Business Dictionary, <http://www.businessdictionary.com/definition/global-trade.html>
- European Commission (EC) n/d, '10 benefits of trade for developing countries', http://trade.ec.europa.eu/doclib/docs/2012/january/tradoc_148991.pdf
- Levin Institute 2016, 'Globalization 101: Trade and globalization', <http://www.globalization101.org/trade-introduction/>
- World Tourism Organization & European Commission 2013 'Sustainable tourism for development', <http://cf.cdn.unwto.org/sites/all/files/docpdf/devcoengfinal.pdf>
- UN 2010, 'International recommendations for tourism statistics 2008', Studies in Methods, series M, No. 83/Rev.1, Department of Economic and Social Affairs, http://unstats.un.org/unsd/publication/Seriesm/SeriesM_83rev1e.pdf
- Sources: World Tourism Organisation (2013), Sustainable Tourism for Development Guidebook - enhancing capacities for Sustainable Tourism for development in developing countries, UNWTO, Madrid, p.132.
- UN World Tourism Organization 2017, 'Sustained growth in international tourism despite challenges', PR 17003, <http://www2.unwto.org/press-release/2017-01-17/sustained-growth-international-tourism-despite-challenges>
- Simm C n/d, 'Travel tips: Positive and negative effects of tourism', USA Today, <http://traveltips.usatoday.com/positive-negative-effects-tourism-63336.html>
- UNWTO 2016, 'International Year for Sustainable Tourism for Development 2017 garners support from the sector', press release, PR 16099, <http://media.unwto.org/press-release/2016-12-05/international-year-sustainable-tourism-development-2017-garners-support-sec>
- WHO 2017c, 2017, 'Health topics, eHealth', WHO EMRO (Eastern Mediterranean Regional Office), <http://www.emro.who.int/health-topics/ehealth/>
- WHO 2017d - WHO 2017, Programmes, 'Tuberculosis (TB), Frequently asked questions on Global TaskForce on digital health for TB and its work', <http://www.who.int/tb/areas-of-work/digital-health/faq/en/>
- Carter M 2014, 'How Twitter may have helped Nigeria contain Ebola', *BMJ* 2014, 349:g6946, 19 November 2014, <http://search.proquest.com/openview/8361094a2bbef52b29fe1c0c147e4d83/1?pq-origsite=gscholar&cbl=2043523>
- WHO 2017e, 'Atlas of eHealth country profiles 2015: The use of eHealth in support of universal health coverage. Overview.', Global Observatory for eHealth, http://www.who.int/goe/publications/atlas_2015/en/
- Ewing S, van der Nagel E & Thomas J 2014, 'The Internet in Australia', ARC Centre of Excellence for Creative Industries and Innovation, http://apo.org.au/files/Resource/cci_digital_futures_2014_report.pdf
- Australian Commission on Safety and Quality in Health Care (ACSQHC) 2013, 'Consumers, the health system and health literacy: taking action to improve safety and quality', <https://safetyandquality.gov.au/wp-content/uploads/2012/01/Consumers-the-health-system-and-health-literacy-Taking-action-to-improve-safety-and-quality3.pdf>
- John T 2016, 'Brain game Lumosity to pay \$2 million fine for "deceptive advertising"', *Time*, 6 January 2016, <http://time.com/4169123/lumosity-2-million-fine/>

Productivity Commission 2013, 'An Ageing Australia: Preparing for the Future Australia', Commonwealth of Australia, <http://www.pc.gov.au/research/completed/ageing-australia>

Morris M, Ozanne E, Miller K. et al. 2012, 'Smarter technologies for older people: a systematic literature review of smart technologies that promote health and wellbeing of older people living at home', University of Melbourne, Institute for a Broadband-Enabled Society, http://networkedsociety.unimelb.edu.au/__data/assets/pdf_file/0008/1661327/Smart-technologies-for-older-people.pdf

Hood L & Flores M. 2012, 'A personal view on systems medicine and the emergence of proactive P4 medicine: predictive, preventive, personalized and participatory', *New Biotechnology* 29(6), pp. 613–24

Chapter 10

UN n/d, 'Sustainable Development Goals: 17 goals to transform our world. The sustainable development agenda', <http://www.un.org/sustainabledevelopment/development-agenda/>

UN, n/db 'Sustainable development goals: 17 goals to transform our world. Goal 3: Ensure healthy lives and promote well-being for all at all ages', <http://www.un.org/sustainabledevelopment/health/>

UN 2017, 'The Sustainable Development Goals Report 2016', <https://unstats.un.org/sdgs/report/2016/>

UN 2015, 'The Millennium Development Goals Report 2015', fact sheet, UN DPI – DPI/2594/3 E, http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20PR%20Key%20Facts%20Global.pdf

Chapter 11

Australian Aid Budget Summary, 2016–17

Australian Department of Foreign Affairs & Trade (DFAT) Aid: Australia's aid program, <http://dfat.gov.au/aid/pages/australias-aid-program.aspx>

DFAT Development assistance in Fiji, <http://dfat.gov.au/geo/fiji/development-assistance/Pages/development-assistance-in-fiji.aspx>

UN Millennium Project Goals, <http://www.unmillenniumproject.org/goals/>

WHO Media Centre 2015, 'WHO moves to improve access to lifesaving medicines for hepatitis C, drug-resistant TB and cancers' <http://www.who.int/mediacentre/news/releases/2015/new-essential-medicines-list/en/>

WHO Media Centre fact sheet 355, <http://www.who.int/mediacentre/factsheets/fs355/en/>

WHO Programmes: Universal health coverage, http://www.who.int/universal_health_coverage/en/

World Food Programme 'School meals in 2015', http://documents.wfp.org/stellent/groups/public/documents/communications/wfp285325.pdf?_ga=1.265077705.750760060.1482387954www.plan.org.au

WHO, Twelfth General Programme of Work 2014–19, World Health Organisation, 2014

Chapter 12

Save the Children n/d, 'Global Strategy: Ambition for children 2030 and 2016–2018 strategic plan', <https://www.savethechildren.net/sites/default/files/Global%20Strategy%20-%20Ambition%20for%20Children%202030.pdf>, p.6

Save the Children Australia 2016, '2015 Annual Report', http://www.savethechildren.org.au/__data/assets/pdf_file/0019/144262/2015-Annual-Report.pdf

CARE Australia 2016, 'Annual report 2015', https://www.care.org.au/wp-content/uploads/2015/11/000061_CARE_Annual_Report_20160105_FINAL_WEB.pdf

Oxfam Australia 2017, 'Oxfam Australia 2016 Annual Report', <http://resources.oxfam.org.au/pages/view.php?ref=1773&k=7a4fb312e4>

PLAN International n/d, 'Early Childhood Care and Development and Education', https://www.plan.org.au/~media/plan/documents/program-profiles/program-profile_education-and-eccd--plan-international-australia.pdf

World Vision Australia 2015, <https://www.worldvision.com.au/global-issues/work-we-do/famine/permaculture-sri-lanka>

Index

- acquired immunodeficiency syndrome (AIDS) 286
- activation energy 90
- adenosine triphosphate (ATP) 97
- aerobic cellular respiration 99–1
 - and photosynthesis 100
- Afghanistan, rural nursing (case study) 302–3
- Africa (case study) 236–7
- agriculture and aid 343–4
 - aid
 - agriculture, fisheries and water 343–4
 - Australian funding 337
 - Australian partnerships 349
 - Australian priorities 338–41
 - Australian provision 337
 - Australia's program 335–8, 347–9
 - bilateral 334–5
 - and education 345–7
 - effective governance: policies, institutions and functioning economies 341–2
 - emergency 330–1
 - empowering women and girls 342–3
 - gender equality 342–3
 - and health 345–7
 - multilateral 331–2
 - social action and health and wellbeing 374–5
 - types of 330–3
- aid programs, effective 367–73
 - affordability 368
 - appropriateness 367–8
 - equity 369
 - and SGDs 370–3
- alcohol distribution 212–14
- allied health practices 109
- anaerobic cellular respiration 99
- antibiotics 102
- aquaporins 67
- Australian aid
 - disaster risk reduction 340–1
 - effective governance 341–2
 - funding 337
 - humanitarian assistance 340–1
 - partnerships 349
 - priorities 338–41
 - program 335–8, 347–50
 - provision 337
 - social protection 340–1
- Australian dietary guidelines 154–8
- Australian Guide to Healthy Eating 155–8
- Australia health status 45–53
 - burden of disease 51–3
 - chronic illness 49–50
 - finding information 46
 - improvements 99–104
 - life expectancy 46–7
 - mortality 47–9
 - self-assessed health status 50–1
- Australia health system 98–117
 - improvements in status 99–104
 - National Disability Insurance Scheme 116
 - 'new' public health 104–8
 - 'old' public health 99–100
 - outline of 108–12
 - Pharmaceutical Benefits Scheme 114–16
 - private health insurance 112–14
 - social model of health 104–8
- Australia's Food and Nutrition 2012* 170
- Australia's Health 2016* 49, 123
- Australian Bureau of Statistics (ABS) 46
- Australian Guide to Healthy Eating (AGHE) 154
- Australian Institute of Health and Welfare (AIHW) 46
- Bhutan, changing environment (case study) 310–11
- bilateral aid 334–5
- biochemical processes in cells 96–101
- biomacromolecules 87
- biomedical advances in health care 101–3
- biomedical approach in health care 100–3
- Bowell, Libby 365–6
- bulk bills 111
- burden of disease 42, 43, 51–3
 - case study 44–5, 189–90
 - double 190
 - high-, middle- and low-income countries 185, 188–92
- carbohydrates 87
- carcinoma 133
- Care Australia 358–9
 - SAFE Motherhood Program 372–3
- carrier proteins 71
- catalysts 90
- cell function 65–101
 - biochemical processes 96–101
 - enzymes 90–6
 - movement in and out of cells 66–85
- cell membranes
 - diffusion in 69–72
 - movement of molecules 67–8
- cell membranes, factors affecting
 - exchange of materials across 82–6
 - concentration gradient 83
 - physical 83
 - surface-area-to-volume ratio 83–5
- cell requirements 86–9
- cells
 - biochemical processes 96–101
 - removal of products and wastes 101
- cellular respiration 71, 99–100
 - aerobic 99–1
 - anaerobic 99
- centenarians (case study) 37–8
- channel proteins 71
- chronic illness 49–50
- climate
 - changing rainfall patterns 249
 - drought 249–50
 - extreme heat 249
 - extreme weather events 247, 248–51
 - floods 250
 - hurricanes 250
- climate change 247–51, 279, 282
- Closing the Gap 139–43
- communicable diseases 320
- competitiveness and aid 347–9
- concentration gradient 68, 83
- concentrate solution 73
- conflict 252–3
- Council of Australian Governments (COAG) 139
- culture 171
- cytoplasmic streaming 83

- Deadly Sista Girlz (case study) 147
 death, causes by income groups (case study) 187–8
 Deloitte 360
 DFAT staff profile (case study) 337–8
 DFAT's types of partnership 349
- diabetes 123
 dietary change, challenges 165–71
 access and equity 166–7
 food preparation setting 171
 health status, culture, knowledge and belief 171
 income/price 170–1
 information, marketing and education 167–70
 dietary guidelines, Australian 154–8
 differential permeability 66
 diffusion 68–70
 across cell membrane 69–72
 digital health 103
 digital learning 263–56
 digital technologies
 and health care system 268–71
 implications of 263–74
 dilute solution 73
 disaccharides 87
 disability-adjusted life year (DALY) 41, 42–3
 disaster risk reduction (Australian aid) 340–1
 discrimination 205–9
 disease, burden of 42, 43, 51–3
 case study 44–5, 189–90
 high-, middle- and low-income countries 185, 188–92
 similarities and differences 192–217
 diseases
 communicable 320
 non-communicable 320–1
 waterborne 194
 double burden of disease 190
 drought 249–50
- early childhood and Closing the Gap 141
 eating patterns in Australia 152–4
 economic characteristics
 high-income countries 180
 low-income countries 184
 middle-income countries 182
 economic determinants of health 328
 economic participation, Indigenous 142
- economic sustainability 239, 242
 ecosystem, stable 24–5
 education 21, 169–70
 and aid 345–7
 and Closing the Gap 141–2
 eHealth 264
 eLearning program in Afghanistan and Pakistan (case study) 272–3
 emergency aid 330–1
 emotional health 9
 empowering individuals 105
 endocytosis 81
 environmental characteristics
 high-income countries 181
 low-income countries 184
 middle-income countries 182
 environmental determinants of health 328
 environmental sustainability 240–1, 242
 enzyme activity
 factors affecting 91–3
 models of 91
 substrate concentration 93
 enzymes 90
 pH sensitive 91–2
 properties 91
 temperature sensitive 91
 epidemic 124
 essential medicines 325
 exocytosis 81–2
 external environment 66
 extreme heat 249
 extreme weather events 247, 248–51
- family planning 103
 Fiji, Australian bilateral assistance (case study) 344–5
 fisheries and aid 343–4
 five foods groups 152–4
 floods 250
 food 21–2
 food labels 168–9
 food preparation setting 171
 food security 144, 166, 366
 Food Standards Australian and New Zealand (FSANZ) code 167
 foods, distribution of processed 215–16
- gap payments 112
 gender equality 205–7, 279
 and aid 332, 342–3
 and sexual orientation 208–9
- global benefits of optimal health and wellbeing 15–16
 global marketing 209–16
 global partnerships 279
 Global Peace Charter Index (GPI) 17–19
 global warming 309
 graphs 37
- health
 and aid 345–7
 Closing the Gap 140
 definition 4–5, 179
 dimensions of 6–8
 emotional dimension of 9
 global benefits of optimal 15–16
 knowledge via social media 265–70
 importance of 13–16
 indicators 32
 individual and collective
 importance of 14–15
 insurance, private 112–14
 interactions between dimensions 12–13
 international health regulations (IHR) 323–4
 mental dimension 10
 and NGOs 354–67
 optimal 5, 15–16
 physical dimension of 6–7
 questions, Googling (case study) 273–4
 as a resource 13–14
 risks and mass migration 255–6
 and social action 374–5
 social dimension 7–8
 spiritual dimension 11
 status 171
 treaty 124
 understanding 3–13
 universal coverage 324–6
 health, global context 178–218
 characteristics of high-, middle- and low-income countries 179–84
 health status and burden of disease in high-, middle- and low-income countries 184–92
 similarities and differences in burden of disease 192–216
 health-adjusted life expectancy (HALE) 41–2
 health care
 Acts to enable access 105
 biomedical advances 101–3

- biomedical approach 100–3
- primary 108–9
- workers 265
- health prerequisites 16–27
 - education 21
 - food 21–2
 - income 23
 - peace 17–19
 - shelter 19–21
 - social justice and equity 26–7
 - stable ecosystem 24–5
 - sustainable resources 25–6
- health promotion 101, 121–47
 - campaigns 122–39
 - Indigenous health programs 139–47
 - and road safety 128–9
 - and skin cancer 135–8
- health-related SDGs 319–20
- Health Star Rating System 169
- health status
 - in Australia 45–53
 - definition 32, 179
 - indicators 39–45
 - high-, middle- and low-income countries 185–8
 - self-assessed 40–1, 50–1
 - understanding 32–9
- health status in Australia 45–53
 - burden of disease 51–3
 - chronic illness 49–50
 - finding information 46
 - life expectancy 46–7
 - mortality 47–9
 - self-assessed health status 50–1
- health system, Australia 98–117
 - improvements in status 99–104
 - National Disability Insurance Scheme 116
 - ‘new’ public health 104–8
 - ‘old’ public health 99–100
 - outline of 108–12
 - Pharmaceutical Benefits Scheme 114–16
 - private health insurance 112–14
 - social model of health 104–8
- Healthy Eating Advisory Service 162–3
- healthy eating in Australia 151–74
 - Australian guide 155–7
 - Buckley Park (case study) 164
 - dietary change challenges 165–71
 - eating patterns 152–4
 - initiatives 154–64
 - Nutrition Australia 158–64
- Healthy Eating Pyramid 159–61
- high-income countries
 - burden of disease 185, 189
 - characteristics of 179–84
 - definition 180
 - economic characteristics 180
 - environmental characteristics 181
 - health status and burden of disease 184–92
 - social characteristics 180
- HIV 285
- housing, Indigenous 142
- human development 222–38
 - and aid 346, 347
 - definition 222
 - influencing 223–6
 - measuring 228–38
 - and NGOs 366–7
- Human Development Index (HDI) 228–38
 - advantages and limitations 237–8
 - frequently asked questions 234–8
- humanitarian assistance (Australian aid) 340–1
- hurricanes 250
- hydrophilic molecules 67
- hypertonic 73
- hypotonic 73
- illness 5
 - chronic 49–50
- immune system 124
- incidence 39
- income 23, 170
- identity, sex/gender 205–7
- indicators of health status 39–41
- Indigenous health programs 139–47
 - Closing the Gap 139–43
 - Deadly Sista Girlz (case study) 147
 - early childhood 141
 - economic participation 142–3
 - education 141–2
 - Fitzroy Stars Football and Netball Club 145–7
 - health 140
 - housing 142
 - remote service delivery 143
 - VACCHO 144–5
- Indonesia: implementing the SDGs (case study) 283–4
- induced-fit model 91
- inequality 205–9, 282
- infrastructure 347–9
- injustice 282
- inorganic nutrients 86
- internal environment 66
- International Committee for the Red Cross (ICRC) 362–7
- international health regulations (IHR) 323–4
- isotonic 73
- JB H-Fi 361
- learning, digital 263–56
- legislation 128–9
- life expectancy 36–7
 - Australia 46–7
 - at birth 185–6
 - health-adjusted (HALE) 41–2
- lipids 88
- lock-and-key model 91
- low-income countries
 - burden of disease 185, 192
 - characteristics of 179–84
 - definition 183
 - economic characteristics 184
 - environmental characteristics 184
 - health status and burden of disease 184–92
 - social characteristics 184
- lymph system 133
- malaria 195, 286
- Mali 363–4
- marketing 167–9
 - global 209–16
- mass migration 253–8
- maternal mortality 286
- medical products, access to 326–7
- medical technologies
 - between 1940 and 1970 100–1
- Medicare 110–12
 - bulk bills 111
 - gap payments 112
 - hospital treatment 110–11
 - medical services/general treatment 111–12
 - safety net 111–12
- Medicare Benefits Schedule 110
- medicines 114
 - essential 325
- melanoma 133
 - health promotion 135–9
 - SunSmart 135–9
 - who gets? 134–5
- melanoma-related hospitalisations 2013–2014 132–3

- men (gender identity) 207
- mental health 10
- metabolism 90
- mHealth 264
- middle-income countries
 - burden of disease 185, 190–1
 - characteristics of 179–84
 - definition 181
 - economic characteristics 182
 - environmental characteristics 182–3
 - health status and burden of disease 184–92
 - social characteristics 181–2
- migration 253–8
- Millennium Development Goals (MDGs) 279
- modifiable risk factor 153
- molecules
 - hydrophilic 67
 - movement across cell membranes 67–8
 - transport of large 81–2
- monomers 87
- monosaccharides 87
- morbidity 39, 186–7
- mortality
 - Australia 47–51
 - at different life span stages 35
 - unsafe WASH* services 199
- mortality rate (MR) 33–6, 186–7
 - infant 35
 - maternal 35
 - under-five 35
- multilateral aid 331–2
- National Disability Insurance Scheme (NDIS) 116–17
 - case study 117
- National Health Survey 50
- National Nutrition Week 162
- non-communicable diseases 320–1
- non-government organisation aid (NGO aid) 354
 - case study 364–5
- non-government organisations (NGOs) 354–67
 - promotion of health, wellbeing and human development 366–7
- nucleic acid 88–9
- Nutrition Australia 158–64
- obesity 22, 153–4
- organic compounds 86, 87–9
- Organisation for Economic Co-operation and Development (OECD) 46, 51
- osmosis 73–9
 - in animal cells 77
 - in plant cells 77–8
- osmotic pressure 73
- Ottawa Charter for Health Promotion* 13, 105–8, 131, 138, 143, 146–7
- Oxfam Australia 360–2
 - partnerships 360–1
 - Water for Life initiative 361–2
- packaged food 167
- passive movement 68
- pathology tests 103
- peace 17–19
- penicillin 102
- peptides 88
- permeability 66–7
- phagocytosis 81
- Pharmaceutical Benefits Scheme (PBS) 114–15
- photosynthesis 87, 97–8
 - and aerobic cellular respiration 100
 - light-dependent stage (photolysis) 98
 - light-independent stage (carbon fixation) 98
- physical health 6–7
- pinocytosis 81
- Plan International Australia – Early Childhood Care and Development (ECCD) Program 370–1
- plasmolysis 77
- poaching (case study) 242–3
- polysaccharides 87
- polypeptides 88
- poverty 202–5, 279, 282
- prevalence 39
- price 171
- primary health care 108
- private health insurance 112–14
 - types of cover 112–14
 - waiting period 112
- processed foods, distribution of 215–16
- prostheses 103
- proteins 88
- Quit Victoria (tobacco program) 125–6
- race discrimination 207–8
- religion discrimination 207–8
- remote service delivery 143
- renal disease 123
- resources, sustainable 25–6
- rising sea levels 247
- road safety 127–31
 - deaths on roads 127–30
 - and health promotion 128–9
 - Towards Zero 130–1
 - Transport Accident Commission (TAC) 130
- sanitation 181, 197–202, 312–14
- saturation point 93
- Save the Children International 356–8
- screening equipment 103
- selectively permeability 66
- self-assessed health status 40–1, 50–1
- sex identity 205–7
- sexual orientation and gender identity 208–9
- shelter 19–21
- skin cancer 132–9
 - melanoma-related hospitalisations 2013–2014 132–3
 - types of 132
- smoking 122–7
- social action 374–5
- social characteristics
 - high-income countries 180
 - low-income countries 184
 - middle-income countries 181–2
- social determinants of health 328
- social health 7–8
- social inequities 104
 - Acts to enable access 104
- social justice and equity 26–7
- social media, health knowledge via 265–70
- social protection (Australian aid) 340–1
- social sustainability 240, 241–2
- soft drink-free in YMCA (case study) 172–3
- solvent 73
- spiritual health 11
- Sri-Lanka 311–12
- stroke 123
- Studio Thick 361
- substrate concentration and enzyme activity 93
- substrate–enzyme complex 91
- substrates 91
- SunSmart 135–9
- surface-area-to-volume ratio 83–5
- surgical procedures 102

- ul style="list-style-type: none; padding-left: 0;">
- sustainability 238–42
 - definition 238
 - economic 239, 242
 - environmental 240–1, 242
 - and human development 241–2
 - social 240, 241–2
- Sustainable Development Goals (SDGs) 279–314
 - collaboration between health sectors 311–14
 - definition 279
 - effective aid programs 370–3
 - Goal 1: no poverty 288–90
 - Goal 2: zero hunger 292–5
 - Goal 3: good health and wellbeing 284–7, 320
 - Goal 4: quality education 295–8
 - Goal 5: gender equality 299–302
 - Goal 6: clean water and sanitation 303–6
 - Goal 13: climate change 306–10
 - health-related 319–20
 - objectives 282–3
 - origin 279–84
 - rationale 280–1
 - relationship between goals 288–98
- sustainable resources 25–6
- Syrian refugee crisis 359
- Tanzania, children worm-free (case study) 291–2
- Tanzania, medicines and health products (case study) 327–8
- technologies, implications of digital 263–74
- Telehealth 264–5
- Thankyou Group 360
- Therapeutic Goods Administration (TGA) 115
- tobacco 122–6, 209–11
- toilet, life-changing (case study) 350
- tourism, world 260–3
- Towards Zero Road Safety Strategy 2016–2020 130–1
- trade, world 259–60
- trade facilitation 347–9
- transport
 - of large molecules 81–2
- Transport Accident Commission (TAC) 130
- triglycerides 88
- tuberculosis (TB) 286
- turgid 77
- United Nations (UN) 279
- United Nations Food and Agriculture Organization (UNFAO) 22
- water
 - access to safe 192–6, 313–14
 - and aid 343–4
- wellbeing
 - and aid 346, 347
 - definition 4–5
 - dimensions of 6–8
 - emotional dimension of 9
 - global benefits of optimal 15–16
 - importance of 13–16
 - individual and collective importance of 14–15
- interactions between dimensions
 - 12–13
 - mental dimension 10
 - and NGOs 366–7
 - optimal 5, 15–16
 - physical dimension of 6–7
 - as a resource 13–14
 - and social action 374–5
 - social dimension 7–8
 - spiritual dimension 11
 - understanding 3–13
- women
 - equality (aid) 342–3
 - gender identity 205–6
 - violence and abuse 252
- World Food Program 311–12
- World Food Program, school meals (case study) 333
- World Health Organization (WHO) 4–5, 13, 46, 122, 318–29
- world tourism 260–3
- world trade 259–60
- World Vision's Permaculture Project 371–2
 - case study 369–70
- vaccines 101
- Victorian Aboriginal Community Controlled Health Organisation Inc. (VACCHO) 144–5
- Victorian Healthy Eating Enterprise fruit and vegetable network 163–4
- years of life lost (YLL) 43

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