Australian Government

Australian Institute of Health and Welfare

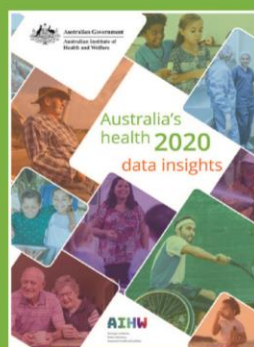# Australia's health snapshots 2020

Australia's health snapshots 2020

This document is a point-in-time compilation of the Australia's health snapshots (web pages) published 23 July 2020. For the latest version of the snapshots, including interactive content, visit:

https://www.aihw.gov.au/reports-data/australias-health/australias-health-snapshots

Australia's health snapshots are part of the *Australia's health 2020* product suite.

About *Australia's health 2020*

This edition of the AIHW's biennial flagship report on health introduces a new format and an expanded product suite:

Australia's health 2020: data insights

This is a collection of topical, in-depth articles on selected health issues, including a picture of health data in Australia. It is available online and as a print report.

Australia's health snapshots

These are web pages that present key information and data on the health system, health of Australians and factors that can influence our health. The 71 snapshots are available online in HTML and as a PDF.

Australia's health 2020: in brief

This is a short, visual report summarising key findings and concepts from the snapshots to provide a holistic picture of health in Australia. It is available online and as a print report.

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Health system

Health of population groups

Health status

Health is not just the presence of absence of disease or injury— more holistically, it is a state of wellbeing. These snapshots consider how healthy we are as a nation and look at some specific causes of ill health in Australia.

Bone and joint health

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/bone-and-joint-health

Conditions that affect the bones, muscles and joints are known as musculoskeletal conditions. These conditions include long-term (chronic) conditions such as osteoarthritis, rheumatoid arthritis, juvenile arthritis, back pain and problems, gout, and osteoporosis or osteopenia (low bone density) (see Glossary).

How common are chronic musculoskeletal conditions?

Chronic musculoskeletal conditions affect almost 3 in 10 (29%) Australians. Self-reported data from the Australian Bureau of Satistics 2017–18 National Health Survey (NHS) provide estimates of the number of Australians affected by musculoskeletal conditions. These data indicate that, of the nearly 7.0 million people with chronic musculoskeletal conditions, 4.0 million (16% of all Australians) had back pain and problems (the most common musculoskeletal condition), 3.6 million (15%) had arthritis and 924,000 (3.8%) had osteoporosis (ABS 2018a). These rates have remained relatively consistent since 2007–08 (Figure 1).

Figure 1: Prevalence of chronic musculoskeletal conditions, by sex, 2007–08 to 2017–18

Condition
Arthritis

Rate
◉ Per cent
○ Age-standardised per cent

Population group
◉ Total population
○ People aged 45 and over

■ Males   ■ Females   ■ Persons

[Notes]
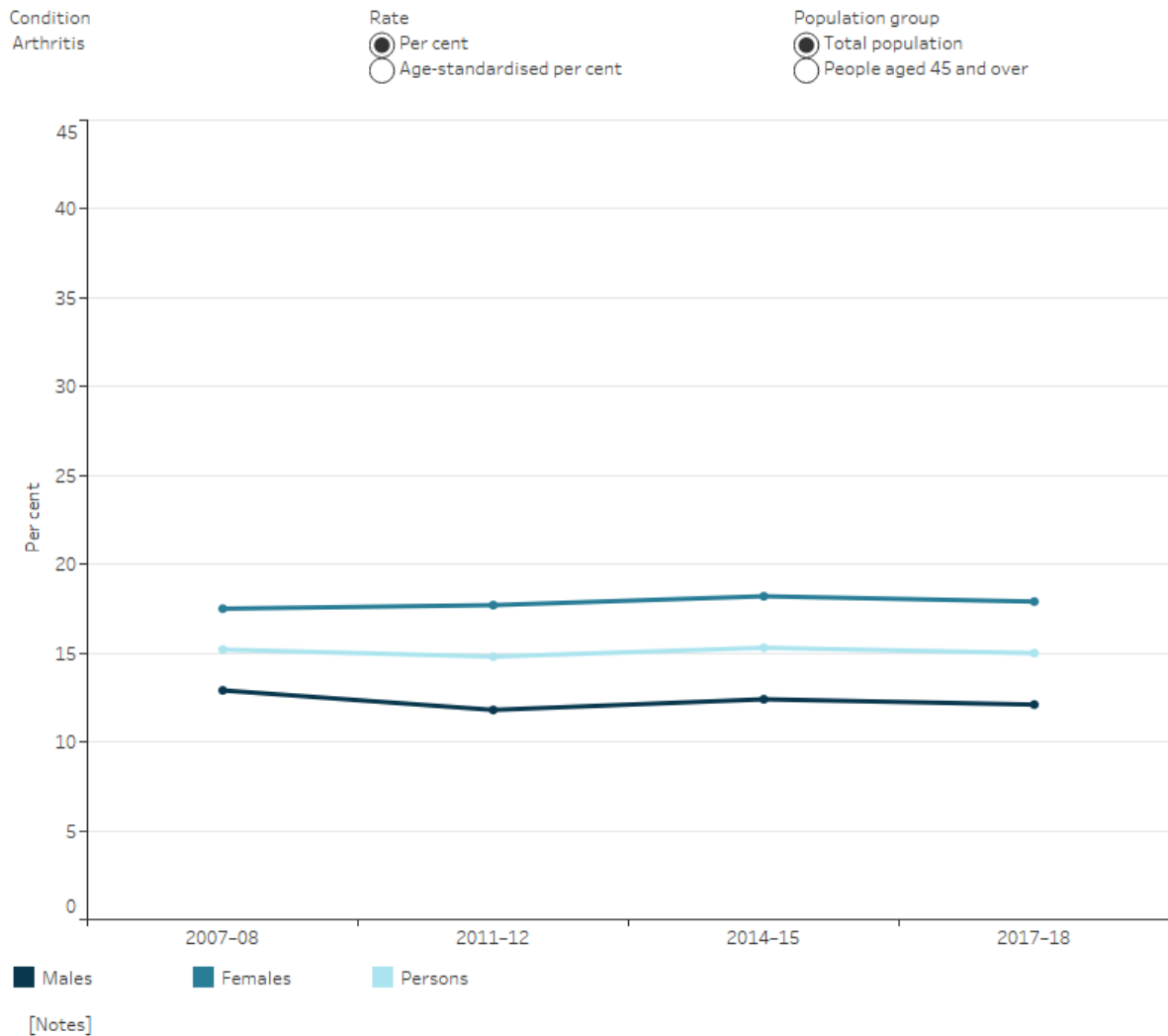
Source: ABS 2010, ABS 2013, ABS 2016, ABS 2019a.
http://www.aihw.gov.au/

Females and older people are at greater risk

Females and older people were more likely to have chronic musculoskeletal conditions. The 2017–18 NHS shows that:

- Females were 1.2 times as likely to have a musculoskeletal condition and more than 4 times as likely to have osteoporosis compared with males.

- The prevalence of arthritis was similar in males and females aged 0–44, but overall females were 1.5 times as likely to have arthritis compared with males.

- The prevalence of back pain and problems was similar in males and females across all age groups.

- More than 2 in 3 (68%) people aged 75 and over had a musculoskeletal condition (Figure 2).

Figure 2: Prevalence of chronic musculoskeletal conditions, by sex and age, 2017–18

Condition
Any musculoskeletal condition
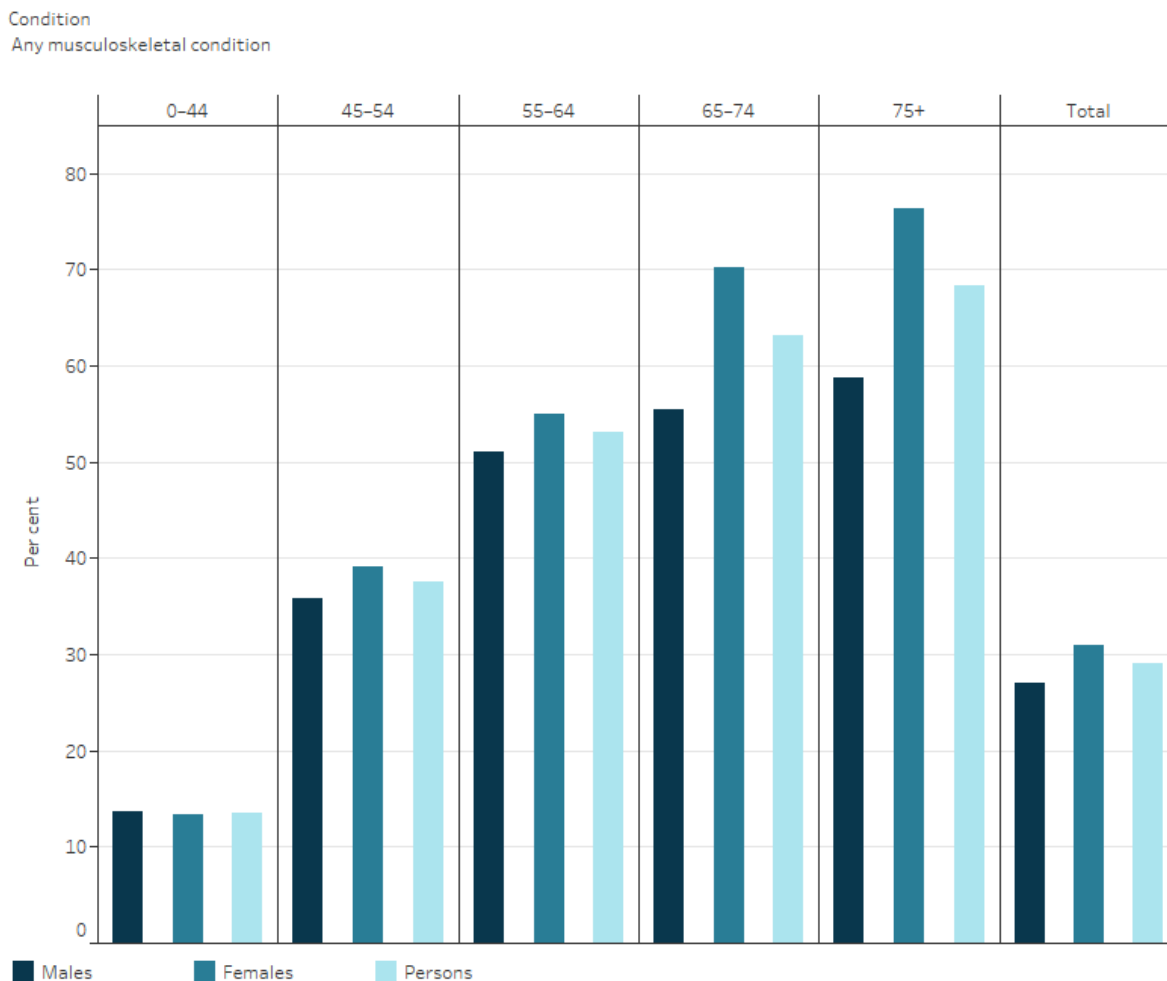
Source: ABS 2019a.
http://www.aihw.gov.au/

Comorbidity

People with musculoskeletal conditions often have other long-term conditions. This is called 'comorbidity', which describes any additional disease that is experienced by a person with a disease of interest (the index disease).

Prevalence of comorbidity

In the 2017–18 NHS, for people aged 15 and over with:

Osteoporosis, 85% had at least one other chronic condition

Osteoporosis + other chronic condition(s)	Osteoporosis only
85%	15%
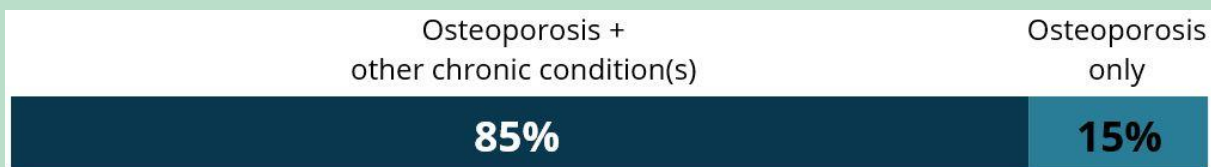
Arthritis, 74% had at least one other chronic condition

Arthritis + other chronic condition(s)	Arthritis only
74%	26%
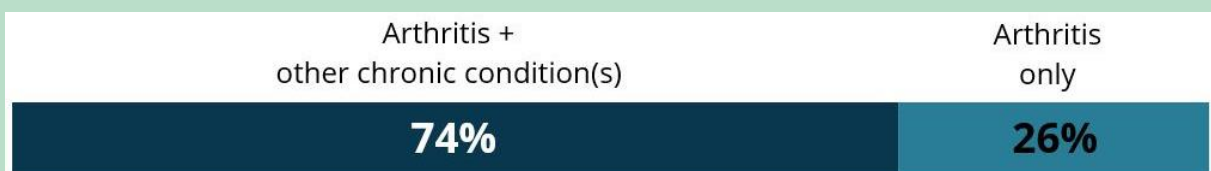
Back pain and problems, 64% had at least one other chronic condition

Back pain and problems + other chronic condition(s)	Back pain and problems only
64%	36%
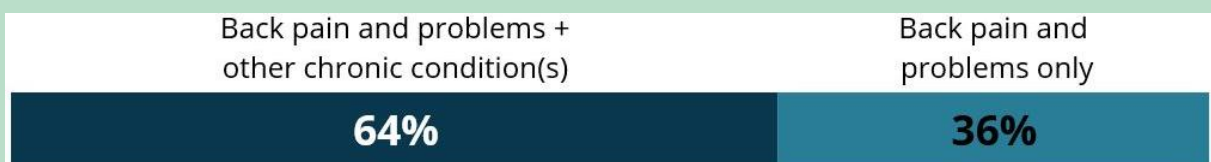
The number of comorbidities varies by age and sex. For example, the proportion of people with back pain and problems who had at least one other chronic condition increased with age, from 47% (aged 15–44) to 85% (aged 65 and over). Among those with back pain and problems, the proportion of people with comorbidities was higher in females than males across all age groups (Figure 3).

Figure 3: Proportion of people with musculoskeletal conditions who have at least one other chronic condition in people aged 15 and over, by sex and age, 2017–18

Condition
Arthritis
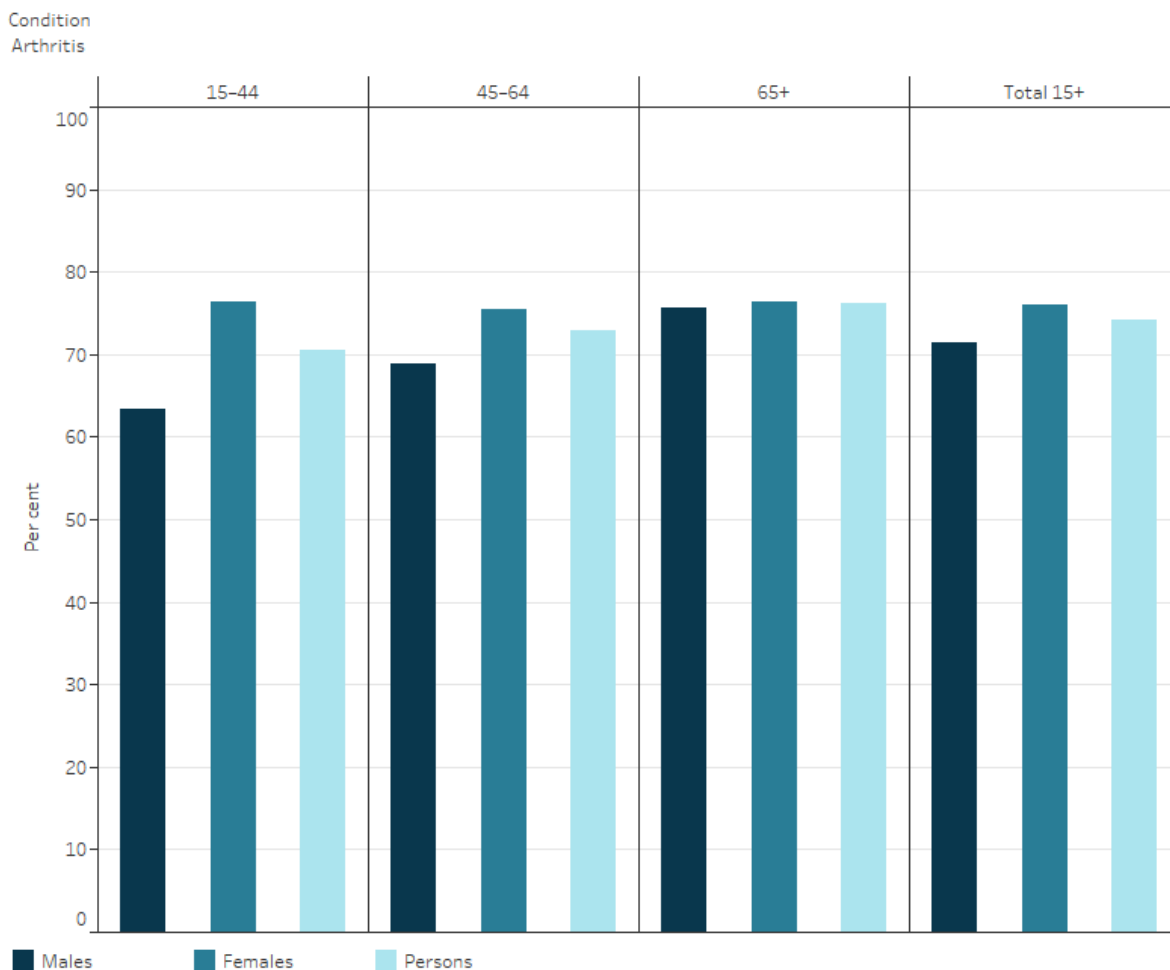
Source: ABS 2019a.
http://www.aihw.gov.au/

Musculoskeletal conditions often co-occur among people aged 45 and over. Compared with people without these conditions:

- people with arthritis were 1.8 times as likely to also have back pain and problems
- people with back pain and problems were 1.6 times as likely to also have arthritis
- people with osteoporosis were 2.1 times as likely to also have arthritis.

Mental and behavioural conditions are a common comorbidity in people aged 45 and over with musculoskeletal conditions. Compared with people without these conditions, mental and behavioural conditions were:

- 1.9 times as likely in people with back pain and problems
- 1.6 times as likely in people with arthritis
- 1.5 times as likely in people with osteoporosis (Figure 4).

Adjusting for differences in the age structure of the groups did not affect the pattern of these results.

Figure 4: Prevalence of other chronic conditions in people aged 45 and over, with and without musculoskeletal conditions, 2017–18

Condition
Arthritis

Rate
Per cent

With Arthritis | Without Arthritis
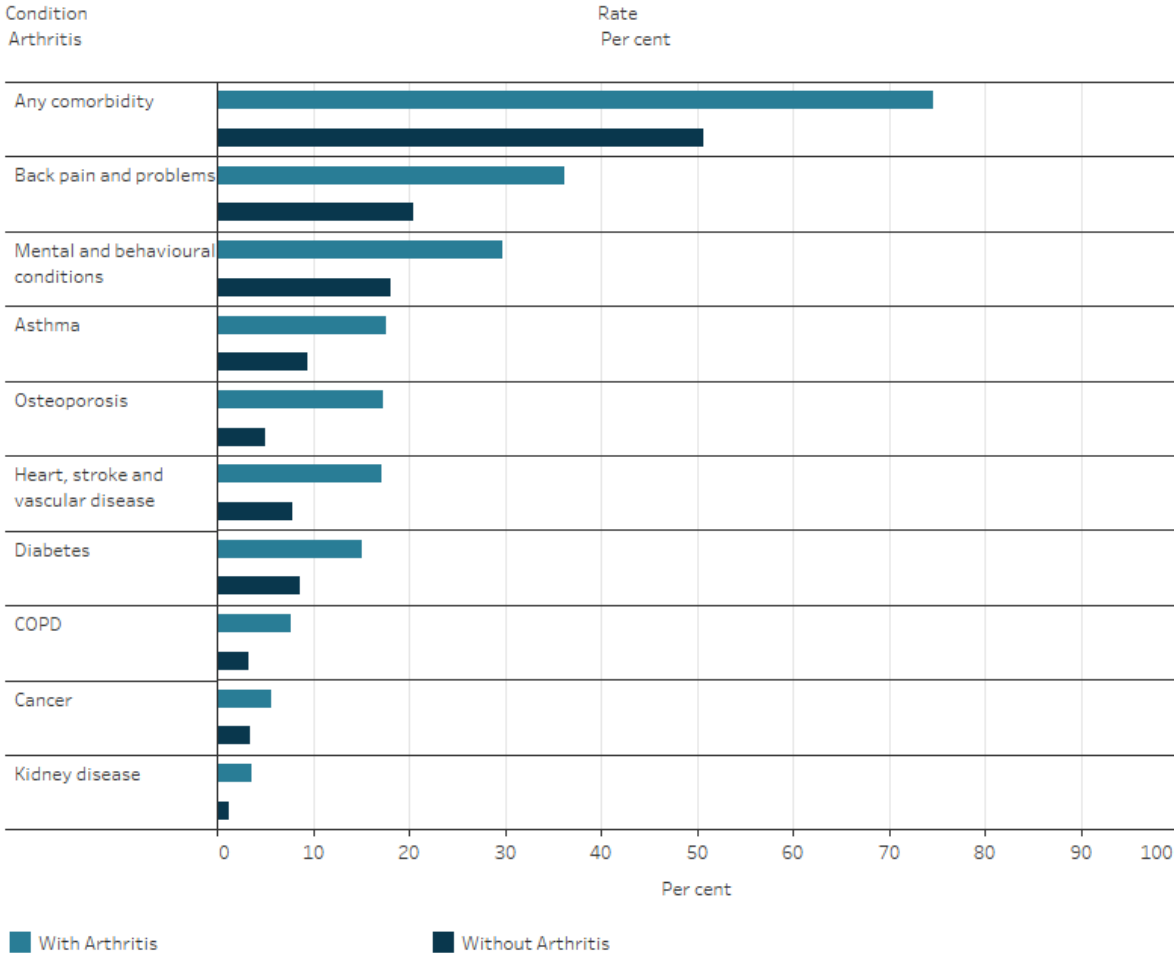
[Notes]

Source: ABS 2019a.
http://www.aihw.gov.au/

Impact

Chronic musculoskeletal conditions are large contributors to illness, pain and disability in Australia. People with these conditions self-report higher rates of poor health, psychological distress and pain, after adjusting for age (Figure 5). This may affect their ability to participate in social, community and occupational activities (Briggs et al. 2016). The 2018 Survey of Disability, Ageing and Carers found that, of the people with disability in Australia, an estimated 13% had back problems and another 13% had arthritis as the main long-term health condition causing the disability (ABS 2019b).

Figure 5: Impact of musculoskeletal conditions in people aged 45 and over, with and without the condition, 2017–18

Condition
Arthritis

Impact
- Self-assessed health status
- Psychological distress
- Bodily pain

With Arthritis Without Arthritis
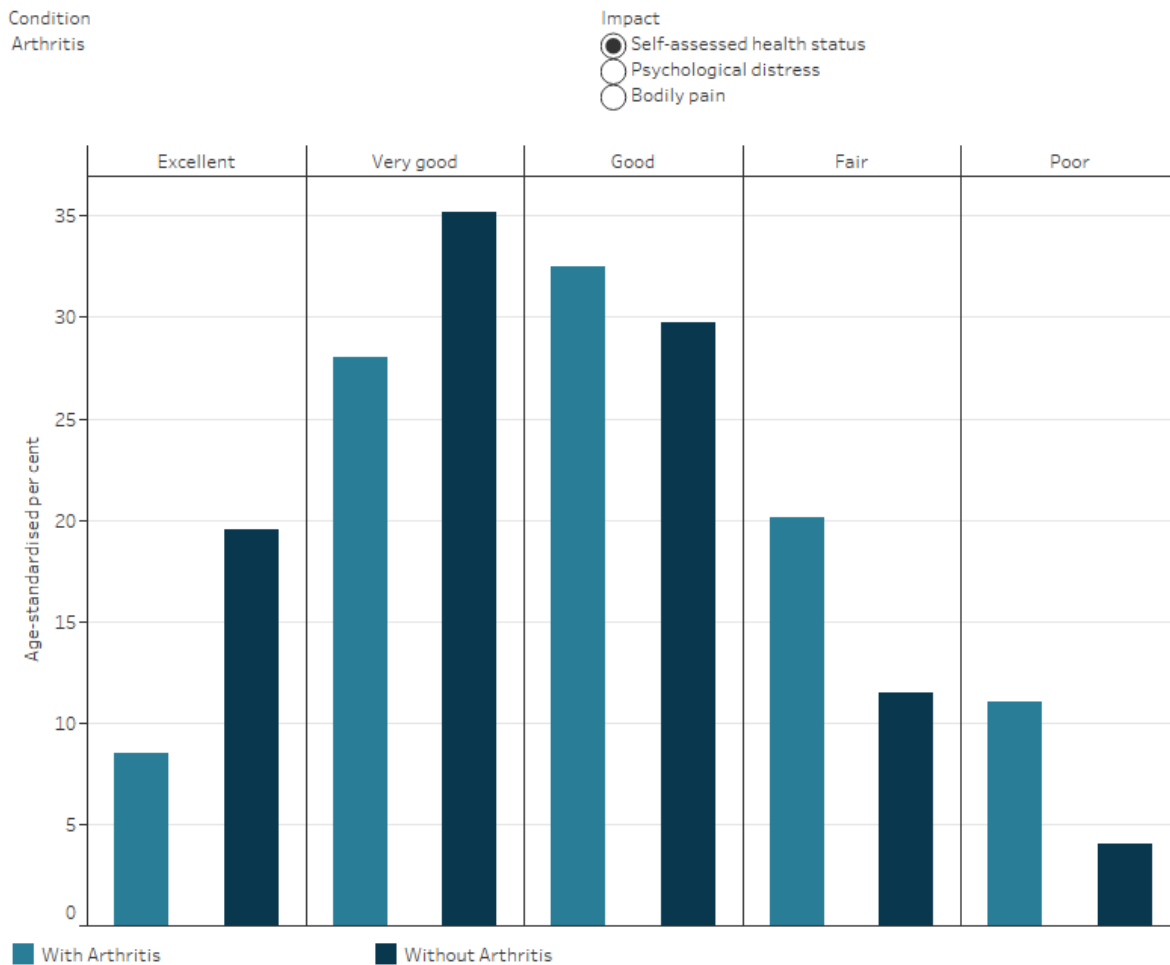
[Notes]

Source: ABS 2019a.
http://www.aihw.gov.au/

Burden of disease

Ill health caused by musculoskeletal conditions can have both a human and a financial cost. According to the Australian Burden of Disease Study 2015, musculoskeletal conditions contributed to:

- 13% of the total disease burden (fatal and non-fatal) in Australia. This disease group was the third leading contributor to total burden after cancer and cardiovascular diseases

- one-quarter (25%) of non-fatal burden (that is, the impact of living with illness and injury). This was the leading disease group contributing to non-fatal burden

- a higher burden among females than males—musculoskeletal conditions contributed to 15% of total female burden compared with 11% of total male burden (AIHW 2019a).

Modifiable risk factors contribute to burden

Some of the total burden due to musculoskeletal conditions can be attributed to modifiable risk factors. In 2015:

Overweight and obesity contributed to:

- **11%** of total burden of all musculoskeletal conditions
- **44%** of the burden of osteoarthritis

Occupational exposures and hazards contributed to:

- **5.3%** of total burden of all musculoskeletal conditions
- **17%** of the burden of back pain and problems (AIHW 2019b).

See Burden of disease for information on definitions and the burden of disease associated with these conditions.

Expenditure

The Australian Disease Expenditure Study found that Musculoskeletal conditions was the disease group with the highest estimated expenditure in 2015–16, costing the Australian health system $12.5 billion (11% of total disease expenditure) (AIHW 2019c). See Health expenditure.

Treatment and management

Primary care

Musculoskeletal conditions are usually managed by general practitioners and allied health professionals. Treatment can include physical therapy, medicines (for pain and inflammation), self-management (such as diet and exercise), education on self-management and living with the condition, and referral to specialist care where necessary (WHO 2019). Based on survey data, an estimated 1 in 6 (18%) general practice visits in 2015–16 were for management of musculoskeletal conditions (Britt et al. 2016). See Primary health care.

Hospitals

People with musculoskeletal conditions that are very severe, or who require specialised treatment or surgery, can also be managed in hospitals. In 2017–18, there were around 795,000 hospitalisations for musculoskeletal conditions—7.1% of all hospitalisations in that year. These hospitalisations included:

- osteoarthritis (34% of all musculoskeletal hospitalisations)
- back pain and problems (23%)

- rheumatoid arthritis (1.5%)

- osteoporosis (1.0%)

- gout (1.0%).

See [Hospital care](#).

Clinical guidelines in Australia recommend joint replacement surgery as a cost-effective intervention for people with severe arthritis who are unresponsive to medication and exercise (RACGP 2018). Osteoarthritis is the most common condition leading to hip and knee replacement surgery in Australia (AOANJRR 2019). Between 2008–09 and 2017–18, the rate of joint replacement surgery in hospitalisations where osteoarthritis was the principal diagnosis increased by 27% for total knee replacements and 33% for total hip replacements, after adjusting for age (AIHW 2019d).

The prevention, management and treatment of musculoskeletal conditions beyond hospital settings cannot currently be examined in detail due to limitations in available data on:

- primary and allied health care at the national level

- use of over-the-counter medicines to manage pain and inflammation

- diagnosis information for prescription pharmaceuticals (which would allow a direct link between musculoskeletal conditions and use of subsidised medicines)

- patient outcomes, pathways through the health system and quality of care.

Variation between population groups

Among people aged 45 and over, the prevalence of musculoskeletal conditions generally increases with increasing socioeconomic disadvantage, but is similar across remoteness areas, after adjusting for age (Figure 6).

Figure 6: Prevalence of chronic musculoskeletal conditions in people aged 45 and over, by remoteness and socioeconomic area, 2017–18

Condition
Arthritis
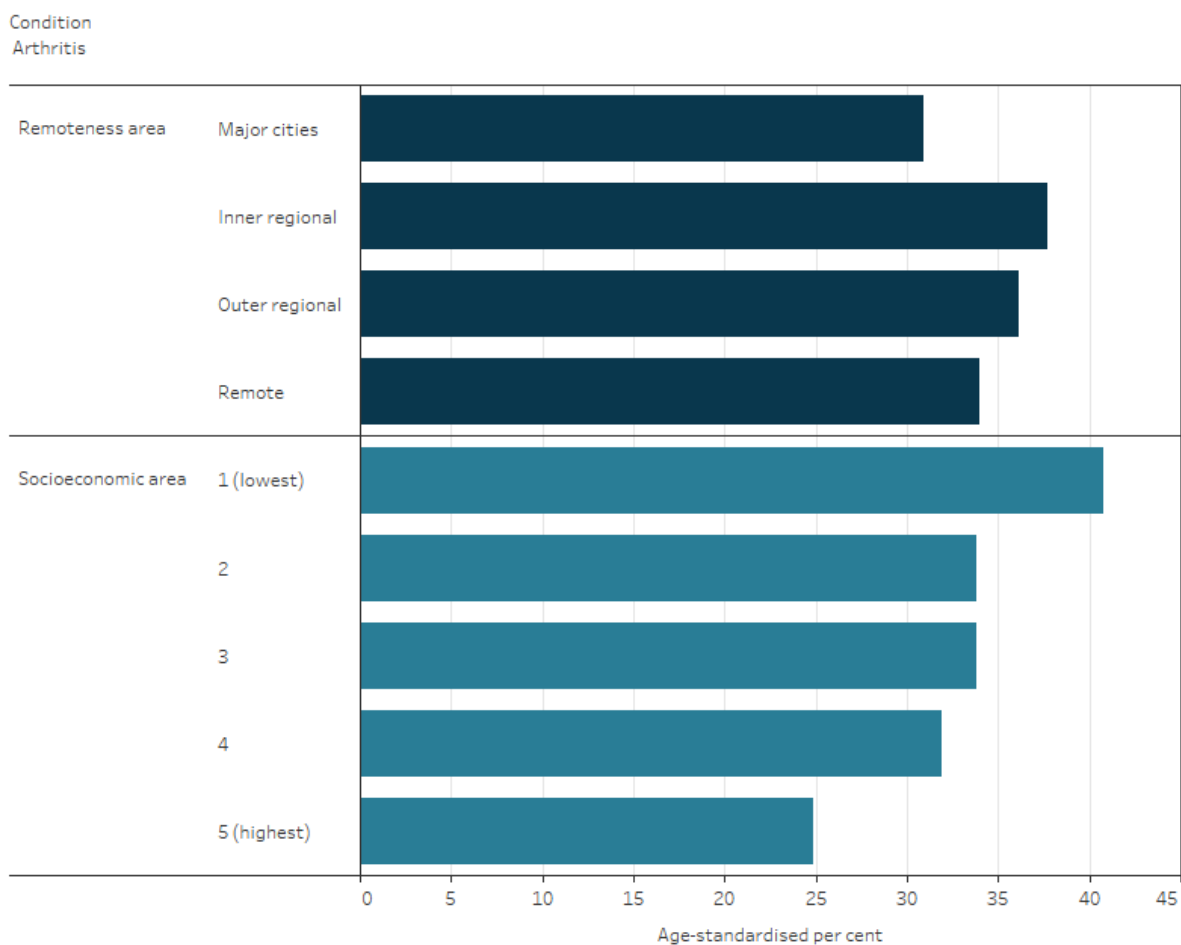
[Notes]

Source: ABS 2019a.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on the musculoskeletal conditions covered in this report, see:

- Back problems
- Arthritis
- Osteoarthritis
- Osteoporosis
- Rheumatoid arthritis
- Australian Bureau of Statistics National Health Survey: first results, 2017–18

Visit Chronic musculoskeletal conditions for more on this topic.

References

ABS (Australian Bureau of Statistics) 2010. Microdata: National Health Survey, 2007–08. ABS cat. no. 4324.0.55.001. Findings based on Expanded Confidentialised Unit Record File analysis. Canberra: ABS.

ABS 2013. Microdata: National Health Survey, 2011–12. ABS cat. no. 4324.0.55.001. Findings based on Expanded Confidentialised Unit Record File analysis. Canberra: ABS.

ABS 2016. Microdata: National Health Survey, 2014–15. ABS cat. no. 4324.0.55.001. Findings based on Expanded Confidentialised Unit Record File analysis. Canberra: ABS.

ABS 2018a. National Health Survey: first results, 2017–18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2018b. National Health Survey: users' guide, 2017–18. ABS cat. no. 4363.0.55.001. Canberra: ABS.

ABS 2019a. Microdata: National Health Survey, 2017–18. ABS cat. no. 4324.0.55.001. Findings based on Detailed Microdata analysis. Canberra: ABS.

ABS 2019b. Disability, ageing, and carers, Australia: summary of findings, 2018. ABS cat. no. 4430.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. Australian Burden of Disease Study 2015: interactive data on risk factor burden. Cat. no. BOD 25. Canberra: AIHW. Viewed 14 November 2019.

AIHW 2019c. Disease expenditure in Australia. Cat. no. HWE 76. Canberra: AIHW. Viewed 5 August 2019.

AIHW 2019d. National Hospital Morbidity Database 2017–18. Findings based on AIHW analysis. Canberra: AIHW.

AOANJRR (Australian Orthopaedic Association National Joint Replacement Registry) 2019. Annual report 2019: hip, knee and shoulder arthroplasty. Adelaide: AOA.

Briggs AM, Cross MJ, Hoy DG, Sànchez-Riera L, Blyth FM, Woolf AD et al. 2016. Musculoskeletal health conditions represent a global threat to healthy aging: a report for the 2015 World Health Organization World report on ageing and health. Gerontologist 56:S243–S255.

Britt H, Miller GC, Bayram C, Henderson J, Valenti L, Harrison C et al. 2016. A decade of Australian general practice activity 2006–07 to 2015–16. General practice series no. 341. Sydney: Sydney University Press.

RACGP (The Royal Australian College of General Practitioners) 2018. Guideline for the management of knee and hip osteoarthritis. 2nd edn. Melbourne: RACGP.

WHO (World Health Organization) 2019. Musculoskeletal conditions: fact sheet. Viewed 11 November 2019.

Burden of disease

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/burden-of-disease

Burden of disease analysis is the best measure of the impact of different diseases or injuries on a population. It combines the years of healthy life lost due to living with ill health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden). Fatal and non-fatal burden combined are referred to as total burden, reported using the disability-adjusted life years (DALYs) measure.

What is the overall burden of disease in Australia?

In 2015, Australians lost 4.8 million years of healthy life (DALY) due to illness or premature death. This is equivalent to 199 DALY per 1,000 population.

Half of this burden was non-fatal (50%); that is, from living with the impacts of disease and injury. Males experienced more burden, losing around 289,000 more years of healthy life in 2015 than females.

What is burden of disease?

Burden of disease analysis quantifies the gap between a population's actual health and an ideal level of health—that is, every individual living without disease or injury to the theoretical maximum life span—in a given year.

Burden of disease is measured using the summary measure disability-adjusted life years (DALYs). One DALY is 1 year of 'healthy life' lost due to illness (non-fatal burden, Years Lived with Disability) and/or death (fatal burden, Years of Life Lost)—the more DALYs associated with a disease or injury, the greater the burden. The total disease burden is the sum of all DALYs (burden) estimated for all diseases and injuries in the year of study for the whole population.

The attributable burden reflects the direct relationship between a risk factor (for example, overweight and obesity) and a disease outcome. It is the amount of burden that could be avoided if the risk factor were removed or reduced to the lowest possible exposure.

The Australian Burden of Disease Study (ABDS) 2015 provides burden of disease estimates for 216 diseases/injuries and 38 risk factors in Australia, at the national level and for various population groups. Details on the methods used to calculate burden of disease in the

What are the leading causes of burden?

The disease groups causing the most burden (DALY) in 2015 were cancer (18% of the total burden), cardiovascular diseases (14%), musculoskeletal conditions (13%), mental & substance use disorders (12%) and injuries (8.5%) (Figure 1). Together, they accounted for around two-thirds of the total burden in Australia.

Males and females experienced the majority of their burden from the same disease groups. However, cancer, cardiovascular diseases and injuries accounted for a greater proportion of the total burden in males, while musculoskeletal and neurological conditions accounted for more of the total burden in females (Figure 1).

Figure 1: Proportion of total burden, by disease group and sex, 2015

Disease group—select to highlight

- Cancer & other neoplasms
- Cardiovascular diseases
- Musculoskeletal conditions
- Mental & substance use disorders
- Injuries
- Respiratory diseases
- Neurological conditions
- Gastrointestinal disorders
- Endocrine disorders
- Oral disorders
- Infant & congenital conditions
- Hearing & vision disorders
- Infectious diseases
- Skin disorders
- Kidney & urinary diseases
- Blood & metabolic disorders
- Reproductive & maternal conditions

Source: AIHW 2019a.
http://www.aihw.gov.au/

How does burden change across a person's life?

The rate of burden (that is, the number of DALY per 1,000) generally increased with age, while the number of DALYs increased until around age 70, then decreased due to the smaller population.

While very old Australians (those aged 90 and over) account for a small part of the overall burden of ill health, because there are relatively few people in this group, the rate of burden experienced is the highest of any age group (Figure 2).

Figure 2: Number and rates of total burden (DALY, DALY per 1,000 population), by age group, 2015
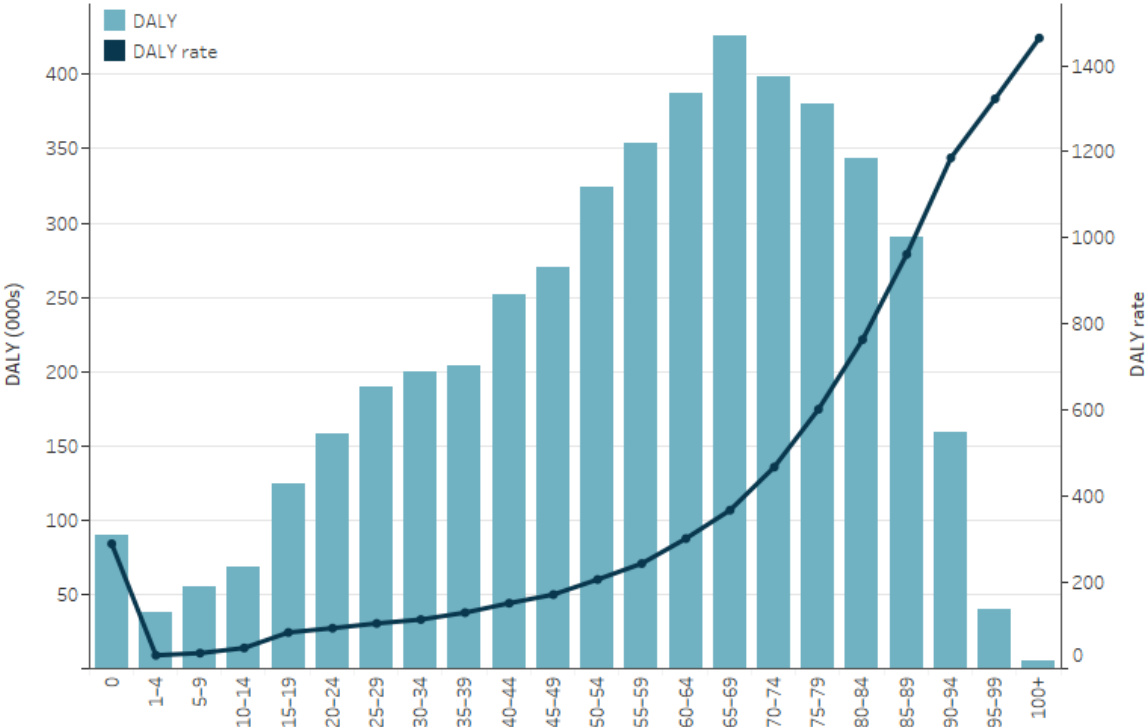
Source: AIHW 2019a.
http://www.aihw.gov.au/

The leading causes of burden differed depending on age (Figure 3):

- Infant and congenital conditions accounted for most of the burden in children aged under 5; 4 of the 5 leading causes of burden in this age group were from this disease group.
- Among children aged 5–14, asthma and mental disorders (including anxiety disorders and depressive disorders) contributed the most burden.
- Suicide and self-inflicted injuries was the leading cause of burden in young people aged 15–24 and those aged 25–44.
- Back pain and problems emerged as the second leading cause of burden for adults aged 25–44 and 45–64.
- Coronary heart disease was the leading cause of burden in adults aged 45–64, and Australians aged 65 and over.

Figure 3: Leading causes of total burden, by age group, 2015

Rank	Under 5	5–14	15–24	25–44	45–64	65+
1st	Pre-term & low birth weight complications (13.6%)	Asthma (13.1%)	Suicide & self-inflicted injuries (9.7%)	Suicide & self-inflicted injuries (7.3%)	Coronary heart disease (6.8%)	Coronary heart disease (10.9%)
2nd	Birth trauma & asphyxia (9.8%)	Anxiety disorders (10.6%)	Anxiety disorders (7.6%)	Back pain & problems (7.0%)	Back pain & problems (5.5%)	Dementia (8.3%)
3rd	Sudden infant death syndrome (4.9%)	Depressive disorders (7.1%)	Depressive disorders (7.0%)	Anxiety disorders (7.0%)	Lung cancer (4.5%)	Chronic obstructive pulmonary disease (6.5%)
4th	Cardiovascular defects (4.8%)	Conduct disorder (6.0%)	Asthma (5.8%)	Depressive disorders (6.6%)	Osteoarthritis (3.8%)	Stroke (4.8%)
5th	Asthma (3.7%)	Dental caries (4.8%)	Alcohol use disorders (5.7%)	Poisoning (4.4%)	Anxiety disorders (3.5%)	Lung cancer (4.5%)

Disease group—select to highlight

- Cancer
- Infant/congenital
- Mental/substance use
- Neurological
- Respiratory
- Cardiovascular
- Injuries
- Musculoskeletal
- Oral

Source: AIHW 2019a.
http://www.aihw.gov.au/

How has burden changed over time?

After accounting for the increase in size and ageing of the population (by using age standardised rates), the rate of burden (DALY) fell by 11% between 2003 and 2015 (from 208 to 184 DALY per 1,000 population). Most of this improvement came from a large reduction (20%) in the rate of fatal burden by preventing or delaying deaths from many diseases and injuries.

The leading causes of burden (based on age-standardised DALY rates) remained largely the same between 2003 and 2015 (Figure 4).

- Coronary heart disease was the leading cause of burden in both years of study, but the total burden rate for coronary heart disease fell by 43% between 2003 and 2015.

- Total burden rates also decreased for stroke, chronic obstructive pulmonary disease (COPD), lung cancer, bowel cancer and rheumatoid arthritis, resulting in a drop in rankings for most of these diseases.

- The rate of burden for dementia increased substantially (by 57%), but this may be partly due to changes in the practices of coding deaths due to dementia since 2006.

- Although type 2 diabetes had the same DALY rates over time, this resulted from an increase in burden from living with disease and a simultaneous reduction from dying prematurely due to the disease.

Figure 4: Change in disease ranking and age-standardised DALY rate (DALY per 1,000 population) between 2003 and 2015

2003 Age-standardised rate		Rank	Rank	2015 Age-standardised rate	
Coronary heart disease	20.8	1	1	Coronary heart disease	11.9
Stroke	7.8	2	2	Back pain and problems	8.0
Chronic Obstructive Pulmonary Disease	7.2	3	3	Chronic Obstructive Pulmonary Disease	6.7
Back pain and problems	6.9	4	4	Anxiety disorders	6.4
Lung cancer	6.8	5	5	Dementia	6.0
Anxiety disorders	6.4	6	6	Lung cancer	5.8
Depressive disorders	5.8	7	7	Depressive disorders	5.8
Suicide and self-inflicted injuries	5.3	8	8	Suicide and self-inflicted injuries	5.8
Asthma	4.9	9	9	Asthma	5.0
Bowel cancer	4.7	10	10	Stroke	4.6
Rheumatoid arthritis	4.5	11	11	Osteoarthritis	4.3
Dementia	3.8	12	12	Type 2 diabetes	3.8
Type 2 diabetes	3.8	13	13	Rheumatoid arthritis	3.6
Osteoarthritis	3.5	14	14	Bowel cancer	3.6
Breast cancer	3.5	15	15	Alcohol use disorders	3.0

Disease group—select to highlight
- Cancer
- Endocrine
- Mental
- Neurological
- Cardiovascular
- Injuries
- Musculoskeletal
- Respiratory

Source: AIHW 2019b.
http://www.aihw.gov.au/

Risk factors play a big role

Thirty-eight per cent of the total burden of disease (DALY) experienced by Australians in 2015 could have been prevented by reducing exposure to the risk factors included in this study.

The 5 risk factors that caused the most burden in 2015 were tobacco use (responsible for 9.3% of total burden), overweight and obesity (8.4%), dietary risks (7.3%), high blood pressure (5.8%) and high blood plasma glucose (including diabetes) (4.7%).

- Tobacco use contributed to 41% of all respiratory burden, 22% of all cancer burden and 12% of the cardiovascular burden.

- Overweight and obesity contributed to 45% of the burden from endocrine disorders, over a third of the burden from kidney & urinary diseases, and 19% of the cardiovascular disease burden.

- Dietary risks were responsible for a third of the burden from endocrine disorders and 40% of the burden from cardiovascular diseases (Table 1).

Table 1: Percentage of burden attributable to leading 5 risk factors for selected disease groups, 2015

Disease group	Tobacco use	Overweight & obesity	Dietary risks	High blood pressure	High blood plasma glucose
Cancer	22.1	7.8	4.2	. .	2.9
Cardiovascular	11.5	19.3	40.2	38.0	4.9
Respiratory	41.0	8.0	0.3	. .	. .
Endocrine	3.7	44.6	34.2	. .	98.0
Kidney/urinary	. .	35.6	7.7	34.1	53.7

Notes:

1. Estimates for diet are based on an analysis of the joint effects of all dietary risk factors included in the study following methods used in recent global burden of disease studies.

2. Blank cells '. .' indicate that the risk factor has no associated diseases or injuries in the disease group.

3. Estimates for different risk factors cannot be added to derive their total DALY, due to the complex pathways and interactions between them.

Source: AIHW 2019a.

How has risk factor burden changed over time?

The proportion of burden attributable to the risk factors fell between 2003 and 2015 (from 37% in 2003 to 36% in 2015). This reflects reductions in exposure to the risk factors, or reductions in burden from the linked diseases, or both.

After accounting for population increase and ageing between 2003 and 2015 (using age-standardised rates), there were notable falls in the rate of total burden (DALY) attributable to:

- high cholesterol (fell by 49%)
- high blood pressure (fell by 41%)
- dietary risks (fell by 34%)
- tobacco use (fell by 24%).

In contrast, the rate of burden attributable to illicit drug use increased by 18% between 2003 and 2015.

How does the burden vary between population groups?

Burden of disease varies greatly across different geographic areas and population groups due to many factors, including demographic, socioeconomic and environmental differences. This section presents findings by remoteness and socioeconomic areas (see Glossary).

Remoteness areas

- The age-standardised rate of burden (DALY) increased substantially from *Major cities* to the more remote areas. In 2015, people in *Remote and very remote* areas experienced a DALY rate 1.4 times that of people in *Major cities*.
- Most disease groups showed higher rates of burden with increasing remoteness. In particular, people in *Remote and very remote* areas experienced much higher rates of burden than those in *Major cities* from kidney and urinary diseases, injuries, and infectious diseases.
- Figure 5 shows DALY rates for some specific diseases by remoteness area. The burden of coronary heart disease, suicide and self-inflicted injuries, COPD and chronic kidney disease all increased with increasing remoteness.

See Rural and remote health.

Figure 5: Age-standardised DALY rate of selected diseases, by remoteness area, 2015
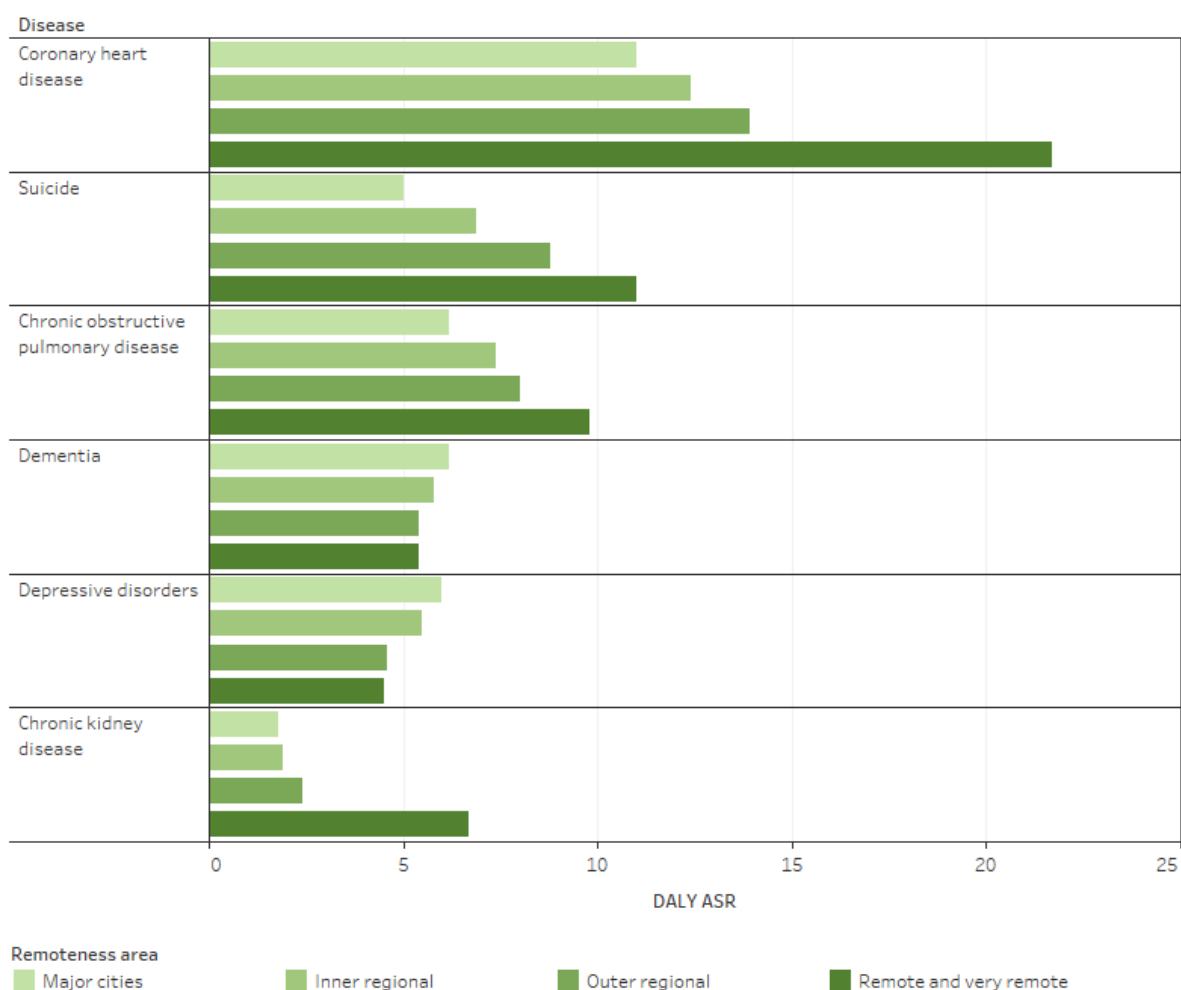
Notes
1. Suicide = suicide & self-inflicted injuries.
2. Rates were age-standardised to the 2001 Australian Standard Population and are expressed as DALY per 1,000 population.
Source: AIHW 2019b.
http://www.aihw.gov.au/

Socioeconomic areas

- In 2015, the age-standardised rate of burden (DALY) increased steadily from the highest socioeconomic area to the lowest socioeconomic area. The rate of burden for people in the lowest socioeconomic area was 1.5 times the rate for people in the highest socioeconomic area.

- The total burden in Australia would be 20% lower if all socioeconomic areas had the same rate of burden as the highest socioeconomic area.

- For many diseases, there was a strong gradient of decreasing burden rates with increasing socioeconomic position.

For risk factors where it was possible to estimate attributable burden by socioeconomic areas, there was a strong socioeconomic gradient in burden from all the risk factors, with the highest socioeconomic areas having lower rates of burden.

Differences in burden were greatest for tobacco use (the burden rate in the lowest socioeconomic area was 2.6 times that of the highest socioeconomic area), followed by intimate partner violence and high blood plasma glucose (both 2.4 times) (Figure 6).

See Health across socioeconomic groups.

Figure 6: DALY age-standardised rate for selected risk factors, by socioeconomic area, 2015
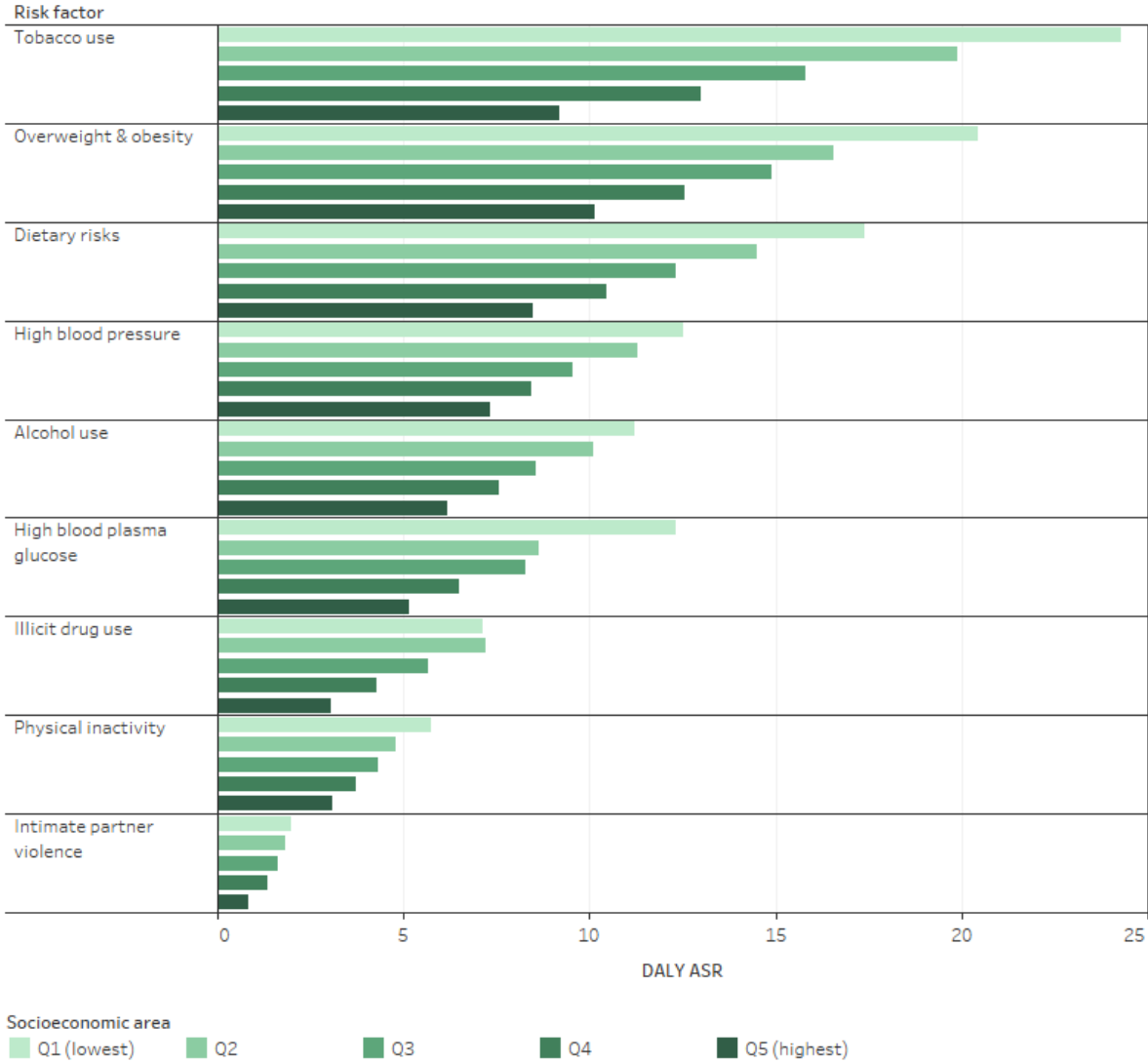
Note: Rates were age-standardised to the 2001 Australian Standard Population and are expressed as DALY per 1,000 population.
Source: AIHW 2019a.
http://www.aihw.gov.au/

Measuring the different costs of disease

As well as the human cost of diseases and injury that is measured through burden of disease analysis, there are financial costs associated with preventing and treating ill health, including medication, surgery and health infrastructure. In 2015–16,

approximately $7,100 was spent on health, per person (AIHW 2019d). Looking at both the human and financial costs provides a better understanding of the full impact of diseases.

When looking at disease groups, cancer had the greatest human cost, while musculoskeletal conditions were responsible for the most spending (Figure 7). There can be many reasons why a disease may have a large human cost but low health spending—and vice versa. For example, while reproductive and maternal health is associated with substantial spending through the health system, it does not have a high human cost because the outcome is usually positive (such as a healthy mother and baby).

Figure 7: Proportions of total burden and health expenditure, by disease group, 2015
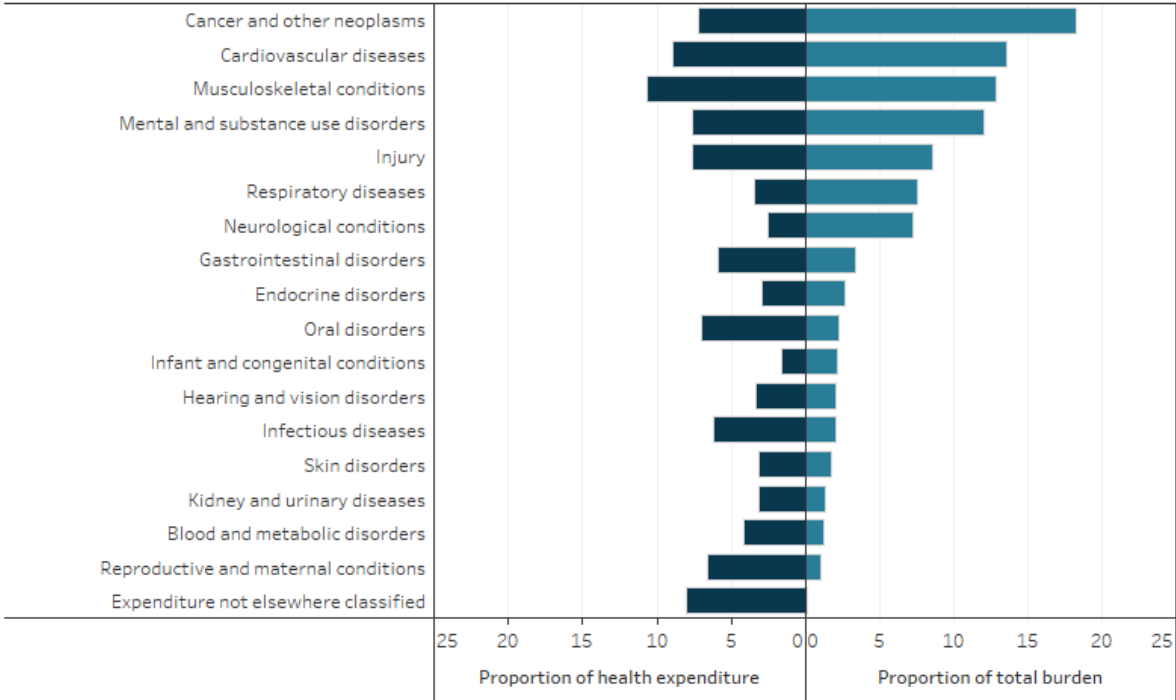
Sources: AHIW 2019a, 2019d.
http://www.aihw.gov.au/

Future work

The AIHW is currently updating Australia's burden of disease estimates to the 2018 reference year, including estimates for the Aboriginal and Torres Strait Islander population. Results are expected to be published in late 2021.

Where do I go for more information?

For more information on burden of disease, see:

- Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015

- Australian Burden of Disease Study: methods and supplementary material 2015
- Australian Burden of Disease Study 2015: Interactive data on disease burden
- Australian Burden of Disease Study 2015: Interactive data on risk factor burden
- Disease expenditure in Australia

Visit Burden of disease for more on this topic.

References

AIHW (Australian Institute of Health and Welfare) 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease Study series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015—summary report. Australian Burden of Disease Study series no. 18. Cat. no. BOD 21. Canberra: AIHW.

AIHW 2019c. Australian Burden of Disease Study: methods and supplementary material 2015. Australian Burden of Disease Study no. 20. Cat. no. BOD 23. Canberra: AIHW.

AIHW 2019d. Disease expenditure in Australia. Cat. no. HWE 76. Canberra: AIHW.

Cancer

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/cancer

Cancer is a large range of diseases in which some of the body's cells become defective, begin to multiply out of control, can invade and damage the area around them, and can also spread to other parts of the body to cause further damage.

There are more than 1 million people alive in Australia who have previously been diagnosed with cancer. During 1987–1991, 5 in 10 (51%) people survived for at least 5 years after their cancer diagnosis; more recent figures are closer to 7 in 10 (69%) people surviving at least 5 years.

This page presents projected cancer incidence and mortality estimates for 2020.

How common is cancer?

In 2020, it is estimated that:

- about 145,500 new cases of cancer will be diagnosed in Australia, an average of just under 400 people every day; more than half (53%) of these cases will be diagnosed in males
- the most commonly diagnosed cancers in males will be prostate cancer (16,700 cases), melanoma of the skin (9,500 cases), colorectal cancer (8,300 cases) and lung cancer (7,200 cases)
- the most commonly diagnosed cancers in females will be breast cancer (19,800 cases), colorectal cancer (7,200 cases), melanoma of the skin (6,700 cases) and lung cancer (6,000 cases).

The age-standardised incidence rate of all cancers combined rose from 384 cases per 100,000 people in 1982 to a peak of 507 cases per 100,000 in 2008, before decreasing to 490 per 100,000 in 2016. Age-standardised rates are estimated to continue to fall to 480 cases per 100,000 people in 2020 (Figure 1).

The increasing trend to 2008 was largely due to a rise in the number of diagnosed prostate cancers in males and breast cancer in females. This trend may have been the result of increased prostate-specific antigen testing, the introduction of national cancer screening programs, and improvements in technologies and techniques used to identify and diagnose cancer.

Please select sex:
Males

Notes
1. Age-standardised rates are presented as cases per 100,000 of the selected sex (for example, if persons is selected, the rate will be cases per 100,000 persons).
2. Cases and rates for 2016, 2017, 2018 and 2019 are based on projections.
Source: Australian Cancer Database 2015.
http://www.aihw.gov.au

Stage at diagnosis

Cancer stage at diagnosis refers to the extent or spread of cancer at the time of diagnosis. The AIHW, Cancer Australia and state and territory cancer registries worked together to produce national population-level data on cancer stage at diagnosis for the 5 most commonly diagnosed cancers (breast, prostate, colorectal and lung cancers and melanoma of the skin) diagnosed in 2011. These cancers were assigned a 'stage' from I to IV. The higher the number, the further the cancer had spread at the time of diagnosis. The national statistics on cancer by stage at diagnosis from the above-mentioned project remain the most recent available.

Collection and analysis of data on cancer stage at diagnosis enhances the understanding of the variation in cancer stage at the time of diagnosis and how it affects survival.

In 2011:

- most cancers were diagnosed at stage I or II (66%), with melanoma of the skin having the highest percentage diagnosed at stage I (78%)
- 12% of cases diagnosed with 1 of the 5 most commonly diagnosed cancers presented with a stage IV cancer
- stage IV cancer accounted for 42% of lung cancers diagnosed, which was the highest percentage of the 5 cancers.

Survival

Information on survival from cancer indicates cancer prognosis and the effectiveness of treatment available. Relative survival refers to the probability of being alive for a given amount of time after diagnosis compared to the general population (see Glossary). A 5-year relative survival figure of 100% means that the cancer has no impact on people's chance of still being alive 5 years after diagnosis, whereas a figure of 50% means that the cancer has halved that chance.

During 2012–2016 in Australia:

- individuals diagnosed with cancer had, on average, a lower (69%) chance of surviving for at least 5 years after diagnosis compared with their counterparts in the general population (referred to as '5-year relative survival')
- among people who had already survived 5 years past their cancer diagnosis, the chance of surviving at least another 5 years was 92%
- survival rates vary considerably between cancer types—cancers such as testicular, thyroid and prostate cancer have 5-year survival rates over 95% while cancers such as pancreatic, liver and lung cancers and mesothelioma have 5-year survival rates of less than 20%
- 5-year survival rates increased from 5 in 10 (51%) in 1987–1991 to nearly 7 in 10 (69%) in 2012–2016.

Survival by stage of diagnosis

The stage of cancer at diagnosis and subsequent treatment outcomes are important determinants of cancer survival. Five-year relative survival rates were highest for cancers diagnosed at earlier stages.

For the 5 cancers where stage at diagnosis data was collected in 2011, 5-year relative survival for:

- breast cancer in females at Stage I was 100%; at Stage IV it was 32%
- colorectal cancer at Stage I was 99%; at Stage IV it was 13%
- lung cancer at Stage I was 68%; at Stage IV it was 3.2%
- melanoma of the skin at Stage I was 99%; at Stage IV it was 26%

- prostate cancer in males at Stage 1 was 100%; at Stage IV it was 36%.

Impact

Deaths

It is estimated that, in 2020, around 48,000 people will die from cancer, an average of around 130 deaths every day. Males are estimated to account for 56% of these deaths.

In 2020, it is estimated the age-standardised mortality rate from cancer will be 150 deaths per 100,000 people; in 1982 the mortality rate was 209 deaths per 100,000 people (Figure 2). See Causes of death.

Figure 2: Cancer-related deaths and age-standardised mortality rates, by sex, 1982 to 2019

Please select sex:
Males
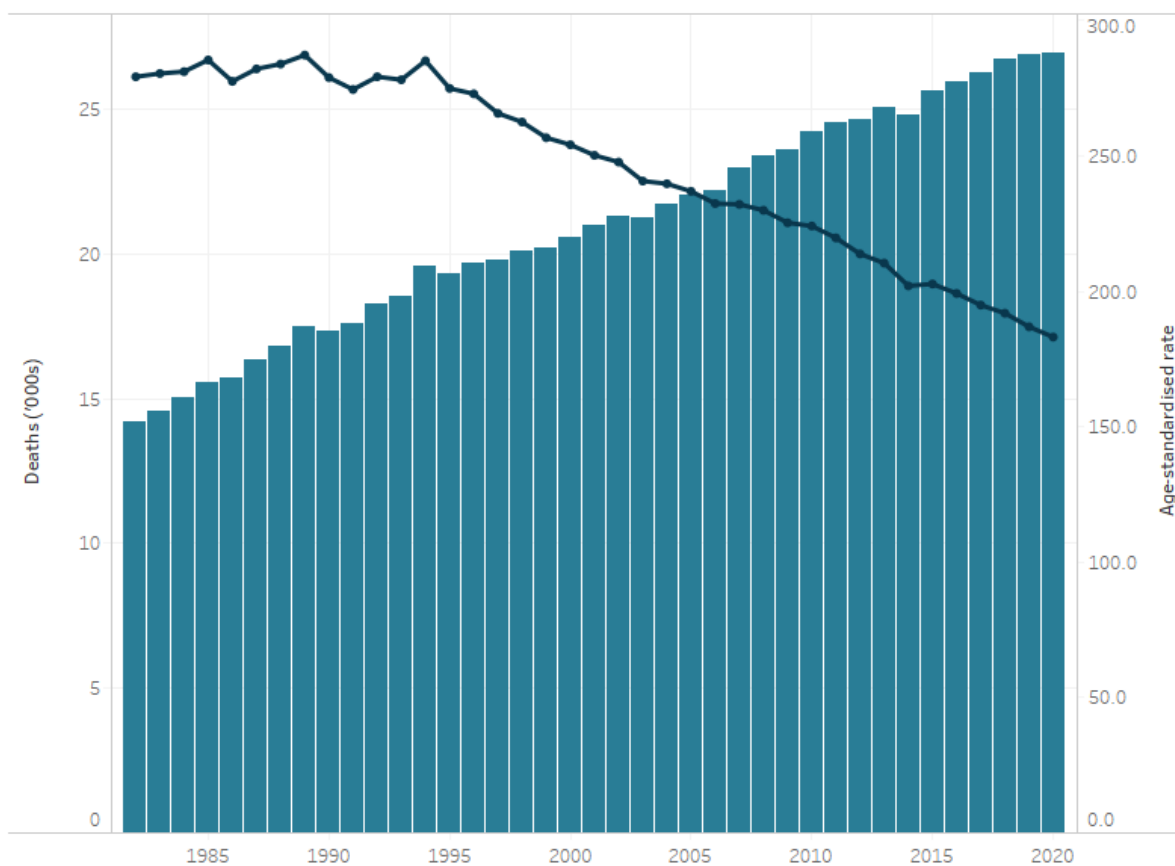
Notes
1. Age-standardised rates are presented as deaths per 100,000 of the selected sex (for example, if persons is selected, the rate will be deaths per 100,000 persons).
2. Deaths and mortality rates for 2017, 2018 and 2019 are based on projections.
Source: National Mortality Database.
http://www.aihw.gov.au

Burden of disease

Burden of disease analysis measures the impact of disease and injury in a population by estimating the 'disability-adjusted life years' (DALY) experienced by the population. This measure counts the combined years of healthy life lost due to living with disease and injury (non-fatal burden), and dying prematurely (fatal burden).

In 2015, cancer contributed to 18% of the total burden and was the leading disease group causing burden. Dying from cancer accounted for 34% of the fatal burden in Australia (AIHW 2019a). See Burden of disease.

Expenditure

In 2015–16, total recurrent expenditure on health goods and services was $160.3 billion, of which an estimated 73% ($117 billion) was able to be attributed to specific disease groups. Cancer and other neoplasms (tumours) was the fifth most expensive disease group and accounted for 7.2% of the $117 billion disease-specific expenditure (AIHW 2019b). See Health expenditure.

Treatment and management

The treatment and management of cancer may involve surgery, chemotherapy, radiation therapy and palliative care. See Cancer screening and treatment.

Where do I go for more information?

For more information on cancer, see:

- Cancer data in Australia
- Cancer in Australia 2019
- Cancer statistics for small geographic areas
- Mesothelioma in Australia 2018

Visit Cancer for more on this topic.

References

AIHW (Australian Institute of Health and Welfare) 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015—summary report. Australian Burden of Disease Study series no. 18. Cat. no. BOD 21. Canberra: AIHW.

AIHW 2019b. Disease expenditure in Australia. Cat. no. HWE 76. Canberra: AIHW.

Causes of death

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/causes-of-death

In 2018, there were 158,500 deaths in Australia (82,300 males; 76,200 females). These deaths had a wide range of causes but some were more common than others.

Leading causes of death is a useful measure of population health. It is of most value when making comparisons over time or between population groups. Changes in the pattern of causes of death can result from changes in behaviours, exposures to disease or injury, and social and environmental circumstances, as well as from data coding practices.

About deaths data

Causes of death are documented on death certificates by medical practitioners or coroners, and coded by the Australian Bureau of Statistics using the World Health Organization International Statistical Classification of Diseases and Related Health Problems (ICD).

The ICD allows diseases that cause death to be grouped in a way that is meaningful for monitoring population health. The AIHW uses the disease groups recommended by the World Health Organization (Becker et al. 2006), with minor modifications to suit the Australian context.

Leading causes of death presented in this snapshot are based on the 'underlying cause of death', which is the disease or injury that began the train of events leading to death.

Most deaths, however, result from more than one contributing disease or condition. Analyses using 'associated causes of death' may offer insight into the disease processes occurring at the end of life or, for injury causes of death, the nature of the injury.

What are the leading causes of death?

In 2018, the leading cause of death for males was coronary heart disease, accounting for 10,300 (13%) deaths. Dementia including Alzheimer's disease was the leading cause of death for females, accounting for 9,000 (12%) deaths, closely followed by coronary heart disease (7,300; 10% of deaths). Cerebrovascular disease (which includes stroke), lung cancer and chronic obstructive pulmonary disease (COPD) make up the top 5 leading underlying causes of death in Australia for males and females of all ages combined (Figure 1).

Males account for more deaths due to coronary heart disease, lung cancer and COPD. Females account for the majority of deaths due to cerebrovascular disease and dementia including Alzheimer's disease.

Figure 1: Leading causes of death, by sex, 2018
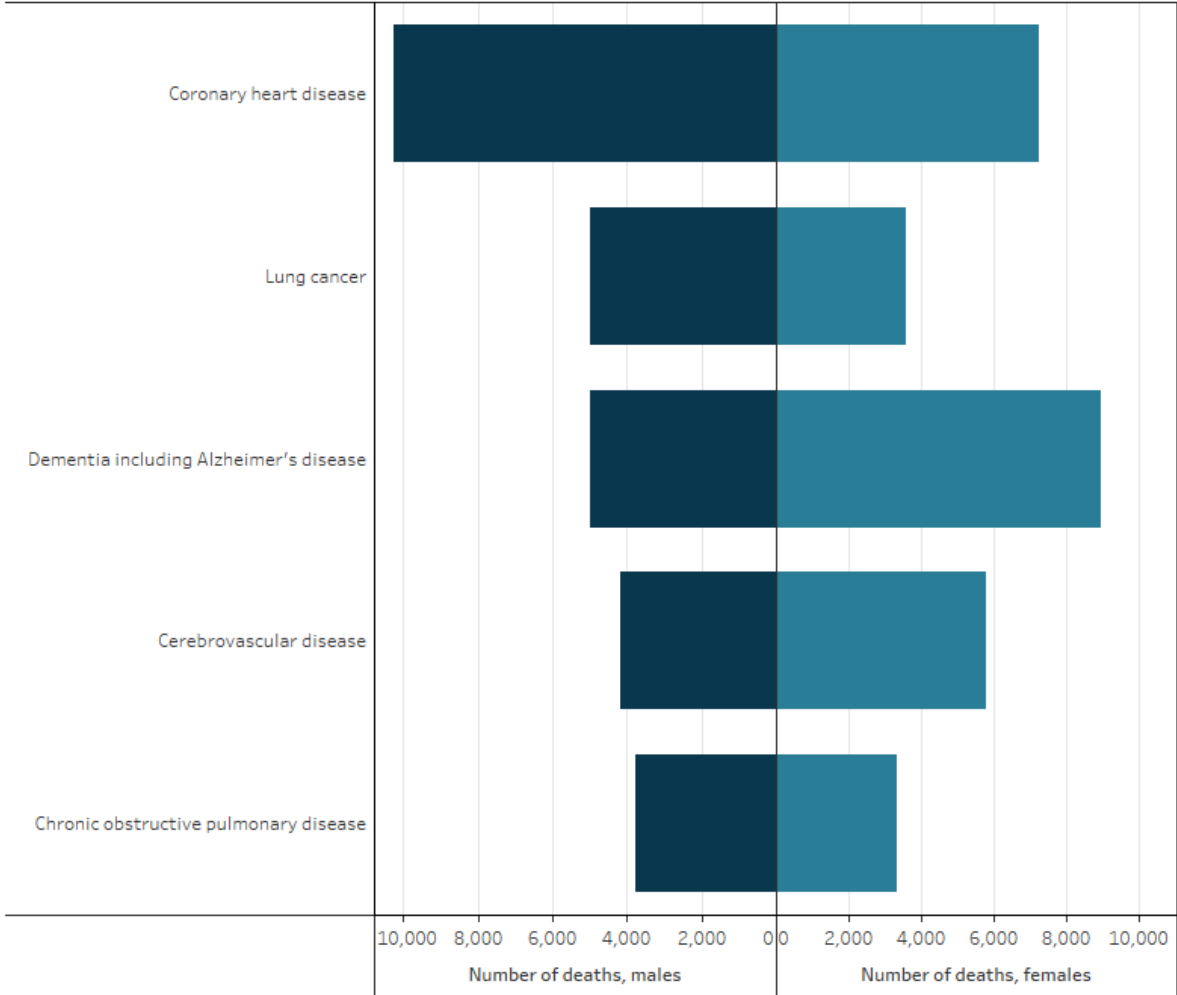
Note: Leading causes of death are based on underlying causes of death and classified using an AIHW-modified version of Becker et al. 2006.
Source: AIHW National Mortality Database.
http://www.aihw.gov.au

Leading causes of death by age

As well as differences by sex, the leading causes of death vary by age. Chronic diseases feature more prominently among people aged 45 and over, while the leading causes among people aged 1–44 are external, such as land transport accidents, suicides and accidental poisoning (Figure 2).

Among infants, perinatal and congenital conditions (which includes respiratory and cardiovascular disorders specific to the perinatal period, birth trauma and congenital malformations) caused most deaths. See Health of mothers and babies.

Land transport accidents were the most common cause of death among children aged 1–14 (accounting for 11% of all deaths in this age group). Suicide was the leading cause of death among people aged 15–24 and 25–44. Coronary heart disease and lung cancer were the leading causes of death for people aged 45–74. Dementia including Alzheimer's disease was the second leading cause of death among people aged 75 and over (responsible for 12% of deaths), behind coronary heart disease (13%).

Figure 2: Leading causes of death, by age group, 2016–2018

Rank	Under 1	1–14	15–24	25–44	45–64	65–74	75+
1	Perinatal and congenital conditions	Land transport accidents	Suicide	Suicide	Coronary heart disease	Lung cancer	Coronary heart disease
2	Other ill-defined causes	Perinatal and congenital conditions	Land transport accidents	Accidental poisoning	Lung cancer	Coronary heart disease	Dementia including Alzheimer's disease
3	Sudden infant death syndrome	Brain cancer	Accidental poisoning	Land transport accidents	Suicide	Chronic obstructive pulmonary disease	Cerebrovascular disease
4	Accidental threats to breathing	Accidental drowning and submersion	Assault	Coronary heart disease	Colorectal cancer	Colorectal cancer	Chronic obstructive pulmonary disease
5	Cardiomyopathy	Suicide	Other ill-defined causes	Breast cancer	Breast cancer	Cerebrovascular disease	Lung cancer

(Column header: Age group)

Disease group: click on a group to highlight those causes of death

- Cancer
- Ill-defined
- Injuries
- Respiratory
- Cardiovascular
- Infant & congenital
- Neurological

Notes

1. 'Other ill-defined causes' include the following codes: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (ICD-10 codes R00–R99, excluding R95: Sudden infant death syndrome (SIDS); Cardiac arrest, unspecified (I46.9); Respiratory failure of newborn (P28.5); Other unspecified convulsions (R56.8)). AIHW General Record of Incidence of Mortality (GRIM) data are available for selected leading causes of death.

2. There were no suicide deaths in children under 5. The number of deaths of children attributed to suicide can be influenced by coronial reporting practices, see ABS 3303.0 – Causes of Death, Australia, 2011 (Explanatory Notes 92–95) for further information.

Source: AIHW National Mortality Database.

Trends

In Australia, death rates have continued to decline since at least the early 1900s. The age-standardised death rate fell by 73% between 1907 and 2018 for males, and by 77% for females. This was largely driven by the decline of infant and child deaths since the early 1900s. The leading causes of death at that time were infectious diseases and diseases of the circulatory system. As people are now more likely to reach older ages, dementia including Alzheimer's disease, cardiovascular diseases and other chronic conditions (notably cancers) are becoming more prominent as causes of death.

The decline in death rates is reflected in improved life expectancy at birth. A boy born in 2016–2018 can expect to live to the age of 80.7 and a girl can be expected to live to 84.9 years, compared to 55.2 and 58.8 years, respectively, in 1901–1910 (ABS 2014; ABS 2019).

The 10 leading causes of death in 2018 were generally the same as in 2008, albeit with different rankings (Figure 3).

- For males, coronary heart disease was the leading cause of death in both these years, accounting for 17% of deaths in 2008 and 13% in 2018. However, the death rate from coronary heart disease has decreased over the decade. The largest change in leading causes of death for males from 2008 to 2018 was the rise of dementia including Alzheimer's disease, from seventh to third place.

- For females, coronary heart disease, cerebrovascular disease, breast cancer and colorectal cancer fell in rank from 2008 to 2018. On the other hand, there were notable increases—for dementia including Alzheimer's disease (from third to first place) and for COPD (from seventh to fifth place).

- Kidney failure moved out of the 10 leading causes of death for females after 2008 and was replaced by influenza and pneumonia in 2018.

Figure 3: Leading causes of death, by sex, 2008 and 2018

Coloured lines link the leading causes of death in 2008 with those in 2018: a grey line means that the ranking of the cause of death remained the same in 2018 as in 2008; a green line, that the ranking of the cause of death rose compared with that in 2008; and a blue line, that the ranking of the cause of death in 2018 decreased compared with that in 2008.

Male deaths	2008 %	2018	%
Coronary heart disease	17.1	Coronary heart disease	12.5
Lung cancer	6.8	Lung cancer	6.1
Cerebrovascular disease	6.4	Dementia including Alzheimer's disease	6.1
Chronic obstructive pulmonary disease	4.3	Cerebrovascular disease	5.1
Prostate cancer	4.1	Chronic obstructive pulmonary disease	4.6
Colorectal cancer	3.8	Prostate cancer	4.0
Dementia including Alzheimer's disease	3.7	Colorectal cancer	3.5
Diabetes	2.9	Diabetes	3.1
Suicide	2.5	Suicide	2.8
Cancer of unknown or ill-defined primary site	1.9	Cancer of unknown or ill-defined primary site	2.0

Female deaths	%		%
Coronary heart disease	16.0	Dementia including Alzheimer's disease	11.8
Cerebrovascular disease	10.3	Coronary heart disease	9.5
Dementia including Alzheimer's disease	7.8	Cerebrovascular disease	7.6
Lung cancer	4.2	Lung cancer	4.7
Breast cancer	3.9	Chronic obstructive pulmonary disease	4.4
Colorectal cancer	3.5	Breast cancer	3.9
Chronic obstructive pulmonary disease	3.4	Colorectal cancer	3.2
Diabetes	2.9	Diabetes	2.8
Heart failure	2.9	Heart failure	2.4
Kidney failure	1.9	Influenza and pneumonia	2.2

Notes
1. Rankings are based on the number of deaths; a decline in rank does not necessarily mean a decline in the number of deaths.
2. Data for 2018 are based on the preliminary version of cause of death data and are subject to further revision by the Australian Bureau of Statistics.
Source: AIHW National Mortality Database.
http://www.aihw.gov.au

Variation between population groups

Leading causes of death differ between population groups. This may be driven by variations in the population characteristics, causes of death at different ages,

characteristics of the place where people live, the prevalence of illness and risk factors, and access to health services.

Aboriginal and Torres Strait Islander Australians

- In 2014–2018, the 5 leading causes of death for Indigenous Australians were coronary heart disease, diabetes, lung cancer, COPD and suicide.

- For Indigenous Australians, the age-standardised death rate for diabetes was over 5 times as high as for non-Indigenous Australians (78 compared with 15 deaths per 100,000 population). For COPD, it was almost 3 times as high (70 compared with 24 deaths per 100,000 population).

- Diabetes and suicide were not included in the 5 leading causes of death for non-Indigenous Australians (which were coronary heart disease, dementia including Alzheimer's, cerebrovascular disease, lung cancer, and COPD) (Figure 4).

See Indigenous life expectancy and deaths.

Figure 4: Leading causes of death, by Indigenous status, 2014–2018

Rank	Indigenous	Non-Indigenous
1	Coronary heart disease	Coronary heart disease
2	Diabetes	Dementia including Alzheimer's disease
3	Lung cancer	Cerebrovascular disease
4	Chronic obstructive pulmonary disease	Lung cancer
5	Suicide	Chronic obstructive pulmonary disease

Legend:
- Cancer
- Endocrine
- Neurological
- Cardiovascular
- Injuries
- Respiratory
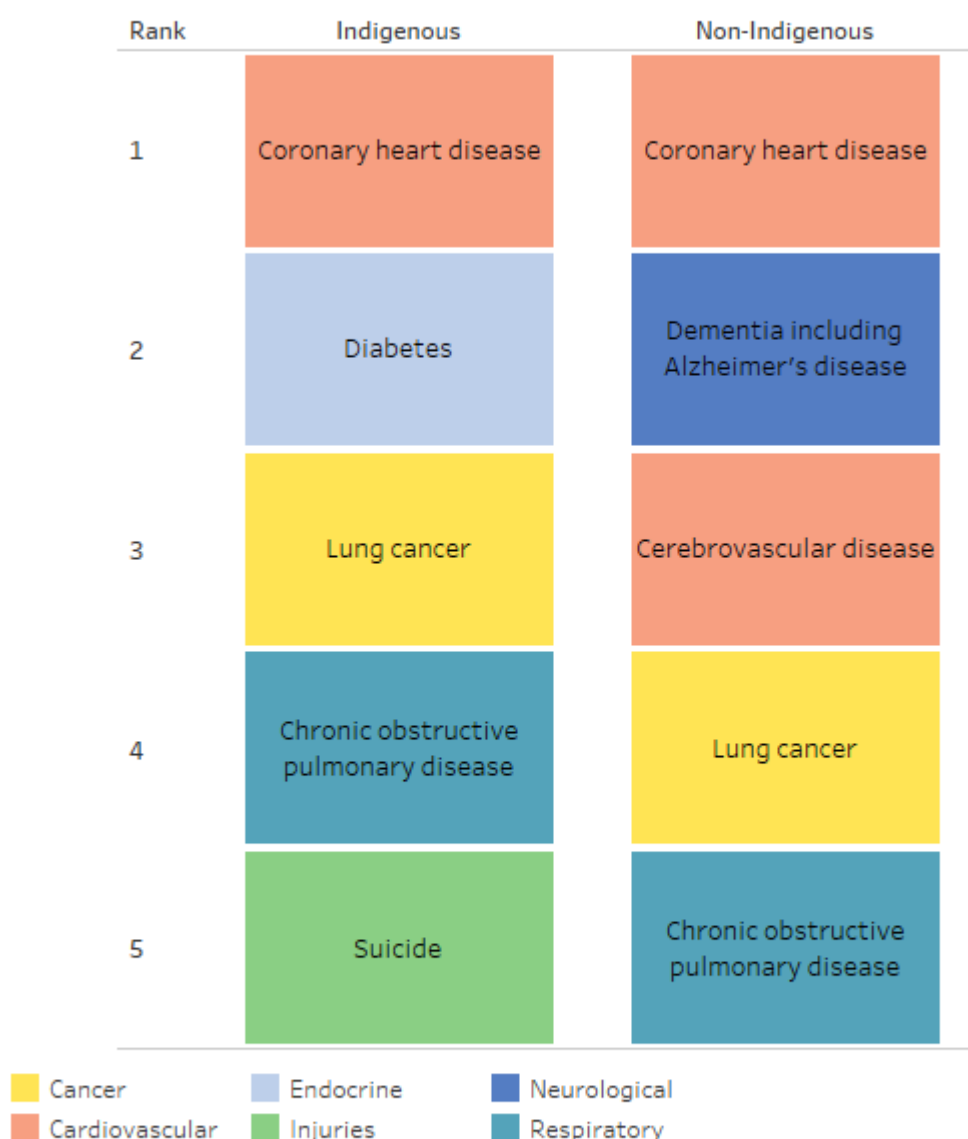
Note: Mortality data by Indigenous status are restricted to those 5 states and territories where information on Indigenous status is considered of sufficient quality and completeness of reporting: New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
Source: AIHW National Mortality Database.
http://www.aihw.gov.au

Remoteness areas

- In 2014–2018, the overall age-standardised death rate increased with increasing remoteness. In *Very remote* areas, the age-standardised mortality rate was 1.5 times the rate in *Major cities* (773 and 506 deaths per 100,000 population respectively).

- The top 5 causes of death in *Very remote* areas were the same as for the total Indigenous population—coronary heart disease, diabetes, COPD, lung cancer and suicide.

- Coronary heart disease was the leading cause of death across all remoteness areas; in *Very remote* areas, the age-standardised death rate was 1.7 times the rate in *Major cities* (97 and 59 deaths per 100,000 population respectively).

- Diabetes was the second leading cause of death in *Very remote* areas and seventh in *Major cities*—the age-standardised death rates were almost 4 times as high in *Very remote* areas as in *Major cities* (57 and 14 deaths per 100,000 respectively).

- In *Very remote* areas, the age-standardised death rates for suicide were 2.2 times as high as in *Major cities* (24 and 11 deaths per 100,000 respectively).

- Dementia including Alzheimer's disease had a lower ranking in *Remote and very remote* areas compared with *Major cities* and *Regional* areas (Figure 5).

See [Rural and remote health](#).

Figure 5: Leading causes of death, by remoteness area, 2014–2018

Remoteness area

Rank	Major cities	Inner regional areas	Outer regional areas	Remote areas	Very remote areas
1	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease
2	Dementia including Alzheimer's disease	Dementia including Alzheimer's disease	Dementia including Alzheimer's disease	Lung cancer	Diabetes
3	Cerebrovascular disease	Cerebrovascular disease	Lung cancer	Chronic obstructive pulmonary disease	Chronic obstructive pulmonary disease
4	Lung cancer	Lung cancer	Cerebrovascular disease	Dementia including Alzheimer's disease	Lung cancer
5	Chronic obstructive pulmonary disease	Chronic obstructive pulmonary disease	Chronic obstructive pulmonary disease	Diabetes	Suicide

Legend: ■ Cancer ■ Cardiovascular ■ Endocrine ■ Injuries ■ Neurological ■ Respiratory

Source: AIHW National Mortality Database.
http://www.aihw.gov.au

Socioeconomic areas

- In the period 2014—2018, the overall age-standardised death rate decreased with increasing socioeconomic position. For people living in the lowest socioeconomic areas, the age-standardised death rate was 1.5 times the rate for people living in the highest socioeconomic areas (638 and 432 deaths per 100,000 respectively).

- Four leading causes of death were common across all 5 socioeconomic areas—coronary heart disease, dementia including Alzheimer's disease, cerebrovascular disease and lung cancer. Colorectal cancer was the fifth leading cause of death for the highest socioeconomic areas, while in the other socioeconomic areas this was COPD.

- For people living in the lowest socioeconomic areas, age-standardised death rates for diabetes, COPD and lung cancer were about twice those for people living in the

highest socioeconomic areas (diabetes: 23 and 10 deaths per 100,000 respectively; COPD: 35 and 15 deaths per 100,000 respectively; and lung cancer: 38 and 20 deaths per 100,000 respectively).

See Health across socioeconomic groups.

Where do I go for more information?

For more information on causes on death in Australia, see:

- Deaths in Australia
- General incidence of mortality (GRIM) data
- Mortality over regions and time (MORT) books
- Australian Bureau of Statistics (ABS) Deaths, Australia, 2018
- ABS Causes of death, Australia, 2018

Visit Life expectancy & deaths for more on this topic.

References

ABS (Australian Bureau of Statistics) 2014. Australian historical population atatistics, 2014. ABS cat. no. 3105.0.65.001. Canberra: ABS.

ABS 2019. Life tables, states, territories and Australia, 2016–2018. ABS cat. no. 3302.0.55.001. Canberra: ABS.

Becker R, Silvi J, Ma Fat D, L'Hours A & Laurenti R 2006. A method for deriving leading causes of death. Bulletin of the World Health Organization 84:297–304.

Chronic conditions and multimorbidity

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/chronic-conditions-and-multimorbidity

Chronic conditions are an ongoing cause of substantial ill health, disability and premature death, making them an important global, national and individual health concern. Also referred to as chronic diseases, non-communicable diseases or long-term health conditions, chronic conditions are generally characterised by their long-lasting and persistent effects.

Chronic conditions often have complex and multiple causes. They are not usually immediately life-threatening but tend to develop gradually, becoming more common with age. Once present, they often persist throughout a person's life, so there is generally a need for long-term management by individuals and health professionals.

Many people with chronic conditions do not have a single, predominant condition, but rather they experience multimorbidity—the presence of 2 or more chronic conditions in a person at the same time. People living with multimorbidity often have complex health needs and report poorer overall quality of life.

For health service providers, multimorbidity can make treatment more complex and can require ongoing management and coordination of specialised care across multiple parts of the health system. This places a heavy demand on Australia's health care system, and requires substantial economic investment. A key focus of the Australian health system, therefore, is the prevention and better management of chronic conditions to improve health outcomes (Department of Health 2019).

Selected chronic conditions

Although the term 'chronic conditions' covers a diverse group of conditions, 10 chronic conditions are the focus of analysis on this page: arthritis, asthma, back pain and problems, cancer, cardiovascular diseases (selected heart, stroke and vascular diseases; excluding hypertension), chronic obstructive pulmonary disease (COPD), diabetes, chronic kidney disease, mental and behavioural conditions (including mood disorders, alcohol and drug problems and dementia), and osteoporosis.

These conditions were selected because they are common, pose significant health problems, and have been the focus of ongoing national surveillance efforts (ABS 2018). In many

instances, action can be taken to prevent these conditions, making them an important focus for preventative health initiatives (Department of Health 2020).

Self-reported data from the Australian Bureau of Statistics 2017–18 National Health Survey (NHS) provide estimates of the number of Australians affected by 1 or more of the 10 selected chronic conditions, and how living with chronic conditions affects their lives (ABS 2018, 2019).

Findings on this page are largely based on analysis of NHS data as these data enable us to look at the co-occurrence of the selected chronic conditions across the Australian population to produce estimates of multimorbidity. Estimates presented here may differ from those reported elsewhere due to differences in the data source used, including differences in the method of data collection (for example, self-report survey or diagnostic survey), and the specific chronic conditions included in analysis. Multimorbidity estimates presented here are of multimorbidity associated with the 10 selected chronic conditions only, and do not estimate the prevalence of multimorbidity more broadly.

For further detail on some of the most common chronic conditions see: Bone and joint health, Cancer, Chronic kidney disease, Chronic respiratory conditions, Coronary heart disease, Dementia, Diabetes, Mental health.

How common are chronic conditions?

Almost half of Australians (47%, or more than 11 million people) were estimated to have 1 or more of the 10 selected chronic conditions in 2017–18 (ABS 2018).

Mental or behavioural conditions; back pain and problems; and arthritis were the most common of the 10 selected chronic conditions. Based on self-reported information from the 2017–18 NHS, it was estimated that about:

- 4.8 million (20%) people had a mental or behavioural condition, which was the most commonly reported chronic condition for both males and females (Figure 1)
- 4 million (16%) had back pain and problems, which includes sciatica, disc disorders, and curvature of the spine
- 3.6 million (15%) had arthritis, with females (18%) more likely than males (12%) to have the condition.

The most common chronic conditions varied by age group. Of the 10 selected conditions in 2017–18:

- mental and behavioural conditions were the most common conditions among people aged 15–44 (22%)
- back pain and problems, and arthritis were the most common conditions among people aged 45–64 (25% each)
- almost half (49%) of people aged 65 and over were estimated to have arthritis—the most common chronic condition among people in this age group (ABS 2018).

Four in 5 Australians aged 65 and over (80%) were estimated to have 1 or more of the selected chronic conditions in 2017–18 (ABS 2018).

Figure 1: Most common chronic conditions by sex and age, 2017–18

Filter
◉ Sex
○ Age group
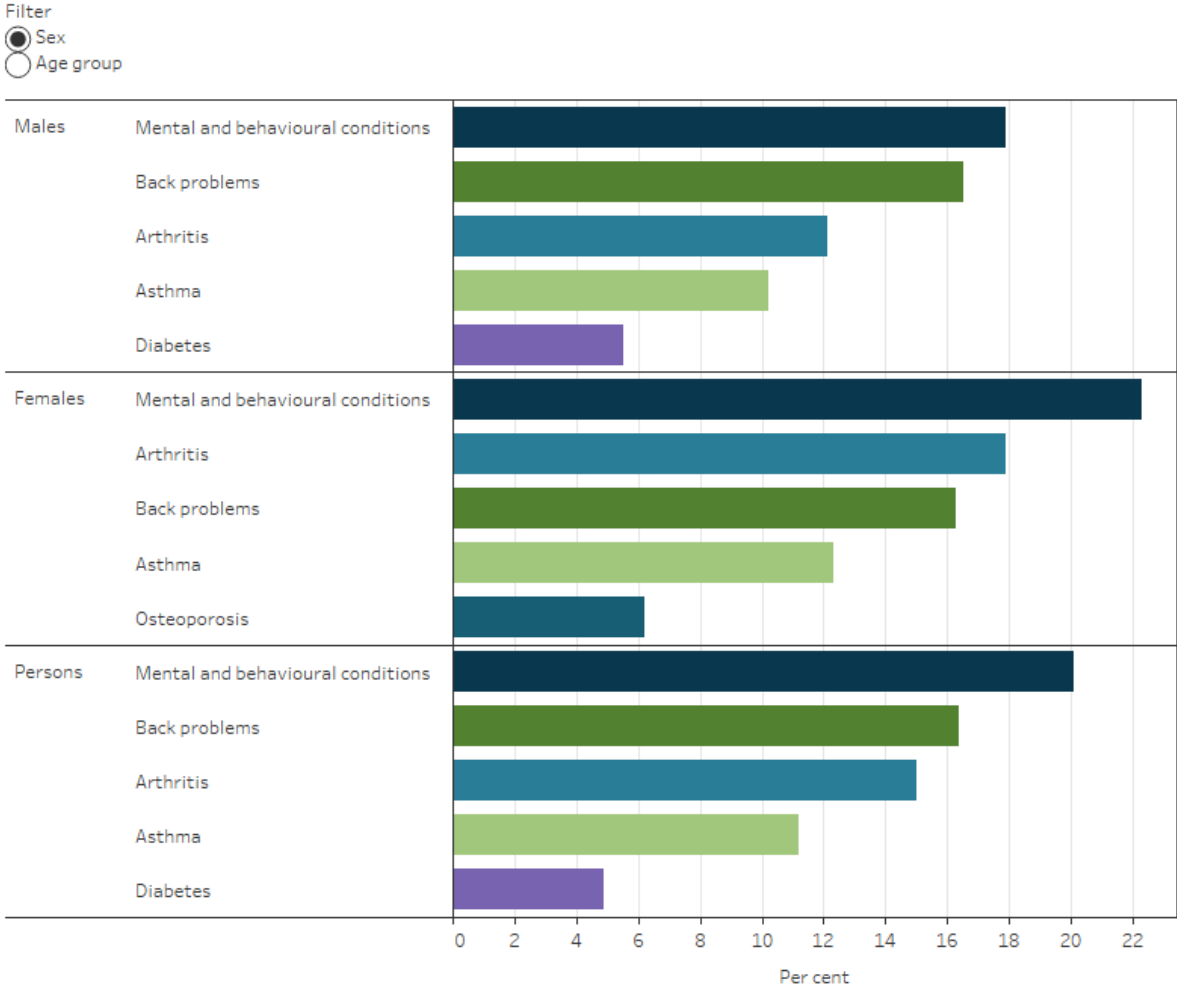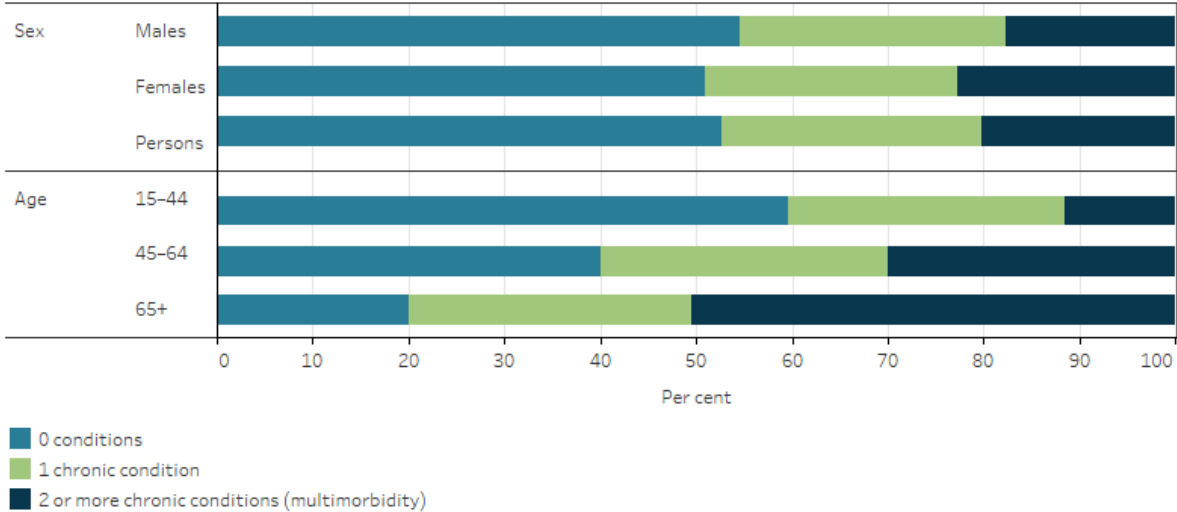

[Notes]

Source: ABS 2018.
http://www.aihw.gov.au/

How common is multimorbidity?

It is estimated that 20% of Australians (4.9 million people) had 2 or more of the 10 selected chronic conditions in 2017–18, a state of health known as multimorbidity (ABS 2019).

Females were more likely to have multimorbidity than males (23% compared with 18%) (ABS 2019) (Figure 2). This difference remained after adjusting for differences in the age structure between females and males.

Multimorbidity becomes more common with age. In 2017–18, people aged 65 and over were more likely to have 2 or more of the selected conditions compared with people aged 15–44 (51% compared with 12%) (Figure 2).

Figure 2: Number of chronic conditions experienced by sex and age, 2017–18

Source: ABS 2019.
http://www.aihw.gov.au/

Variation between population groups

Certain groups of people are more likely to experience multimorbidity than others. In 2017–18, the prevalence of multimorbidity increased with increasing socioeconomic disadvantage, ranging from 14% in the highest socioeconomic areas to 25% in the lowest socioeconomic areas. However, the prevalence of multimorbidity was similar across remoteness areas (ranging from 18% in *Major cities* and *Remote* areas to 21% in *Inner* and *Outer regional* areas) (Figure 3). These findings adjust for differences in the age structure of the populations being compared. See Rural and remote health.

Figure 3: Number of chronic conditions experienced by remoteness and socioeconomic area, 2017–18
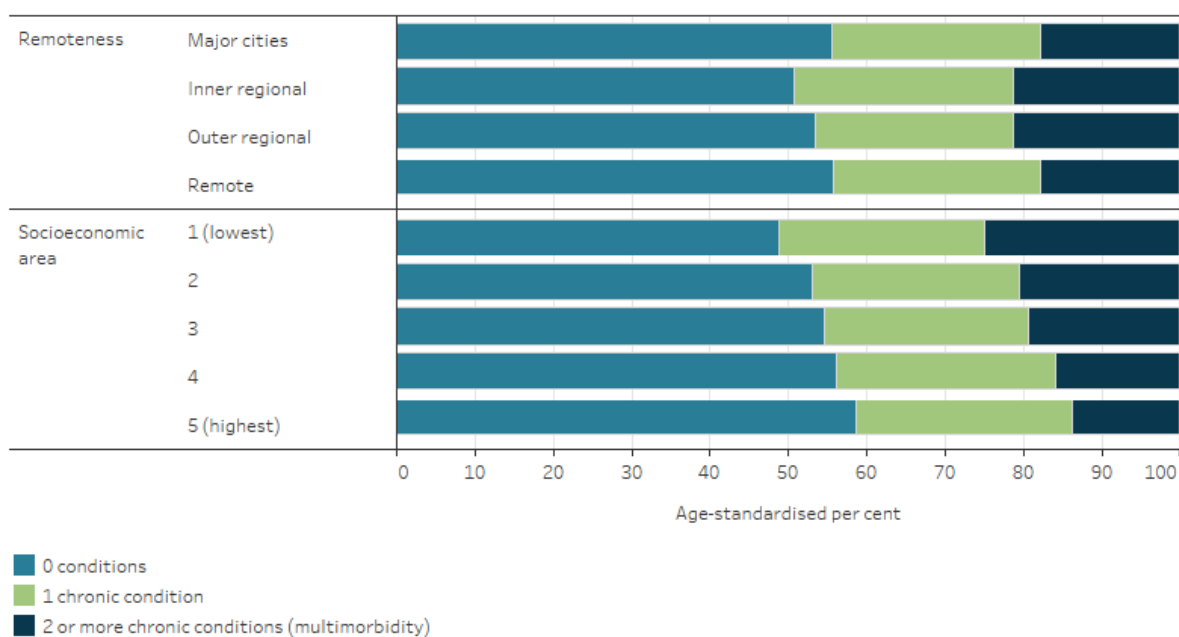
Source: ABS 2019.
http://www.aihw.gov.au/

Impact

Living with chronic conditions can have a substantial impact on an individual's health and their health service use. Analysis of the National Hospitals Morbidity Database, National Mortality Database and Australian Burden of Disease Study 2015 data shows the 10 selected chronic conditions:

- were involved in 5 in 10 hospitalisations (51%) in 2017–18

- contributed to nearly 9 in 10 deaths (89%) in 2018

- contributed to around 66% of the total burden of disease (fatal and non-fatal) in Australia in 2015 (excluding burden associated with osteoporosis which is not available within current burden of disease estimates) (AIHW 2019). See Burden of disease for more information on definitions and the burden of disease associated with these conditions.

Living with chronic conditions can also affect a person's quality of life and have social and economic effects. The impact is even greater for people living with multimorbidity. Based on self-reported data from the 2017–18 NHS, people with multimorbidity were less likely to be in the labour force (working or seeking work) than people with no chronic conditions. Of all people aged 18–64 with multimorbidity, 71% were working or seeking work compared with 86% of people aged 18–64 with no chronic conditions (ABS 2019).

Compared with those with no long-term conditions, people aged 18 and over with multimorbidity also had higher levels of:

- disability, restriction or limitation (50% of people aged 18 and over with multimorbidity experienced disability, restriction or limitation compared with 7.9% of people of the same age with no long-term conditions)
- high or very high psychological distress (35% compared with 4.3%)
- bodily pain experienced in the previous 4 weeks (88% compared with 55%)
- fair or poor health (32% compared with 5.3%) (ABS 2019).

These comparisons adjust for differences in the age structure of the populations being compared.

Risk factors

Many chronic conditions share common risk factors that are largely preventable or treatable, for example: tobacco smoking, physical inactivity, poor diet, overweight and obesity and other biomedical risk factors such as high blood pressure. Preventing or modifying these risk factors can reduce the risk of developing a chronic condition and result in large population and individual health gains by reducing illness and rates of death.

As with chronic conditions, these risk factors tend to be more prevalent in the lowest socioeconomic areas and in regional and remote areas (see: Health across socioeconomic groups and Rural and remote health).

Treatment and management

Most care for chronic conditions is provided in the primary health care setting by general and allied health practitioners. Mental and behavioural conditions (including anxiety, depression and mood disorders), musculoskeletal (including arthritis), respiratory (including asthma) and endocrine and metabolic conditions (including diabetes) were the most common health concerns managed by general practitioners in 2019 (RACGP 2019). Effective primary health care can help prevent unnecessary hospitalisations and improve health outcomes (AMA 2017; OECD 2017). See: Primary health care and Potentially preventable hospitalisations.

Within Australia, it is recognised that multimorbidity increases the complexity of patient care (Harrison & Siriwardena 2018). People living with multiple chronic conditions have more medical appointments and medications to manage (RACGP 2019), yet historically there has been a lack of coordination and communication between different parts of the Australian health care system (Department of Health 2018; RACGP 2019).

The Australian Government has implemented a number of approaches with the aim of improving coordination and care for people with chronic conditions, including:

- access to care plans and assessments through the Medicare Benefits Schedule for the planning and management of chronic conditions
- subsidies through the Pharmaceutical Benefits Scheme for a range of medicines used in the treatment of chronic conditions
- trialling Health Care Homes where patients are enrolled with a specific general practice or Aboriginal Community Controlled Health Service to coordinate their care and to facilitate services by a care team. The care team can include a range of health professionals (for example, general practitioners, specialists, allied health professionals and practice nurses) (Department of Health 2018).

In 2017, all Australian health ministers endorsed the National Strategic Framework for Chronic Conditions (the Framework). The Framework provides guidance for the development and implementation of policies, strategies, actions and services to tackle chronic conditions. It moves away from a disease-specific approach and better caters for shared health determinants, risk factors and multimorbidities across a broad range of chronic conditions.

The Framework outlines 3 objectives that focus on preventing chronic conditions, and thus minimising multimorbidities; providing efficient, effective and appropriate care to manage them; and targeting priority populations (AHMAC 2017). The Framework will inform the development of the National Preventative Health Strategy announced by the Minister for Health in June 2019 (Department of Health 2019).

Where do I go for more information?

For further information on chronic conditions and multimorbidity, see:

- COPD, associated comorbidities and risk factors
- Asthma, associated comorbidities and risk factors
- Musculoskeletal conditions and comorbidity in Australia
- Cardiovascular disease, diabetes and chronic kidney disease: Australian facts: prevalence and incidence
- Australian Bureau of Statistics National Health Survey: first results, 2017–18

Visit Chronic disease for more on this topic.

References

ABS (Australian Bureau of Statistics) 2018. National Health Survey: first results, 2017–18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019. Microdata: National Health Survey, 2017–18. ABS cat. no. 4324.0.55.001. Findings based on detailed Microdata analysis. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015—summary report. Australian Burden of Disease Study series no. 18. Cat. no. BOD 21. Canberra: AIHW.

AHMAC (Australian Health Ministers' Advisory Council) 2017. National Strategic Framework for Chronic Conditions. Canberra: Australian Government.

AMA (Australian Medical Association) 2017. General practice in primary health care—2016. Viewed 30 January 2020.

Department of Health 2018. Health Care Homes. Canberra: Department of Health. Viewed 30 August 2019.

Department of Health 2019. National Preventive Health Strategy. Canberra: Department of Health. Viewed 6 January 2020.

Department of Health 2020. Preventative health. Canberra: Department of Health. Viewed 29 May 2020.

Harrison C and Siriwardena A 2018. Multimorbidity: editorial. Australian Journal of General Practice. Volume 47(1–2). Viewed 30 August 2018.

OECD (Organisation for Economic Co-operation and Development) 2017. Health at a glance 2017: OECD indicators. Paris: OECD.

RACGP (The Royal Australian College of General Practitioners) 2019. General practice: health of the nation 2019. Melbourne: RACGP.

Chronic kidney disease

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/chronic-kidney-disease

Chronic kidney disease (CKD) refers to all conditions of the kidney affecting the filtration and removal of waste from the blood for 3 months or more. CKD is identified by reduced filtration by the kidney and/or by the leakage of protein or albumin in the urine. CKD is mostly diagnosed at more advanced stages when symptoms become more visible. End-stage kidney disease (ESKD) is the most severe form of CKD where people usually require kidney replacement therapy (KRT)—a kidney transplant or dialysis—to survive.

CKD is largely preventable because many of its risk factors—high blood pressure, tobacco smoking, overweight and obesity, and impaired glucose regulation—are modifiable. Early detection of CKD by simple blood or urine tests enables treatment to prevent or slow down its progression.

How common is chronic kidney disease?

In 2011–12, an estimated 1 in 10 people (1.7 million Australians) aged 18 and over had biomedical signs of CKD, according to the Australian Bureau of Statistics' (ABS) latest National Health Measure Survey in 2011–12 (AIHW 2014). The risk of CKD increases rapidly with age, affecting around 4 in 10 (42%) people aged 75 and over.

Early stages of CKD are often underdiagnosed as there are no apparent signs or discomfort to the person. CKD is a largely underdiagnosed condition—only 10% of survey respondents who showed biomedical signs of CKD reported having CKD.

Between 1999–2000 and 2011–2012, the CKD prevalence rate remained stable, but the number of Australians with moderate to severe loss of kidney function nearly doubled (from 322,000 in 1999–2000 to 604,000 in 2011–2012). This increase was mostly driven by growth in the population of older people (as people live longer) and survival of people with advanced stages of CKD receiving KRT (AIHW 2018).

There were around 5,100 new cases of end-stage kidney disease in Australia in 2013, which equates to around 14 new cases per day. Of these, around 50% were receiving KRT.

The rate of new cases of KRT-treated and non-KRT-treated ESKD increased with age for all age groups to the age of 74. From age 75, only rates of non-KRT-treated ESKD rose rapidly—an 11-fold increase from age 65–74 (from 13 to 145 per 100,000 population) (Figure 1). The relative contribution of persons newly diagnosed with ESKD and receiving KRT to the overall incidence rate decreases significantly with age: 9 in 10 (92%) new

patients with ESKD aged under 55 have received KRT compared with 1 in 5 (19%) new patients with ESKD aged 75 and over.

Figure 1: Incidence of ESKD, by age and treatment status, 2013
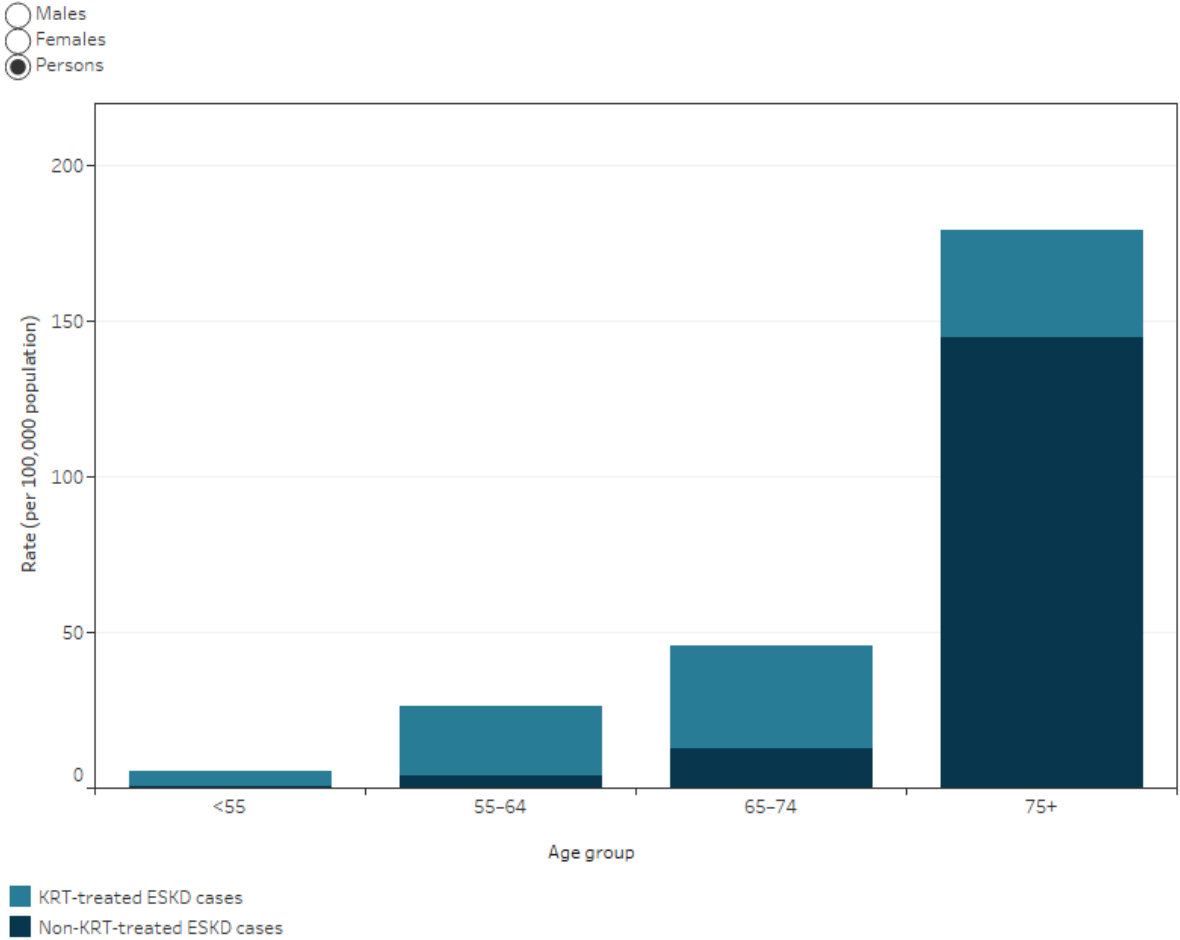
○ Males
○ Females
◉ Persons

■ KRT-treated ESKD cases
■ Non-KRT-treated ESKD cases

Notes
1. Age-standardised to the Australian population as at 30 June 2001.
2. ESKD= End-Stage Kidney Disease.
3. KRT= Kidney Replacement Therapy.
Source: AIHW 2016b.
https://www.aihw.gov.au/

Between 1997 and 2013, the number of new cases of KRT-treated and non-KRT-treated ESKD increased by 71% and 35% respectively. However, the rate for both treatment groups has remained relatively stable since 2001—an average of 10 per 100,000 population per year (Figure 2).

Figure 2: Incidence of ESKD by treatment status, 1997 to 2013
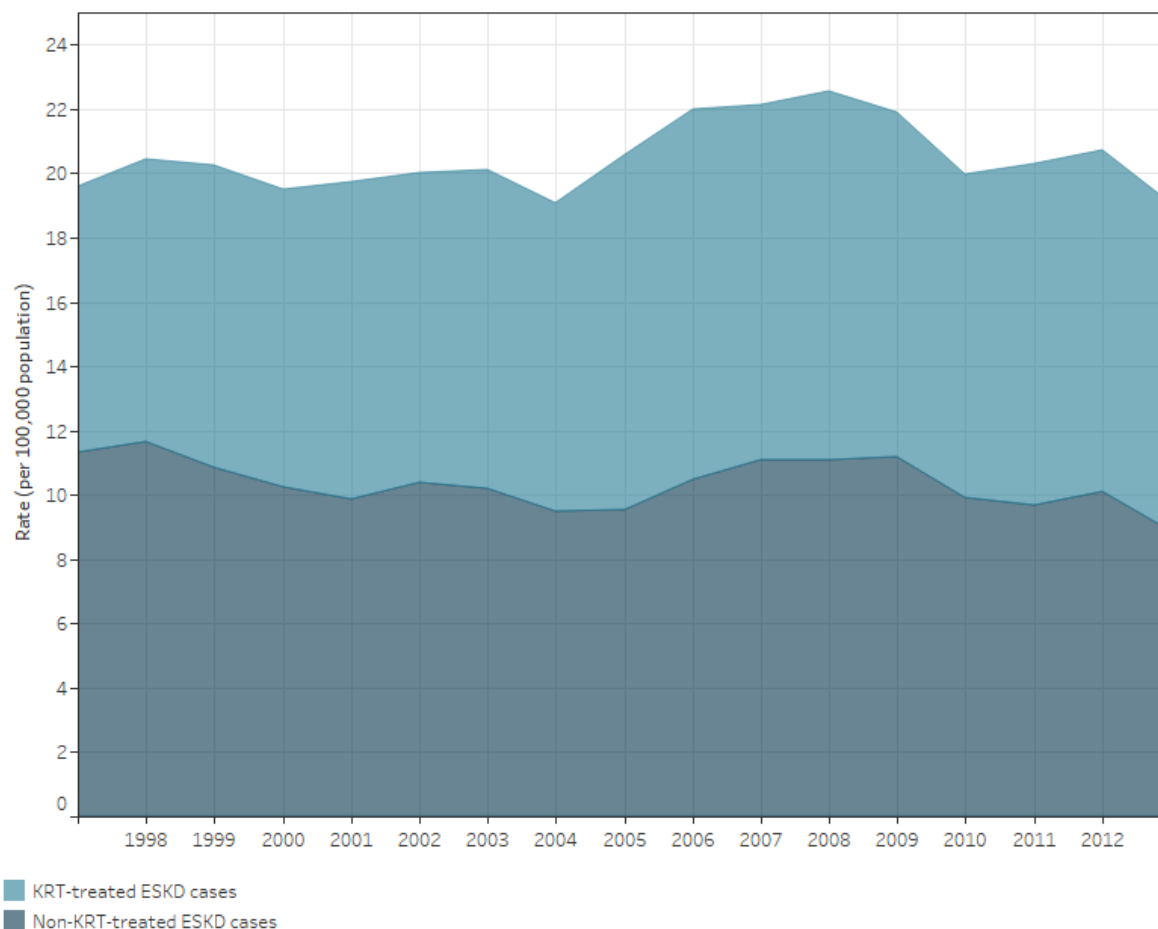
- KRT-treated ESKD cases
- Non-KRT-treated ESKD cases

Notes
1. Age-standardised to the Australian population as at 30 June 2001.
2. ESKD= End-Stage Kidney Disease.
3. KRT= Kidney Replacement Therapy.
Source: AIHW 2016b.
http://www.aihw.gov.au/

Impact

Burden of disease

The contribution of CKD to the total disease burden (fatal and non-fatal) in Australia has increased since 2003. In 2015, CKD was responsible for 1.2% of the total burden compared with 0.8% in 2003. The burden of CKD increased rapidly with age, with CKD being the seventh leading cause of burden among those aged 85 and over.

Impaired kidney function contributes to the burden of CKD as well as several other diseases, including gout, peripheral vascular disease, dementia, coronary heart disease

and stroke. In 2015, 2.1% of total disease burden could have been prevented if people had not had impaired kidney function (AIHW 2019b).

See Burden of disease.

Deaths

According to the National Mortality Database, CKD contributed to around 16,800 (11%, or 1 in 9) deaths in 2018, with 79% of these recording CKD as an associated cause of death (AIHW 2019d). CKD is more often recorded as an associated cause as the disease itself may not lead directly to death. When CKD was an associated cause of death, the most common underlying causes of death were:

- diseases of the circulatory system (37%), such as coronary heart disease and heart failure and cardiomyopathy
- cancers (19%) such as prostate, lung, blood and bladder cancer
- diseases of the respiratory system (8.8%) such as COPD and pneumonia
- endocrine, nutritional and metabolic diseases (8.8%), in particular type 2 diabetes
- dementia and Alzheimer's disease (7.6%).

CKD is often under-reported as a cause of death, as shown by linked data from the Australia and New Zealand Dialysis and Transplant (ANZDATA) registry and National Death Index, in which over half (53%) of the patients with ESKD who received KRT and died during the period 1997–2013 did not have ESKD recorded on their death certificate (AIHW 2016b).

See Causes of death.

Treatment and management

Hospitalisations

According to the National Hospital Morbidity Database, in 2017–18, CKD was recorded as the principal or additional diagnosis in around 1.9 million hospitalisations—17% of all hospitalisations in Australia (AIHW 2019c). Of these, 80% (1.5 million) were for regular dialysis treatment, making dialysis the most common reason for hospitalisation (AIHW 2019a). Age-standardised rates for dialysis have increased by 19% over the last decade, from 4,500 per 100,000 population in 2007–08 to 5,400 per 100,000 population in 2017–18.

There were 370,000 hospitalisations with a diagnosis of CKD (excluding regular dialysis as a principal diagnosis) in 2017–18. Most of these (84%) had CKD as an additional (rather than principal) diagnosis.

The number of hospitalisations for CKD as the principal diagnosis (excluding regular dialysis) doubled between 2000–01 and 2017–18, from 24,100 to 51,300 hospitalisations. The age-standardised hospitalisation rate for CKD increased by 54% between 2000–01 and 2017–18 (126 and 194 per 100,000 population, respectively).

See Hospital care.

Kidney replacement therapy

In 2018, around 25,400 people received KRT. KRT rates are higher in males than females at all ages as ESKD is more prevalent in the male population. KRT rates increase with age until the age of 80 and then fall from age 80. Of all people receiving KRT, 53% had dialysis while 47% had a kidney transplant. The number of people receiving KRT has more than doubled in the last 2 decades, from around 10,500 to 25,400 and the KRT rate in 2018 (92 per 100,000) was 1.6 times as high as the rate in 1998 (57 per 100,000) (Figure 3).

Figure 3: People with ESKD receiving kidney replacement therapy (KRT), by sex, 1989 to 2018
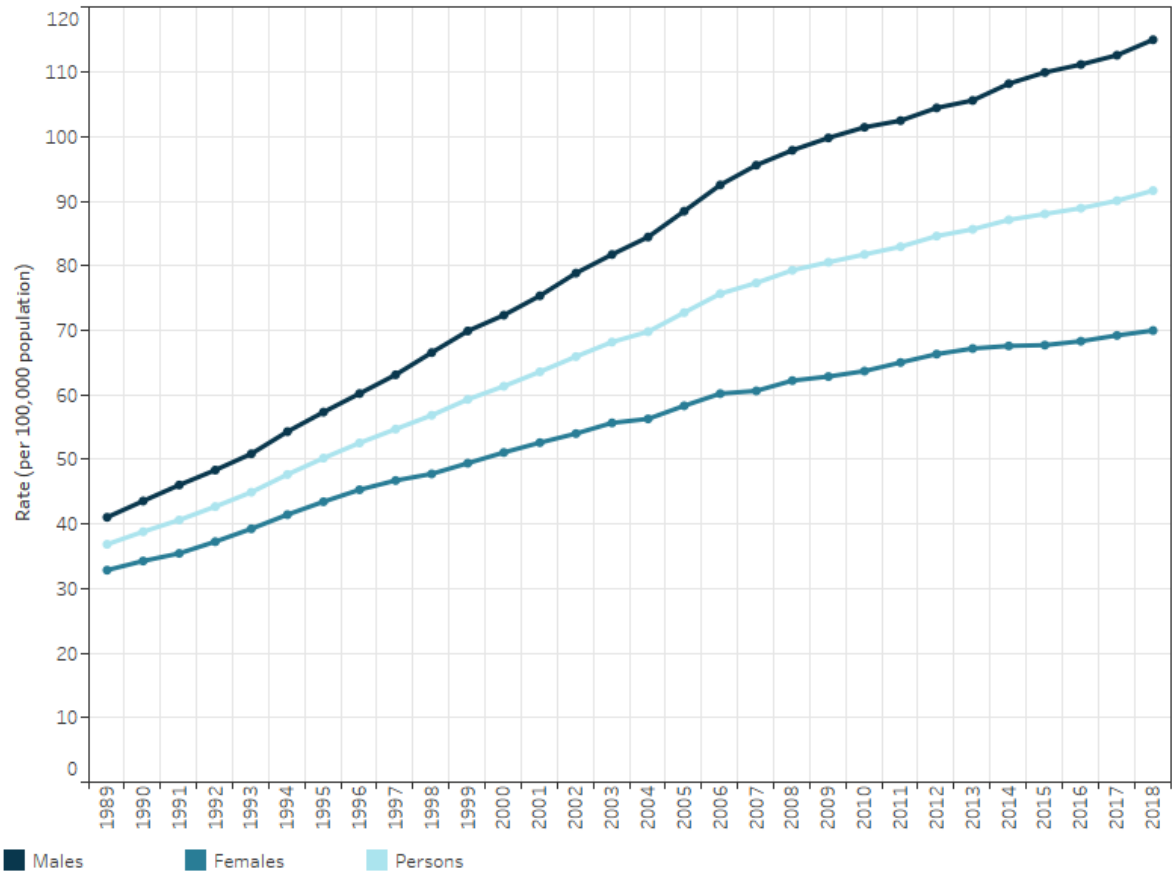
Notes
1. Age-standardised to the 2001 Australian Standard Population.
2. ESKD= End-Stage Kidney Disease.
3. KRT= Kidney Replacement Therapy.
4. Excluding patients who recovered their kidney function, for whom the follow-up was lost, who had a kidney transplant overseas, for whom graft function has ceased temporarily or permanently and were still alive as at 31 December.
Source: ANZDATA 2018.
http://www.aihw.gov.au/

Variation between population groups

The impact of CKD varies between population groups, with rates being 2.1–7.3 times as high among Aboriginal and Torres Strait Islander Australians compared with non-Indigenous Australians. Generally, the impact of CKD increases with rising socioeconomic disadvantage. Rates of CKD hospitalisation were 2.2 times as high in the lowest socioeconomic areas compared with the highest.

Figure 4: Impact of chronic kidney disease (CKD)—variation between selected population groups

Hover on the numbers for more information on the impact of CKD in each population group.

Comparing rates for:	Indigenous / non-Indigenous	Remote and Very remote / Major cities	Lowest / highest socioeconomic areas
Having CKD	2.1×	n.a.	1.6×
Hospitalised for CKD (excluding dialysis)	4.9×	2.7×	2.2×
Dying from CKD	3.6×	1.9×	1.8×
New cases of ESKD	5.0×	2.2×	1.6×
Receiving KRT	5.1×	2.5×	1.6×
Burden of disease	7.3×	3.7×	2.3×

Sources: AIHW 2014, 2015a, 2015b, 2016a, 2016b, 2019b, 2019c, 2019d; ANZDATA 2018.
http://www.aihw.gov.au/

Where do I go for more information?

More information on CKD is available at:

- Chronic kidney disease

- [Geographical variation in chronic kidney disease](#)

- [Incidence of end-stage kidney disease in Australia 1997–2013](#)

- Australian Bureau of Statistics [Australian Health Survey: Biomedical Results for Chronic Diseases, 2011-12](#)

Visit [Chronic kidney disease](#) for more on this topic.

References

ANZDATA (Australia and New Zealand Dialysis and Transplant Registry) 2018. ANZDATA Registry. Findings based on unit record analysis. Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 2014. [Cardiovascular disease, diabetes and chronic kidney disease—Australian facts: prevalence and incidence](#). Cardiovascular, diabetes and chronic kidney disease series no. 2. Cat. no. CDK. 2. Canberra: AIHW.

AIHW 2015a. [Cardiovascular disease, diabetes and chronic kidney disease—Australian facts: Aboriginal and Torres Strait Islander people](#). Cardiovascular, diabetes and chronic kidney disease series no. 5. Cat. no. CDK 5. Canberra: AIHW.

AIHW 2015b. Linked ANZDATA, AIHW National Mortality Database, National Death Index. Findings based on unit record analysis. Canberra: AIHW.

AIHW 2016a. [Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011](#). Australian Burden of Disease Study series no. 6. Cat. no. BOD 7. Canberra: AIHW.

AIHW 2016b. [Incidence of end-stage kidney disease in Australia 1997–2013](#). Cat. no. PHE 211. Canberra: AIHW.

AIHW 2018. [Chronic kidney disease prevalence among Australian adults over time](#). Cardiovascular, diabetes and chronic kidney disease series no. 6. Cat. no. CDK 6. Canberra: AIHW.

AIHW 2019a. [Admitted patient care 2017–18](#). Cat. no. HSE 225. Canberra: AIHW.

AIHW 2019b[. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015](#). Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019c. [National Hospital Morbidity Database](#). Findings based on unit record analysis. Canberra: AIHW.

AIHW 2019d. [National Mortality Database](#). Findings based on unit record analysis. Canberra: AIHW.

Chronic respiratory conditions

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Chronic respiratory conditions affect the airways, including the lungs and the passages that transfer air from the mouth and nose into the lungs. These conditions are characterised by symptoms such as wheezing, shortness of breath, chest tightness and cough. Chronic respiratory conditions can be grouped in a variety of ways, including obstructive lung diseases and restrictive lung diseases. Obstructive lung diseases are diseases that cause more difficulty with exhaling air, such as asthma, chronic obstructive pulmonary disease (COPD) and bronchiectasis. Restrictive lung diseases are diseases that can cause problems by restricting a person's ability to inhale air, such as pulmonary fibrosis, chronic sinusitis and occupational lung diseases (Leader 2019). This page focuses on asthma, COPD and bronchiectasis as these are common respiratory conditions and are associated with poor health and wellbeing.

Risk factors associated with chronic respiratory conditions can be behavioural, environmental or genetic. Risk factors that cannot be changed include age and genetic predisposition. Risk factors that can be changed include smoking; exposure to environmental fumes, carbon-based cooking and heating fuels; occupational hazards; poor nutrition; overweight/obesity; and sedentary lifestyle.

How common are chronic respiratory conditions?

The Australian Bureau of Statistics (ABS) 2017–18 National Health Survey (NHS) provides estimates of the self-reported prevalence of chronic respiratory conditions. Chronic respiratory conditions affect almost one-third (31%) of Australians. Of the estimated 7.4 million Australians with these conditions, 4.7 million (19% of the total population) had allergic rhinitis ('hay fever'); 2.7 million (11%) had asthma; 2.0 million (8.4%) had chronic sinusitis; and 599,000 (2.5%) had COPD (ABS 2018).

COPD affects mainly middle-aged and older people. While it is occasionally reported in younger age groups, in those aged 45 and over there is more certainty that the condition is COPD and not another respiratory condition. The 2017–18 NHS estimates that 464,000 (4.8%) Australians aged 45 and over had COPD (ABS 2019). However, a large international study (Burden of Obstructive Lung Disease—BOLD), which used lung function testing plus self-reported questionnaires of nearly 10,000 people, estimated that the prevalence of COPD in Australia was 7.5% for people aged 40 and over and 30% for people aged 75 and over (Toelle et al. 2013). It is important to note that accurately estimating the prevalence of COPD requires clinical testing.

Trend

During the last decade:

- the prevalence of asthma has increased, from 9.9% of the population in 2007–08 to 11% of the population in 2017–18
- the prevalence of COPD among people aged 45 and over has remained relatively stable after adjusting for differences in age structure (3.9% of the population in 2007–08 and 4.6% of the population in 2017–18) (Figure 1).

Figure 1: Prevalence of asthma, people of all ages, by sex, 2007–08 to 2017–18

Select a condition:
- Asthma
- COPD

Display rate as:
- age-standardised rate
- crude rate
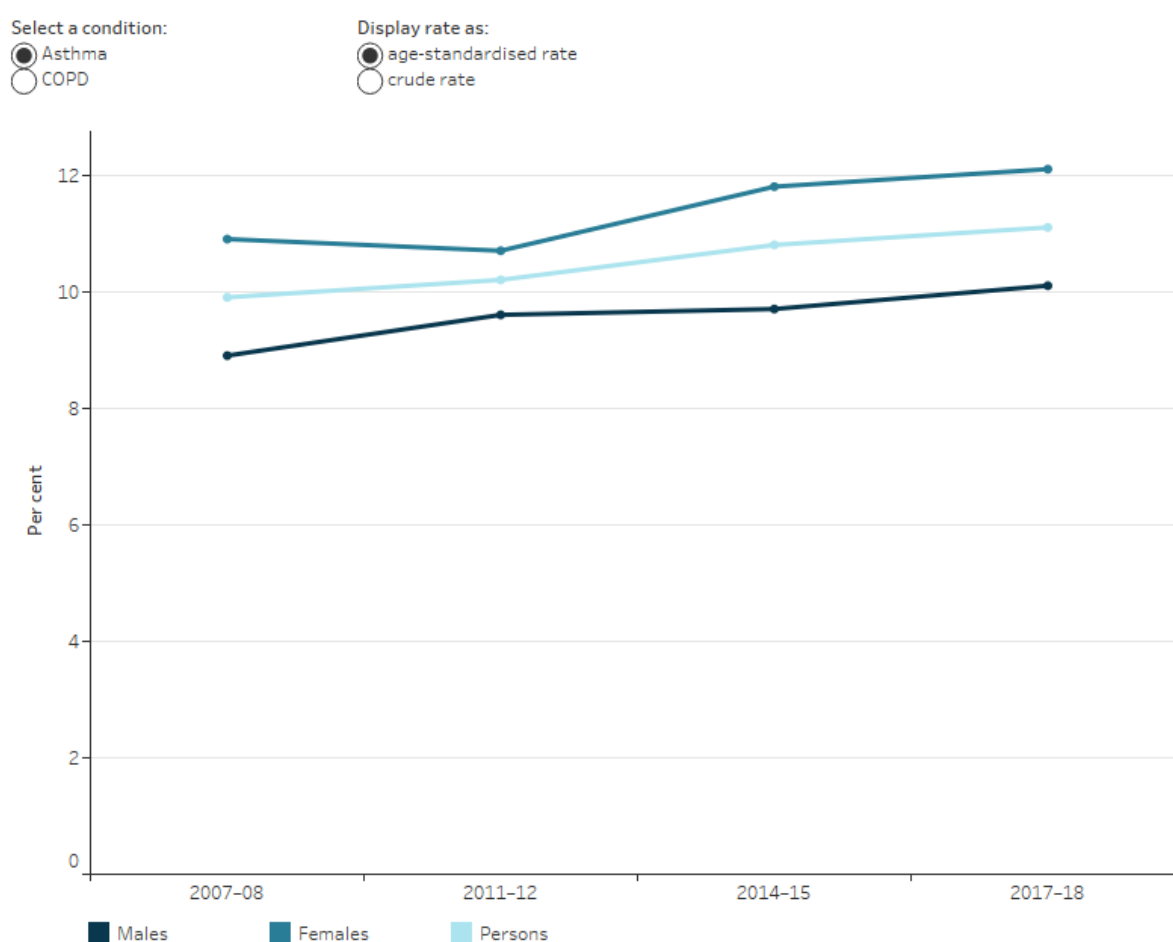
[Notes]

Source: ABS 2010, ABS 2013, ABS 2016, ABS 2019.
http://www.aihw.gov.au/

Sex and age

The prevalence of asthma and COPD varied by sex and age (Figure 2):

- Asthma affects people of all ages. Asthma was more common in boys at younger ages (0–14) and more common in women at older ages (25 years and over, with the exception of the 35–44 year age group which was similar between men and women).
- COPD mainly occurs in people aged 45 and over, and the prevalence tends to increase with age. COPD was more prevalent in women than men for those aged 55–64; however, the prevalence was similar between the sexes in other age groups.

Figure 2: Prevalence of asthma, people of all ages, by sex and age, 2017–18
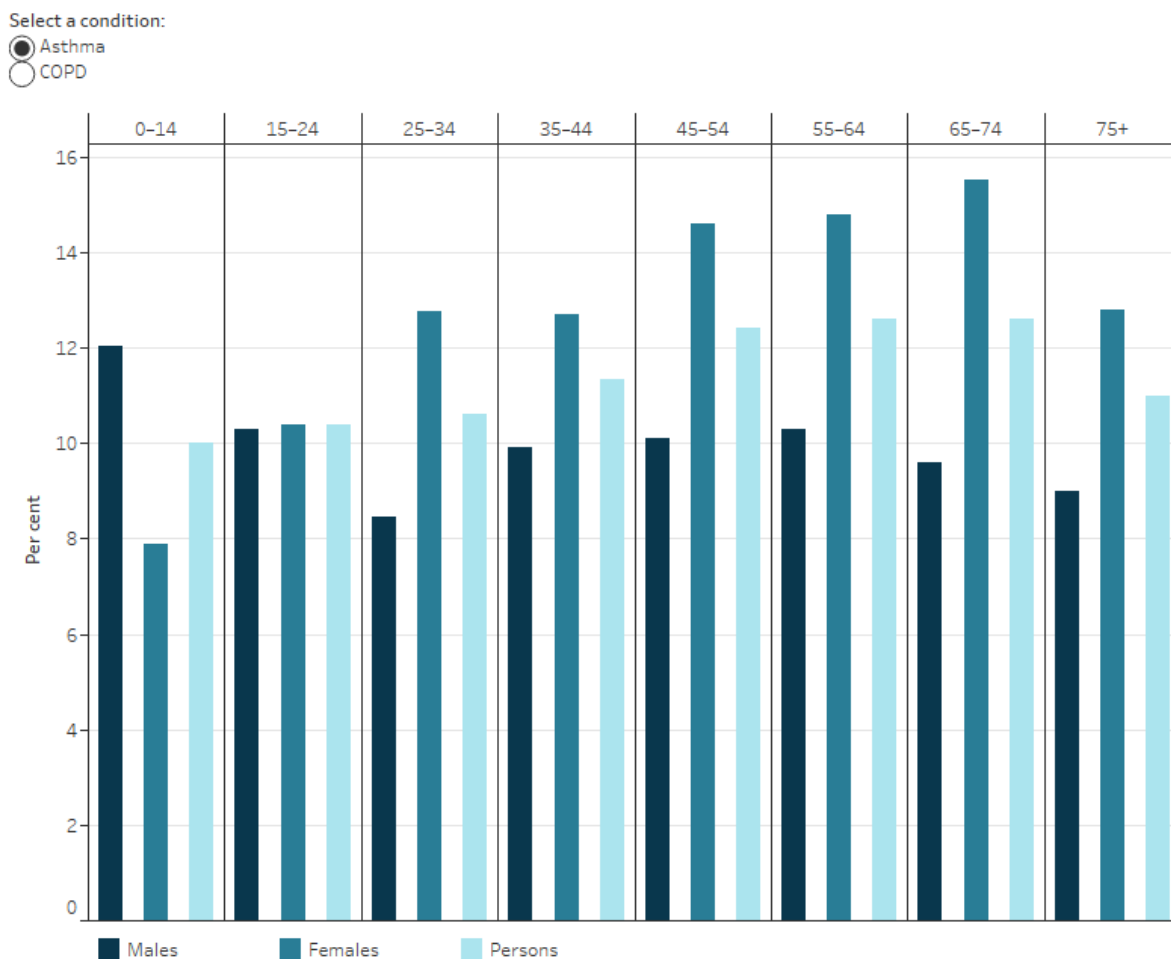
[Notes]

Source: ABS 2018; ABS 2019.
http://www.aihw.gov.au/

Comorbidity

People with chronic respiratory conditions often have other chronic and long-term conditions. This is called 'comorbidity', which describes any additional disease that is experienced by a person with a disease of interest (the index disease).

In the 2017–18 NHS, for people aged 45 and over with:

- Asthma: 81% had at least 1 other chronic condition; among them, 49% had arthritis and 37% had back problems. For more information on asthma comorbidities, see Asthma, associated comorbidities and risk factors.

- COPD: 90% had at least 1 other chronic condition; among them, 55% had arthritis and 43% had asthma. For more information on COPD comorbidities, see Chronic obstructive pulmonary disease (COPD), associated comorbidities and risk factors.

There is an increasing recognition that asthma and COPD may occur together. Overall, about 20% of patients with obstructive airway disease have been diagnosed with both asthma and COPD (Gibson & MacDonald 2015).

Thunderstorm asthma

Thunderstorm asthma can occur suddenly in spring or summer when there is a lot of pollen in the air and the weather is hot, dry, windy and stormy. People with asthma and/or hay fever need to be extra cautious to avoid flare-ups induced by thunderstorm asthma between September and January in Victoria, New South Wales and Queensland because it can be very serious (National Asthma Council Australia 2019b). In 2016, a serious thunderstorm asthma epidemic was triggered in Melbourne when very high pollen counts coincided with adverse meteorological conditions, resulting in 3,365 people presenting at hospital emergency departments over 30 hours, and 10 deaths (Thien et al. 2018). Following this event, a thunderstorm asthma forecasting system has been developed to give Victorians early warning of possible epidemic thunderstorm asthma events in pollen season (Victoria State Government 2019). See Natural environment and health.

Impact

Deaths

In 2018, COPD was the fifth leading underlying cause of death in Australia, with 7,113 deaths (4.5% of all deaths). There were 389 deaths due to asthma (0.2% of all deaths), and 387 deaths due to bronchiectasis, of which 371 (96%) were people aged 60 and over. Trends over the last decade show that the age-standardised rate of death due to COPD among people aged 45 and over fluctuated, with the highest rate in 2014 at 70 deaths per 100,000 population and the lowest in 2010 at 61 deaths per 100,000 population (Figure 3). See Causes of death.

Figure 3: Deaths due to asthma, bronchiectasis and COPD, 2009 to 2018
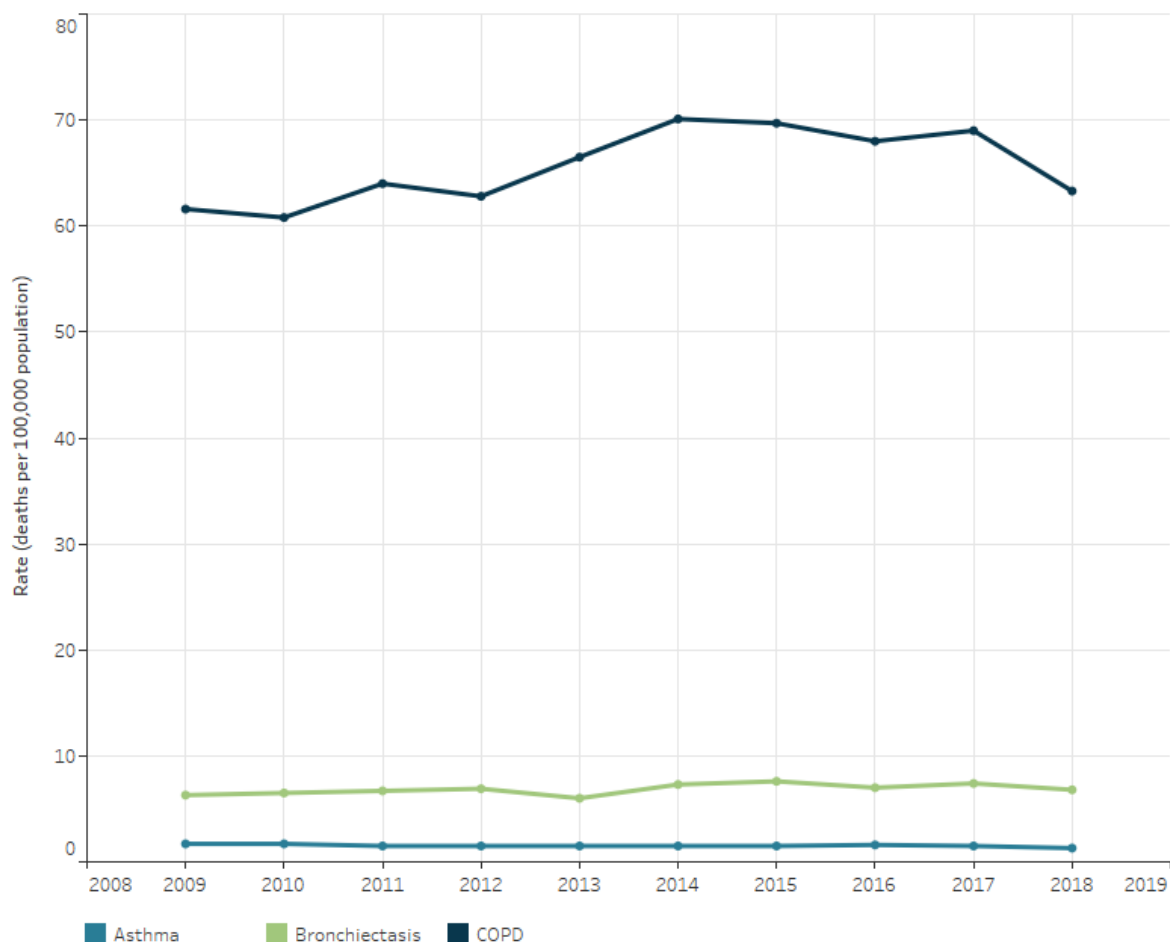
[Notes]

Source: AIHW National Mortality Database.
http://www.aihw.gov.au

Burden of disease

Chronic respiratory diseases contribute substantially to the disease burden in the Australian population. In recognition of this burden, the National Asthma Strategy was launched in January 2018 (Department of Health 2018), and the National Strategic Action Plan for Lung Conditions was launched in February 2019 (Department of Health 2019).

The Australian Burden of Disease Study found that, in 2015, respiratory diseases contributed 7.5% of the total burden of disease and injury in Australia (AIHW 2019a):

- Respiratory diseases were ranked as the sixth leading disease group contributing to total burden, after cancer, cardiovascular disease, musculoskeletal conditions, mental and substance use disorders, and injuries.

- COPD contributed 51% of the respiratory diseases burden, and asthma contributed 34%.
- At the individual disease level: COPD was the third leading cause of total burden; asthma was ranked as the ninth leading cause of total burden overall, but was the first leading cause of total burden among children aged 5 to 14.

See [Burden of disease](#).

Expenditure

The Australian Disease Expenditure Study showed that in 2015–16, an estimated 3.5% ($4 billion) of total disease expenditure in the Australian health system was attributed to respiratory conditions (AIHW 2019b):

- COPD cost the Australian health system an estimated $976.9 million, representing 24% of disease expenditure on respiratory conditions and 0.8% of total disease expenditure.

- Asthma cost the Australian health system an estimated $770.4 million, representing 19% of disease expenditure for respiratory conditions and 0.7% of total disease expenditure.

See [Health expenditure](#).

Treatment and management

Primary care

General practitioners (GPs) play an important role in managing asthma in the community, but there is currently no nationally consistent primary health care data collection to monitor provision of care by GPs. One of the key steps in managing asthma is for patients to follow a personal asthma action plan developed with their GP. The plan outlines what to do if symptoms flare up and what to do in an asthma emergency (National Asthma Council Australia 2019a). According to the 2017–18 NHS, an estimated 839,000 (31%) people with self-reported asthma across all ages had a written asthma action plan. Children aged 0–14 with asthma were most likely to have a plan (67%), and 24% of people with asthma aged 15 and over had a plan (ABS 2019). See [Primary health care](#).
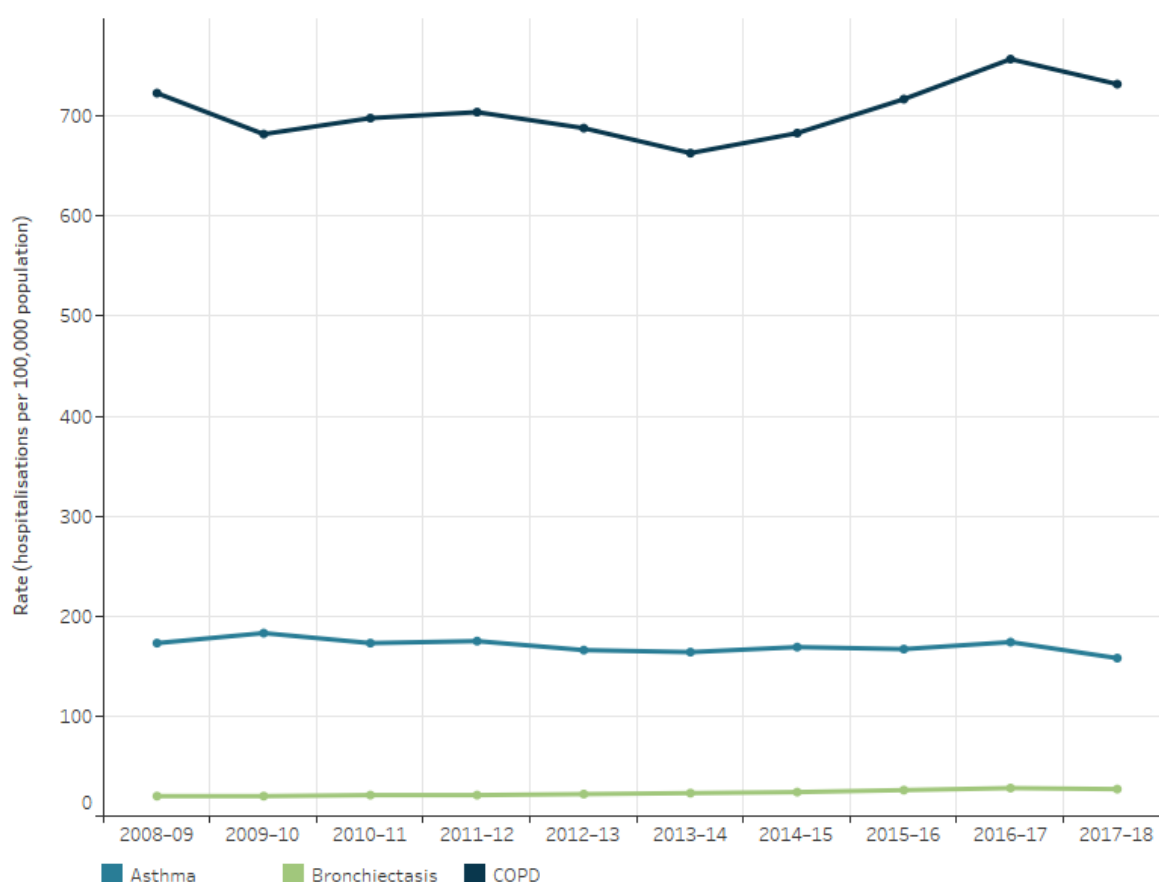
Hospitalisations

People with chronic respiratory conditions require admission to hospital when they cannot be managed at home or by a GP, or their symptoms exacerbate acutely. In 2017–18, asthma was the principal diagnosis in 38,800 hospitalisations; COPD was the principal diagnosis in 77,700 hospitalisations of people aged 45 and over; and bronchiectasis was the principal diagnosis in 7,700 hospitalisations. Trends over time show that:

- the hospitalisation rate for asthma fluctuated during the last decade, with the highest rate at 183 per 100,000 population in 2009–10 and the lowest at 158 per 100,000 population in 2017–18

- the hospitalisation rate for COPD also fluctuated, with the highest at 757 per 100,000 population in 2016–17 and the lowest at 663 per 100,000 population in 2013–14 (Figure 4).

See Hospital care.

Figure 4: Hospitalisations due to asthma, bronchiectasis and COPD, 2008–09 to 2017–18

[Notes]

Source: AIHW National Hospitals Morbidity Database.
http://www.aihw.gov.au

Hospitalisations due to asthma, COPD and bronchiectasis are classified as potentially preventable. Potentially preventable hospitalisations are defined as admissions to hospital where the hospitalisation could have potentially been prevented through the provision of appropriate individualised preventative health interventions and early disease management usually delivered in primary care and community-based care settings (AIHW 2019c).

Variation between population groups

The impact of asthma, COPD and bronchiectasis varies between population groups, with rates of prevalence, hospitalisation, death and disease burden being 1.1–2.0 times as high in *Remote and very remote* areas as in *Major cities*. Meanwhile, the impact of asthma, COPD and bronchiectasis increases with decreasing socioeconomic position. Rates were 1.2–2.8 times as high in the lowest socioeconomic areas compared with the highest (Figure 5).

Figure 5: Impact of selected chronic respiratory conditions, by selected population groups

Hover on the numbers for more information on the impact of selected chronic respiratory conditions in each population group.

Comparing rates for:		Remote and very remote / Major cities	Lowest / Highest socioeconomic areas
Asthma	Having asthma	1.1x	1.4x
	Hospitalised for asthma	1.1x	1.8x
	Burden of disease for asthma	1.3x	1.8x
Bronchiectasis	Hospitalised for bronchiectasis	2.0x	1.2x
COPD	Having COPD	1.1x	2.3x
	Hospitalised for COPD	1.7x	2.8x
	Dying from COPD	1.9x	2.8x
	Burden of disease for COPD	1.6x	1.6x

* Age-standardised rates for asthma death and bronchiectasis death by remoteness and socioeconomic areas are not available due to small numbers. The data for bronchiectasis prevalence and burden of disease are not available.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on chronic respiratory conditions, see:

- Asthma

- Chronic obstructive pulmonary disease (COPD)
- Bronchiectasis
- Allergic rhinitis ('hay fever')
- National asthma indicators—an interactive overview
- Australian Bureau of Statistics National Health Survey: First Results, 2017–18

Visit Chronic respiratory conditions for more on this topic.

References

ABS (Australian Bureau of Statistics) 2010. Microdata: National Health Survey, 2007–08. ABS cat. no. 4324.0.55.001. Findings based on Expanded Confidentialised Unit Record File analysis. Canberra: ABS.

ABS 2013. Microdata: National Health Survey, 2011–12. ABS cat. no. 4324.0.55.001. Findings based on Expanded Confidentialised Unit Record File analysis. Canberra: ABS.

ABS 2016. Microdata: National Health Survey, 2014–15. ABS cat. no. 4324.0.55.001. Findings based on Expanded Confidentialised Unit Record File analysis. Canberra: ABS.

ABS 2018. National Health Survey: first results, 2017–18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019. Microdata: National Health Survey, 2017–18. ABS cat. no. 4324.0.55.001. Findings based on Detailed Microdata analysis. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. Disease expenditure in Australia. Cat. no. HWE 76. Canberra: AIHW.

AIHW 2019c. National Healthcare Agreement: PI 18—Selected potentially preventable hospitalisations, 2018. METeOR Metadata Online Registry. Canberra: AIHW.

Department of Health 2018. National Asthma Strategy. Canberra: Department of Health.

Department of Health 2019. National Strategic Action Plan for Lung Conditions. Canberra: Department of Health.

Gibson PG & MacDonald VM 2015. Asthma-COPD overlap 2015: now we are six. Thorax 70(7):683-91.

Leader D 2019. An overview of Obstructive vs. Restrictive Lung Diseases. New York: verywell health.

McGuire G 2012. Bronchiectasis. A guide for primary care. Australian Family Physician 41: 842–50.

National Asthma Council Australia 2019a. Australian Asthma Handbook, Version 2.0. Melbourne: National Asthma Council Australia.

National Asthma Council Australia 2019b. Thunderstorm asthma. Melbourne: National Asthma Council Australia.

Thien F, Beggs PJ, Csutoros D, Darvall J, Hew M, Davies JM et al. 2018. The Melbourne epidemic thunderstorm asthma event 2016: an investigation of environmental triggers, effect on health services, and patient risk factors. Lancet Planet Health 2: e255–e263.

Toelle BG, Xuan W, Bird TE, Abramson MJ, Atkinson DN, Burton DL et al. 2013. Respiratory symptoms and illness in older Australians: The Burden of Obstructive Lung Disease (BOLD) study. Medical Journal of Australia 198:144–8.

Victoria State Government 2019. Epidemic thunderstorm asthma forecast. Melbourne: Victoria State Government.

Australia's health snapshots 2020

Coronary heart disease

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/coronary-heart-disease

Coronary heart disease (CHD) is the leading single cause of disease burden and death in Australia. There are 2 major clinical forms—heart attack (also known as acute myocardial infarction) and angina. A heart attack is a life-threatening event that occurs when a blood vessel supplying the heart is suddenly blocked completely. Angina is a chronic condition in which short episodes of chest pain can occur periodically when the heart has a temporary deficiency in its blood supply.

CHD is largely preventable, as many of its risk factors are modifiable. These include tobacco smoking, biomedical risk factors such as high blood pressure and high blood cholesterol, insufficient physical activity, poor diet and nutrition, and overweight and obesity. As a result of the substantial burden of CHD in the population, a National Strategic Action Plan for Heart Disease and Stroke is under development. The action plan aims to reflect priorities, and identify implementable actions to reduce the impact of CHD in the community.

How common is coronary heart disease?

In 2017–18, an estimated 580,000 Australians aged 18 and over (2.8% of the adult population) had CHD, based on self-reported estimates from the Australian Bureau of Statistics 2017–18 National Health Survey. The prevalence of CHD increases rapidly with age, affecting around 1 in 7 adults (14%) aged 75 and over (ABS 2019a).

In 2017, an estimated 61,800 people aged 25 and over had an acute coronary event in the form of a heart attack or unstable angina—around 169 events every day. This estimate is based on the number of hospitalisations for acute myocardial infarction (heart attack) or unstable angina, and the number of deaths due to acute coronary heart disease (AIHW 2019c, 2019d).
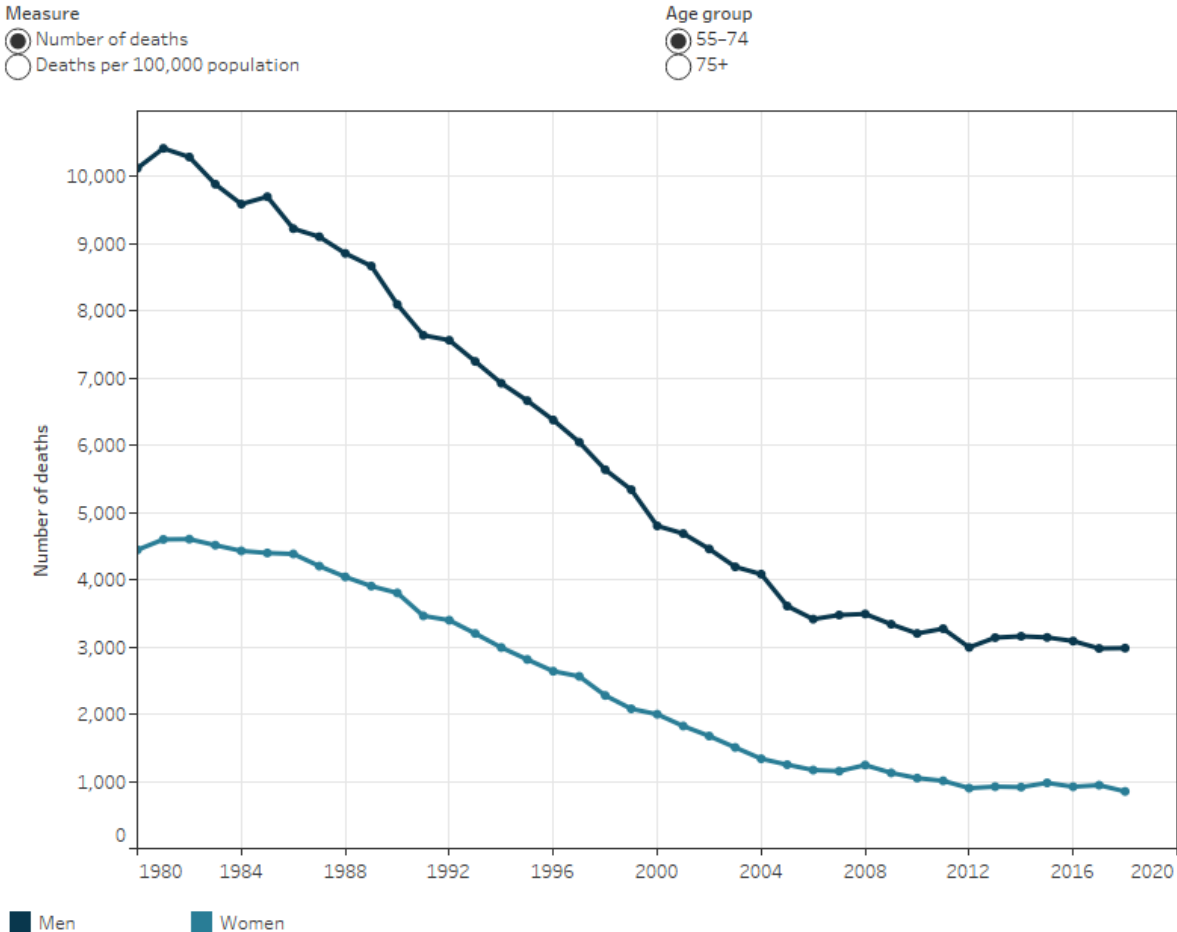
Impact

Deaths

In 2018, CHD was the leading single cause of death in Australia, accounting for 17,500 deaths as the underlying cause of death. This represents 11% of all deaths, and 42% of cardiovascular deaths. Forty-two per cent (7,300) of CHD deaths resulted from a heart attack (AIHW 2019d).

Overall, the CHD death rate has fallen 82% since 1980, or 4.2% a year. While CHD death rates fell substantially in each age group, the rate of decline was more rapid for those aged 75 and over than for younger age groups (Figure 1). The decline in CHD death rates has been attributed to a combination of factors, including reductions in risk factor levels, better treatment and care, and improved secondary prevention (ABS 2018).

See Causes of death.

Figure 1: CHD deaths among people aged 55–74 and 75 and over, by sex, 1980 to 2018

Measure
● Number of deaths
○ Deaths per 100,000 population

Age group
● 55–74
○ 75+

■ Men   ■ Women

Notes
1. A comparability factor of 1.01 has been applied to deaths before 1996 to make them comparable with data from 1997 onwards, following the introducion of automated coding and ICD-10 codes (see Glossary).
2. Rates are calculated using the sum of estimated resident populations at 30 June for each year. Rates are expressed as deaths per 100,000 males/females.
Source: AIHW 2019d.
http://www.aihw.gov.au/

Burden of disease

In 2015, CHD accounted for 6.9% of the total burden of disease in Australia. It accounted for 11% of the overall fatal burden of disease and 2.8% of the non-fatal burden.

The total burden due to CHD was almost twice as high in males, at 216,800 disability-adjusted life years (DALY), as in females (112,000 DALY), and increased rapidly from age

45 onwards—from 16 DALY per 1,000 among people aged 45–64, to 225 per 1,000 among people aged 95 and over (Figure 2).

See Burden of disease.

Figure 2: Rate of DALY due to CHD, by age group and sex, 2015
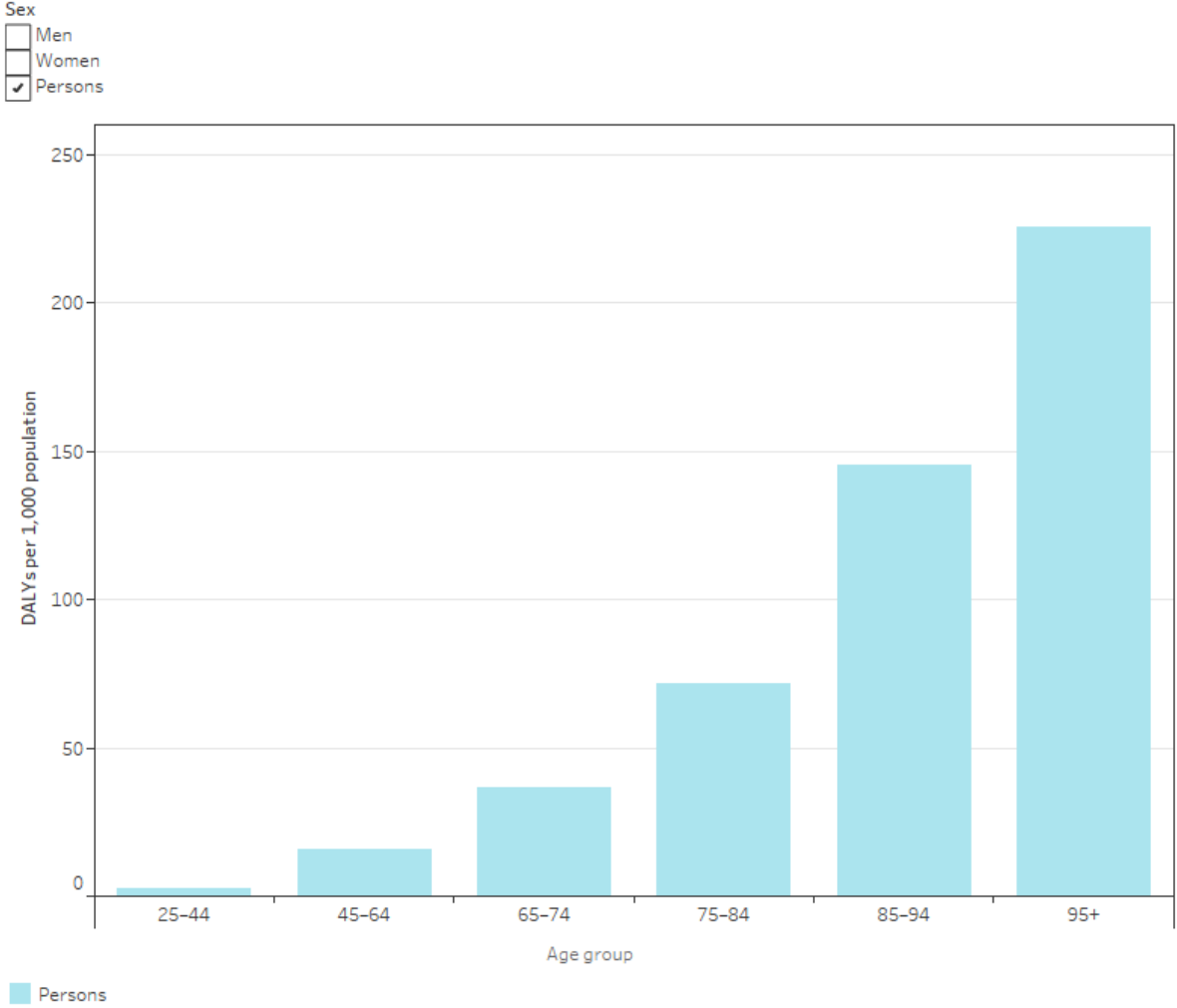
Source: AIHW 2019a.
http://www.aihw.gov.au/

CHD burden can be attributed to several risk factors. In 2015, dietary risk factors were responsible for the most CHD burden (62%), followed by high blood pressure (43%), high cholesterol (37%), overweight and obesity (25%), tobacco use (14%) and physical inactivity (12%). It is important to note that these risk factors overlap and, as a result, the associated risk does not sum to 100%.

Between 2003 and 2015, the overall burden from CHD reduced by 43%, with a 45% drop in the fatal burden of CHD. The non-fatal burden also fell, by 33% (AIHW 2019a).

Expenditure

In 2015–16, the estimated expenditure on CHD was more than $2.2 billion. The greatest cost was due to private hospital services and public hospital admitted patient services ($813 million and $693 million respectively). The estimated Pharmaceutical Benefits Scheme (PBS) expenditure related to CHD was around $218 million (AIHW 2019b).

See Health expenditure.

Treatment and management

Medicines

In 2017–18, 94.5 million PBS and Repatriation Pharmaceutical Benefits Scheme prescriptions for cardiovascular medicines were dispensed to the Australian community—31% of the total prescription medicines dispensed.

Almost three-quarters (73%) of the estimated 4 million Australians who reported having a cardiovascular condition in 2017–18 had used a cardiovascular system medicine in the previous fortnight (ABS 2019a).

See Medicines in the health system.

Hospitalisations

In 2017–18, CHD was the principal diagnosis in about 161,800 hospitalisations (1.4% of all hospitalisations). Of these, 36% were for heart attack (57,400) and 24% for angina (38,900). Most admissions for heart attack (79%) and angina (66%) were emergency admissions (AIHW 2019c).

Between 2000–01 and 2017–18, the age-standardised rate of hospitalisations where CHD was the principal diagnosis declined by 33%, from 833 to 557 hospitalisations per 100,000 population. The decline in hospitalisations over this period was greater among females than among males (39% and 31% respectively). CHD was the leading cause of hospitalisation for cardiovascular disease in 2017–18 (28% of all hospitalisations with a principal diagnosis of cardiovascular disease).

Of all CHD hospitalisations (principal and/or additional diagnoses), 58% had a coronary angiography (a diagnostic procedure) and 29% underwent revascularisation (surgical procedures to restore blood supply to the heart) (AIHW 2019c).

See Hospital care.

Primary care

Regular and timely contact with primary health care providers, such as GPs and cardiologists, can contribute to better outcomes for those with CHD.

An analysis of administrative data from 2012 to 2015 demonstrated that, following a hospital admission for CHD, follow-up care with a primary health care provider reduced the risk of a cardiovascular disease (CVD) related emergency re-admission by 5%−11%, or CVD-related death by 4%−6%, when compared with those who did not have contact with primary health care services. Further, regular contact with primary health care services was associated with lower risk of readmission or death when compared with those with more sporadic contact (AIHW 2018).

See Primary health care.

Variation between population groups

The impact of CHD varies between population groups. Rates of CHD hospitalisation were 1.5 times as high in *Remote and very remote* areas as in *Major cities,* and 1.3 times as high in the lowest socioeconomic areas compared with the highest (Figure 3). The rate of hospitalisations and deaths due to CHD were around twice as high among Aboriginal and Torres Strait Islander people as among non-Indigenous Australians.

Figure 3: Impact of Coronary heart disease—Variation between selected population groups

Hover on the numbers for more information on the impact of CHD in each population group.

Comparing rates for:	Indigenous / non-Indigenous	Remote and very remote / Major cities	Lowest / highest socioeconomic areas
Having CHD	2.0x	0.9x	1.6x
Hospitalised for CHD	2.1x	1.5x	1.3x
Dying from CHD	2.0x	1.5x	1.6x
Burden of disease	3.1x	2.0x	1.8x

Sources: ABS 2019; ABS 2019a; AIHW 2016; AIHW 2019a; AIHW 2019c; AIHW 2019d.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on coronary heart disease, see:

- Cardiovascular disease
- Cardiovascular disease in women
- Transition between hospital and community care for patients with coronary heart disease: New South Wales and Victoria 2012–2015
- Trends in cardiovascular deaths
- Medicines for cardiovascular disease
- Australian Bureau of Statistics National Health Survey: first results, 2017–18

Visit [Heart, stroke & vascular disease](#) for more information on this topic.

References

ABS (Australian Bureau of Statistics) 2018. [Changing patterns of mortality in Australia, 1968–2017](#). ABS cat. no. 3303.0.55.003. Canberra: ABS.

ABS 2019a. [Microdata: National Health Survey](#), 2017–18. ABS cat. no. 4324.0.55.001. Findings based on detailed Microdata analysis. Canberra: ABS.

ABS 2019b. [National Aboriginal and Torres Strait Islander Health Survey, 2018-19](#). ABS cat. no. 4715.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2016. [Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011](#). Australian Burden of Disease Study series no. 6. Cat. no. BOD 7. Canberra: AIHW.

AIHW 2018. [Transition between hospital and community care for patients with coronary heart disease: New South Wales and Victoria, 2012–2015](#). Cat. no. CDK 9. Canberra: AIHW.

AIHW 2019a. [Australian Burden of Disease Study 2015: Interactive data on disease burden](#), Cat. no. BOD 24. Canberra: AIHW.

AIHW 2019b. [Disease Expenditure in Australia](#). Cat.no. HWE 76. Canberra: AIHW.

AIHW 2019c. [National Hospital Morbidity Database](#). Findings based on unit record analysis. Canberra: AIHW.

AIHW 2019d. [National Mortality Database](#). Findings based on unit record analysis. Canberra: AIHW.

Dementia

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/dementia

Dementia is a term used to describe a group of conditions characterised by the gradual impairment of brain function. It is commonly associated with memory loss, but can affect speech, cognition (thought), behaviour and mobility. An individual's personality may also change, and health and functional ability decline as the condition progresses.

While there are many forms of dementia, the best known is Alzheimer's disease—a degenerative brain disease caused by nerve cell death resulting in shrinkage of the brain. The boundaries between different forms of dementia are indistinct and it is possible for a person to have multiple (mixed) types of dementia at the same time.

Although dementia can affect younger people, it is increasingly common with advancing age and mainly occurs among those aged 65 and over, but is not a normal part of ageing. Dementia is a major cause of disability and dependency among older people. It not only affects individuals with the condition, but also has a substantial impact on their families and carers, as people with dementia eventually become dependent on their care providers in most, if not all, areas of daily living.

How common is dementia?

The exact number of people with dementia in Australia is currently not known. It is estimated that in 2020 there are between 400,000 and 459,000 Australians with dementia (AIHW 2018; DA 2020), with Alzheimer's disease accounting for up to 70% of diagnosed cases (DA 2018).

Measuring dementia prevalence

The estimates vary because national data for the prevalence of dementia are not readily available. As a result, current estimates are based on rates derived from published international and local studies that have been applied to the Australian population, and the method in which they have been applied to the Australian context differs between sources. See 'Dementia data in Australia—understanding gaps and opportunities' in Australia's health 2020: data insights for more information.

It is expected that the continued growth and ageing of Australia's population will lead to an increase in the number of people with dementia over time, as the condition is increasingly common with advancing age and primarily affects older people. The

number of people with dementia is expected to increase to between 550,000 (AIHW 2018; Figure 1) and 590,000 by 2030 (DA 2020).

Figure 1: Historical and projected dementia prevalence by age group, 2010 to 2030

Select year(s):
2010 to 2030
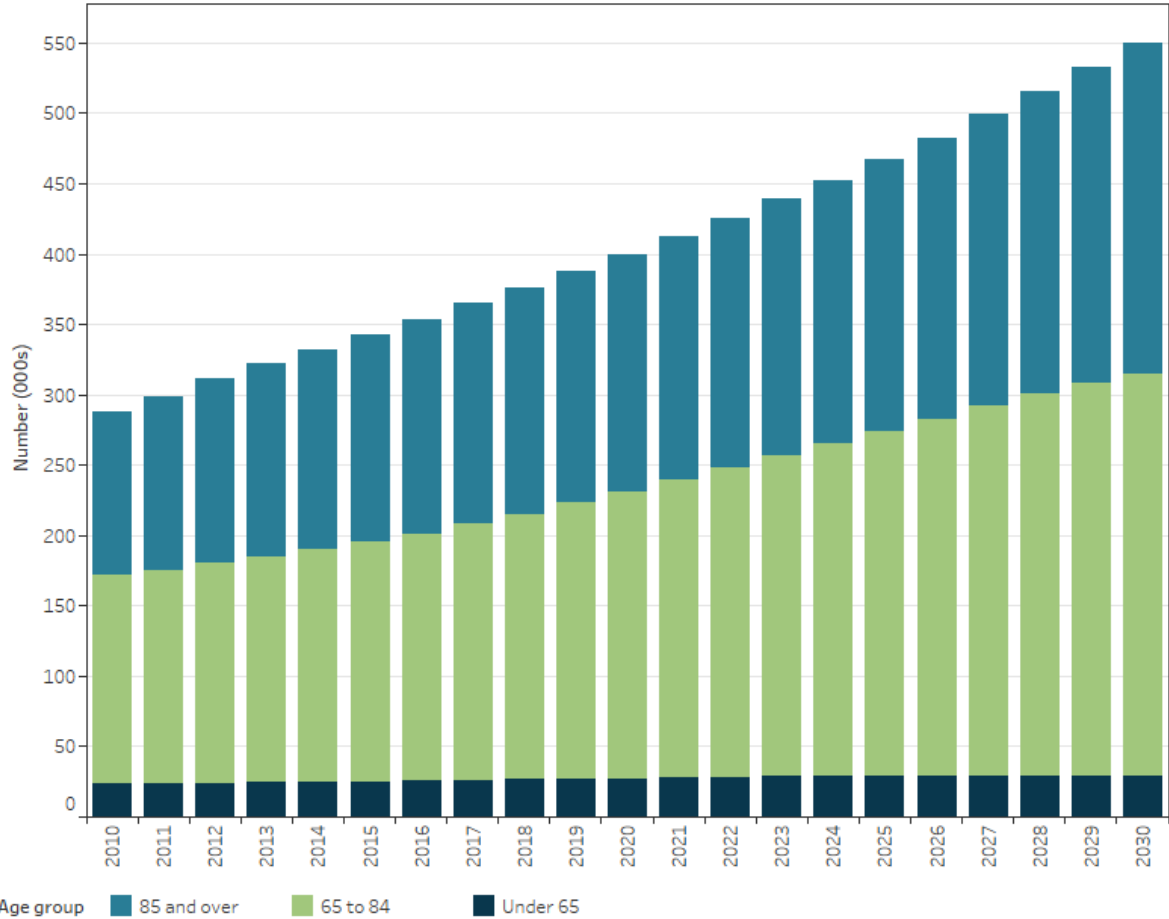
See International comparisons of health data for information on how the prevalence of dementia in Australia compares with other countries. Note, the Australian dementia prevalence rates shown in the international comparisons section are produced by the Organisation for Economic Co-operation and Development (OECD). These rates differ from the Australian dementia prevalence estimates described in this section due to methodological differences. The OECD dementia prevalence rates are used for international comparisons only.

Risk factors

A range of factors are known to contribute to the risk of dementia and may affect the progression of its symptoms. Some risk factors can't be changed, such as age, genetics and family history. However, several are modifiable, and can be altered to prevent or delay dementia. High levels of education, physical activity and social engagement are all protective against developing dementia, while smoking, hearing loss, depression, diabetes, hypertension, and obesity are all linked to an increased risk of developing dementia (Livingston et al. 2017).

Impact

Deaths

Dementia was the second leading cause of death in Australia in 2018, accounting for almost 14,000 deaths (ABS 2019). For females, dementia was the leading cause of death (nearly 9,000 deaths), while it was the third leading cause for males (nearly 5,000 deaths).

Between 2008 and 2017, the number of deaths where dementia was an underlying cause increased by 68% (Figure 2). Further, the dementia death rate grew from 33 deaths per 100,000 people to 42. This may reflect not only an increase in the number of older people with dementia, but also changes in how dementia deaths are recorded.

See Causes of death.

Measure
○ Number of deaths
○ Age-standardised rate (deaths per 100,000)

Select year(s):
2008 to 2017
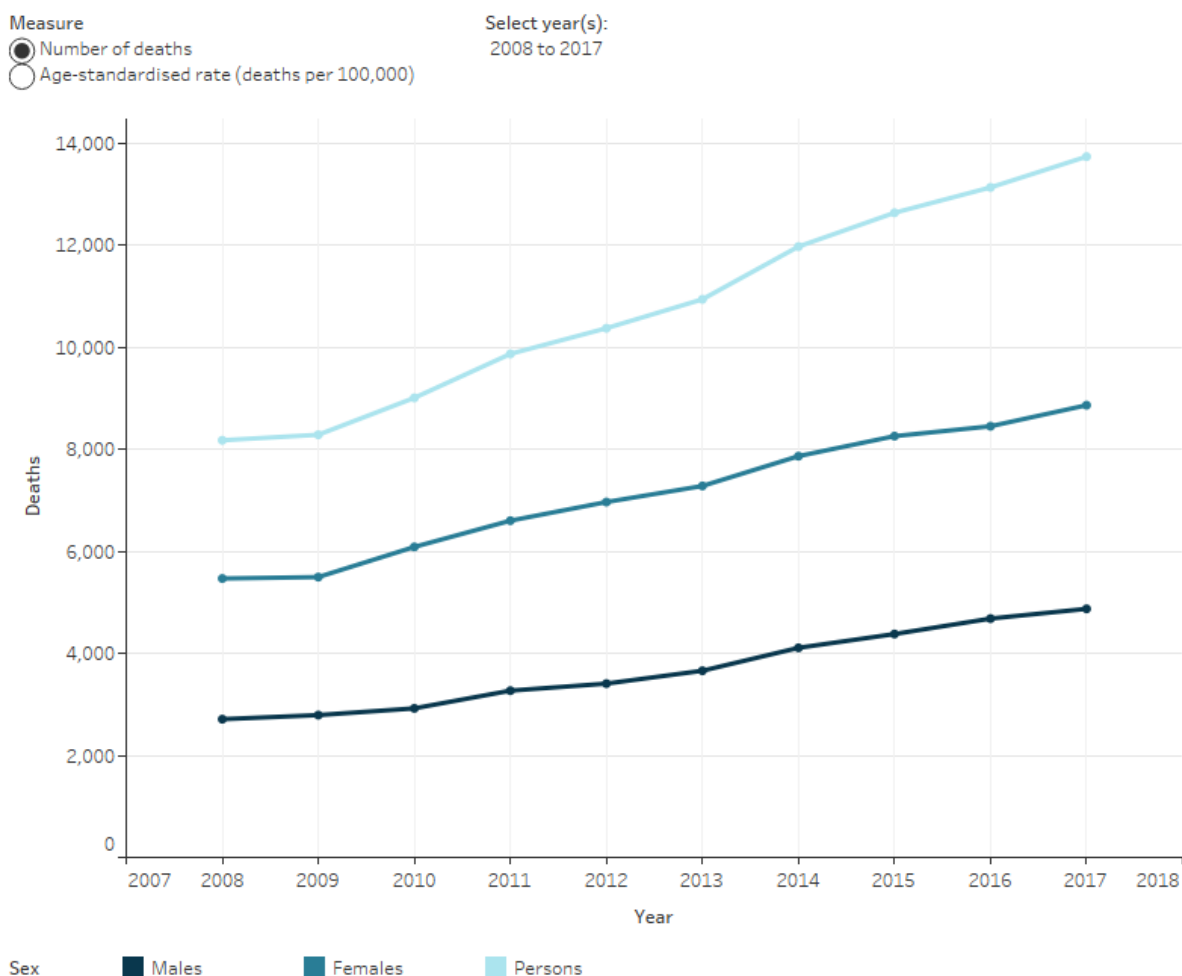
Source: Australian Institute of Health and Welfare (AIHW) 2019. GRIM (General Record of Incidence of Mortality) books 2017: Dementia and Alzheimer disease. Canberra: AIHW.
http://www.aihw.gov.au/

Burden of disease

Burden of disease refers to the quantified impact of a disease or injury on an individual or population. Dementia was the fourth leading cause of disease and injury burden among the Australian population in 2015, and was responsible for 3.8% of the total burden of disease and injury, equal to 179,804 disability-adjusted life years (DALY). The burden from dementia accounted for a greater proportion of the total burden for females than males, accounting for 5.0% of total DALY for females and 2.7% for males. This is influenced by the fact that women live longer than men and therefore are more likely to develop dementia. Females comprised 52% of dementia hospitalisations (Figure 3) and 58% of people dispensed anti-dementia medicines in 2017–18.

As expected, the dementia burden was also higher among people aged 65 and over, for whom it was the second leading cause of total burden of disease and injury (7.7% of total DALY) (AIHW 2019c).

See [Burden of disease](#).

Expenditure

The Australian Disease Expenditure Study estimated that about $428 million in health expenditure (excluding aged care expenditure) was attributable to dementia in Australia in 2015–16, with $5.5 million more spent on females than males. More than $324 million was spent on hospital-related services for people with dementia—which includes both public and private sectors and admitted and non-admitted care. Public hospital admitted patients were the largest contributor to hospital expenditure, accounting for $212 million. Almost $90 million was spent on public hospital outpatient services, around $17 million on private hospital services, and $5.1 million was spent on public hospital emergency department services. Public hospital outpatient expenditure was higher for females than for males (about $49 million for females compared with about $41 million for males). However, public hospital admitted patient expenditure was higher for males—$112 million was spent on the care of males compared with $100 million on females (AIHW 2019d).

In the same year (2015–16), more than $40 million was spent on medicines for people with dementia. About half of this was for 4 specific medicines that are prescribed to treat Alzheimer's disease—Donepezil, Galantamine, Rivastigmine and Memantine (see the blue box below for more information on these medicines) (AIHW 2019b). Services provided by specialists accounted for more than $16 million while general practitioner services accounted for almost $23 million, and $3.1 million was spent on allied health and other services. About $13 million was spent on general practitioner services for females compared with $9.6 million for males (AIHW 2019d).

See [Health expenditure](#).

Treatment and management

Hospitalisations

In 2017–18, dementia was recorded as the principal and/or additional diagnosis in 93,800 hospitalisations (Figure 3). Although more than half of these hospitalisations involved females (52%), after accounting for differences in age and population size, males were 1.3 times as likely to be hospitalised with dementia as females. The majority of people hospitalised with a principal and/or additional diagnosis of dementia were aged 85–94 (43%), while 3.3% were under 65 and 4.6% were over 95.

See [Hospital care](#).

Trends in hospitalisations

The number of hospitalisations where dementia was recorded as the principal and/or additional diagnosis fluctuated between 2008–09 and 2017–18, from about 86,700 to 93,800 (Figure 3). Overall, the rate of hospitalisations involving dementia decreased by 17% in this period—from 357 to 296 hospitalisations per 100,000 population.
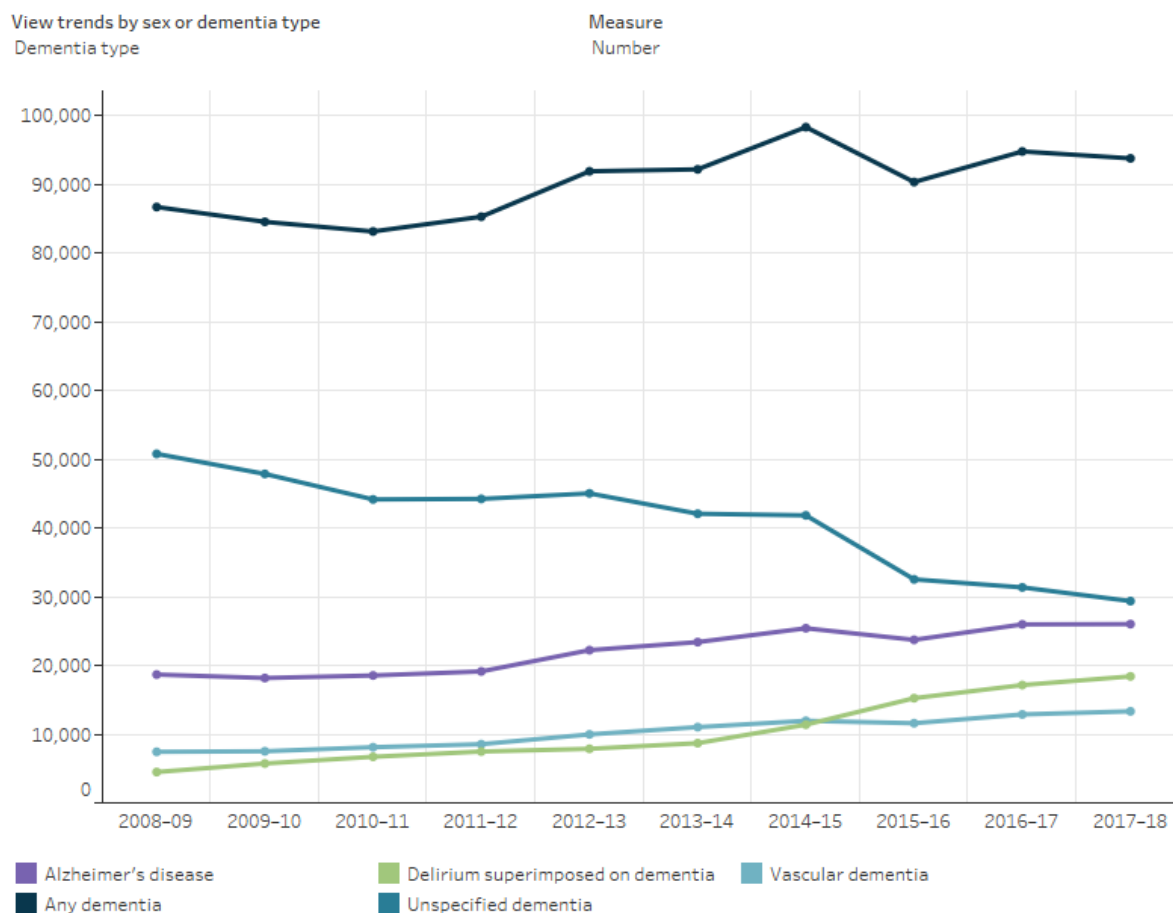
It is not clear why there has been a decrease in the rate of dementia hospitalisations, however some of the decrease may be due to changes to the way dementia is coded in hospitals data. For example, in 2015, 29 supplementary codes for chronic conditions (including dementia) and a new Australian Coding Standard were implemented in the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification, 9th edition, and the Australian Coding Standards, which are used to record diagnoses in hospitals data (see AIHW 2019a for further information). Further research is required to determine the influence, if any, of the supplementary codes on the coding of hospitalisations for dementia as this section includes dementia hospitalisations as the principal and/or additional diagnosis only.

Hospitalisations for individual types of dementia (principal and/or additional diagnosis) also changed over time. While the number of hospitalisations involving unspecified dementia decreased by 42%, there was an increase in the number of hospitalisations involving vascular dementia (79%), Alzheimer's disease (39%) and delirium superimposed on dementia (310%).

Similar to the trends in the number of hospitalisations by dementia type, there was a decrease in the age-adjusted rate of hospitalisations involving unspecified dementia (56%), and an increase in the age-adjusted rate for hospitalisations involving vascular dementia (39%), Alzheimer's disease (6%) and delirium superimposed on dementia (211%).

The large increase in the number and rate of hospitalisations involving delirium superimposed on dementia may be a result of a marked increase in awareness and education for delirium during this decade (Department of Health and Ageing 2011; Department of Health & Human Services 2011).

Figure 3: Number and age-standardised rates of dementia hospitalisations, by dementia type and sex, 2008–09 to 2017–18

View trends by sex or dementia type
Dementia type

Measure
Number

Legend:
- Alzheimer's disease
- Any dementia
- Delirium superimposed on dementia
- Unspecified dementia
- Vascular dementia

Note: It is possible for a dementia hospitalisation to have more than 1 type of dementia recorded as a diagnosis. Therefore, the numbers for dementia hospitalisations by dementia type are not mutually exclusive.
Source: AIHW National Hospital Morbidity Database.
http://www.aihw.gov.au/

Hospitalisations by remoteness and socioeconomic areas

After accounting for age and population size, those living in *Major cities* were 1.2 times as likely to be hospitalised with dementia as those living in *Inner regional and outer regional* areas in 2016–17. Those living in *Remote and very remote* areas had a similar likelihood of being hospitalised with dementia to those living in *Major cities*. People living in the lowest socioeconomic areas were 1.1 times as likely to be hospitalised with dementia as those living in the highest socioeconomic areas (AIHW 2019e).

Medicines

Although there is no cure for dementia, anti-dementia medicines can be used to alleviate some of the symptoms of dementia. This section covers the 4 medicines used

to treat Alzheimer's disease that are subsidised by the Australian Government through the Pharmaceutical Benefits Scheme and Repatriation Pharmaceutical Benefits Scheme.

Anti-dementia medicines

Cholinesterase inhibitors: Donepezil, Galantamine and Rivastigmine

Cholinesterase inhibitors are a class of anti-dementia medicine that prevent the breakdown of acetylcholine, an important component in cognitive pathways in the brain. Levels of acetylcholine decrease in people with Alzheimer's disease and some other dementias. By increasing the availability of acetylcholine in the brain, these medicines are thought to improve or stabilise cognitive function in people with dementia.

N-methyl-D-aspartate (NMDA) receptor antagonist: Memantine

Memantine is a type of anti-dementia medicine that blocks the functioning of NMDA receptors and reduces the levels of glutamate in the brain, thereby preventing the movement of excess calcium in the brain. Increased levels of glutamate in the brain may contribute to the symptoms and progression of Alzheimer's disease and other dementias. NMDA receptor antagonists are thought to improve or stabilise cognitive function in people with Alzheimer's disease, with improvements seen in the function of daily activities, thinking and behaviour.

About 572,000 prescriptions for anti-dementia medicines were dispensed to 60,900 people aged 30 and over with a diagnosis of Alzheimer's disease in 2017–18 (Figure 4).

See Medicines in the health system.

Medicines by age, sex and medicine name

Of people aged 30 and over and using anti-dementia medicines, 59% were women and 42% were men. After accounting for differences in age and population size, men and women were dispensed anti-dementia medicines at similar rates (3 and 4 per 1,000 population, respectively). The majority (63%) of people on anti-dementia medicines were aged 65–84, with 4.0% aged 30–64 and 32% aged over 85.

In 2017–18, the medication dispensed most often was Donepezil (66%), followed by Galantamine (14%), Rivastigmine (12%) and Memantine (8.5%) (Figure 4). The supply of all 4 types of anti-dementia medications was higher among women than men.

Figure 4: Number of prescriptions for dispensed anti-dementia medicines, by medicine, sex and age, 2017–18

Age group (years)
Total
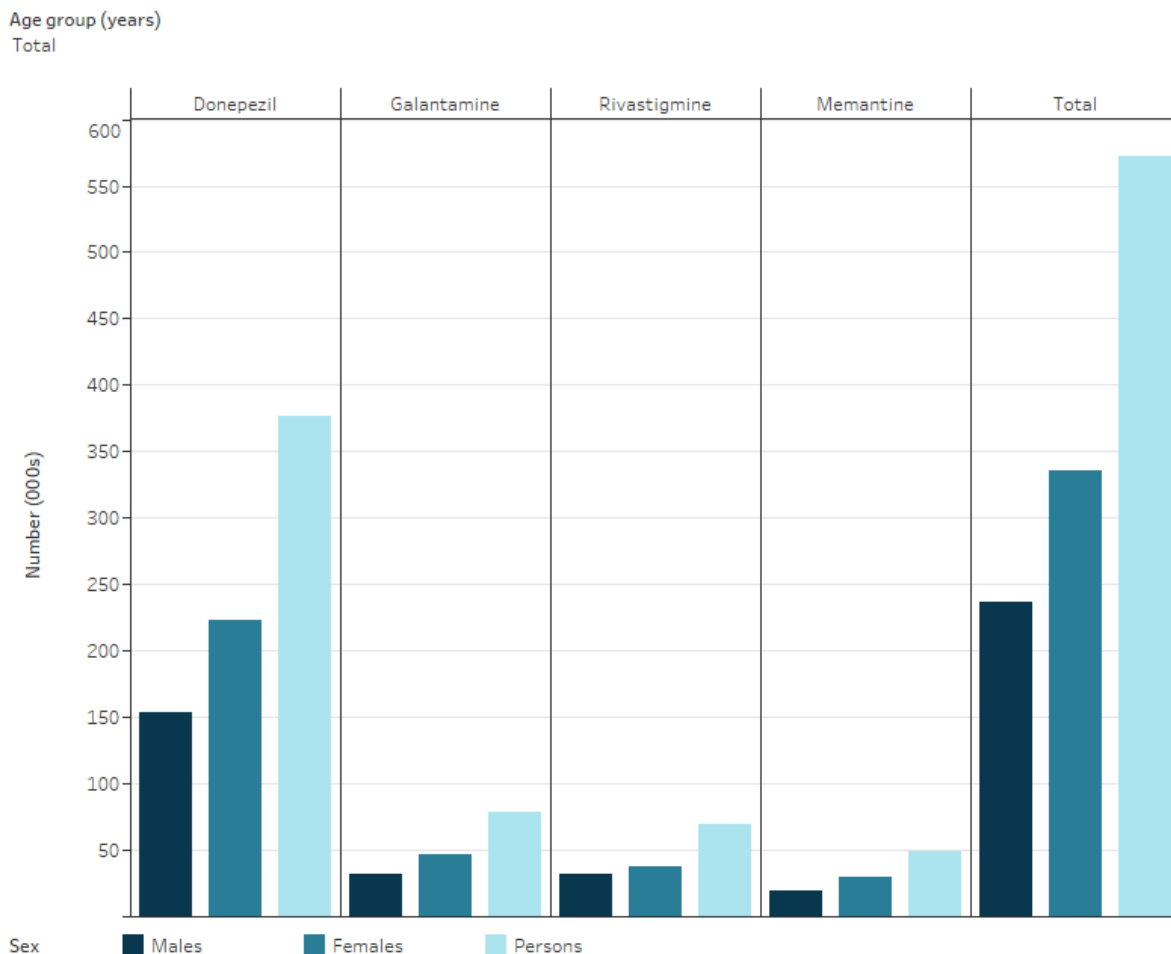
Note: Prescriptions with missing sex and/or age data were excluded.
Source: Pharmaceutical Benefits Scheme and Repatriation Pharmaceutical Benefits Scheme claims data.
http://www.aihw.gov.au/

Aged care

Aged care services are an important resource for both people with dementia and their carers. Services include those provided in the community for people living at home (home support and home care), and residential aged care services for those requiring permanent care or short-term respite stays. While aged care service use data provide some insights into the care needs of people with dementia accessing these services, they may underestimate the number of people with dementia.

About 107,000 people were using home care at 30 June 2019. Of these people, around 9% received the dementia and cognition supplement, a payment for people with moderate to severe levels of cognitive impairment associated with dementia or other conditions.

At 30 June 2019, about 183,000 people were in permanent residential aged care, and just over half (53%) had been diagnosed with dementia. The care needs of people in permanent residential care are assessed through the Aged Care Funding Instrument (ACFI) across 3 domains of care: *activities of daily living*, *cognition and behaviour*, and *complex health care*. The care needs in each domain are allocated a rating of nil, low, medium, or high. In 2019, people with dementia had higher care needs ratings than people without dementia on the *activities of daily living* and *cognition and behaviour* care domains; the differences were largest for the *cognition and behaviour* domain, where nearly twice as many people with dementia (80%) had high care needs compared with people without dementia (46%). A similar proportion of people with and without dementia had high care needs in the *complex health care* domain (AIHW 2020a, 2020b).

See 'Changes in people's health service use around the time of entering permanent residential aged care' in Australia's health 2020: data insights.

Where do I go for more information?

For more information on dementia, see:

- Hospital care for people with dementia 2016–17
- Dispensing patterns for anti-dementia medications 2016–17
- Dementia in Australia 2012
- Improving dementia data in Australia: supplement to Dementia in Australia 2012
- Australian Bureau of Statistics Disability, Ageing and Carers, Australia: summary of findings, 2018

Visit Dementia for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019. Causes of death, Australia, 2018. ABS cat. no. 3303.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2018. Australia's health 2018. Australia's health series no. 16. Cat. no. AUS 221. Canberra: AIHW.

AIHW 2019a. Admitted patient care 2017–18: Australian hospital statistics. Health services series no. 90. Cat. no. HSE 225. Canberra: AIHW.

AIHW 2019b. Disease Expenditure Database:findings based on unit record analysis. Canberra: AIHW.

AIHW 2019c. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019d. Disease expenditure in Australia. Cat. no. HWE 76. Canberra: AIHW.

AIHW 2019e. Hospital care for people with dementia 2016–17. Cat. no. AGE 94. Canberra: AIHW.

AIHW 2020a. GEN dashboard 2018–19: People using aged care 2018–19. Canberra: AIHW.

AIHW 2020b. GEN fact sheet 2017–18: People's care needs in aged care. Canberra: AIHW.

DA (Dementia Australia) 2018. Alzheimer's disease. Australia: DA.

DA 2020. Dementia statistics. Australia: DA.

Department of Health and Ageing 2011. Delirium care pathways. Canberra: Department of Health and Ageing.

Department of Health & Human Services 2011. Clinical Practice Guidelines for the Management of Delirium in Older People 2006. Victoria: Department of Health & Human Services.

Livingston G, Sommerlad A, Orgeta V, Costafreda SG, Huntley J, Ames D et al. 2017. Dementia prevention, intervention, and care. The Lancet 390:2673–734.

Diabetes

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https://www.aihw.gov.au/reports/australias-health/diabetes

Diabetes is a chronic condition marked by high levels of glucose (sugar) in the blood. It is caused by the body being unable to produce insulin (a hormone made by the pancreas to control blood glucose levels) or to use insulin effectively, or both.

The main types of diabetes are:

- type 1 diabetes—an autoimmune disease that usually occurs in childhood or early adulthood
- type 2 diabetes—the most common form of diabetes, generally occurring in adulthood. It is largely preventable and is often associated with lifestyle factors such as insufficient physical activity, unhealthy diet, obesity and tobacco smoking. Risk is also associated with genetic and family-related factors
- gestational diabetes—when higher than normal blood glucose is diagnosed for the first time during pregnancy
- other diabetes—a name for less common forms of diabetes resulting from a range of different health conditions or circumstances. This includes diseases affecting the pancreas and endocrine system, viral infections, genetic syndromes and in some cases diabetes triggered from medications needed to manage or treat another health condition.

Treatment aims to maintain healthy blood glucose levels to prevent both short- and long-term complications, such as heart disease, kidney disease, blindness and lower limb amputation. Insulin replacement therapy is required by all people with type 1 diabetes, as well as by a proportion of people with other forms of diabetes as their condition worsens over time.

How common is diabetes?

Prevalence

An estimated 1 in 20 (4.9%, or 1.2 million) Australians had diabetes in 2017–18, based on self-reported data from the Australian Bureau of Statistics (ABS) 2017–18 National Health Survey. This includes people with type 1 diabetes, type 2 diabetes, and type unknown, but excludes gestational diabetes (ABS 2019a).

The prevalence of diabetes increases with age. Almost 1 in 5 (19%) Australians aged 75 and over had diabetes in 2017–18, 4 times as high as for 45–54 year olds (4.5%) and 1.9

times as high as for 55–64 year olds (10%). Diabetes was also more common in males (5.0%) than females (3.8%) after controlling for age (ABS 2019a).

The age-standardised rate of self-reported diabetes increased from 3.3% in 2001 to 4.4% in 2017–18. The rate of self-reported diabetes remained stable between 2014–15 and 2017–18 (Figure 1).

The prevalence rates presented above are likely to underestimate the true prevalence of diabetes in the Australian population. This is because they are based on people who have received a formal medical diagnosis of diabetes. However, Australian studies have shown that many people have undiagnosed diabetes. For example, half of the participants in the 1999−2000 AusDiab Study had test results indicating undiagnosed diabetes prior to participating in the study (Dunstan et al. 2001). In the more recent 2011−12 ABS Australian Health Survey, which collected blood glucose data, 20% of participating adults aged 18 and over had undiagnosed diabetes prior to the survey (ABS 2013a). Further research is required to examine whether or not the proportion of people with undiagnosed diabetes in Australia has decreased over time and the impact of this on the prevalence of disease in Australia.

Figure 1: Prevalence of self-reported diabetes, by sex, 2001 to 2017–18

Measure
○ Number
○ Per cent

Sex
☑ Males
☑ Females
☑ Persons

Males   Females   Persons
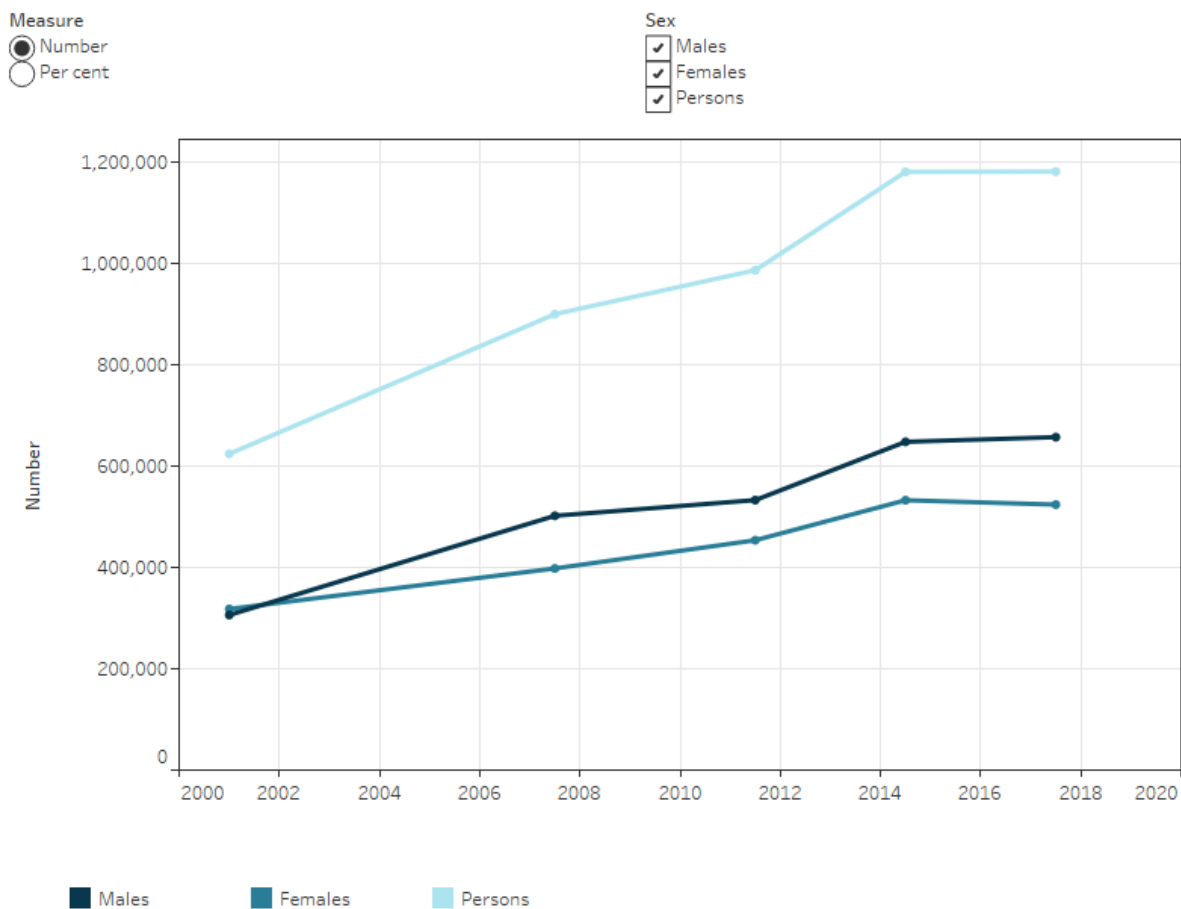
Notes:
1. Respondent ever told by a doctor or a nurse that they had diabetes. Includes type 1, type 2 and type unknown diabetes. Data for 2004–05 are not available using this definition.
2. The estimates also include persons who reported they had diabetes but that it was not current at the time of interview.
3. Per cent age-standardised to the Australian population as at 30 June 2001.
Source: ABS 2003; ABS 2009; ABS 2013b; ABS 2016; ABS 2019a.
http://www.aihw.gov.au/

Incidence

Around 47,800 new cases of type 1 diabetes were diagnosed between 2000 and 2018 according to the National (insulin-treated) Diabetes Register (NDR). This was around 2,500 new cases of type 1 diabetes each year—an average of 7 new cases a day (AIHW 2020).

There were 2,800 total new cases (incidence) of type 1 diabetes in Australia in 2018, equating to 12 cases per 100,000 population after controlling for age (AIHW 2020). Work is under way to refine methods for reporting type 2 diabetes incidence.

The incidence of type 1 diabetes remained relatively stable between 2000 and 2018, fluctuating between 11 and 13 new cases per 100,000 population each year (AIHW 2020).

In 2017–18, around 1 in every 6 females aged 15–49 who gave birth in hospital were diagnosed with gestational diabetes (16%, or 43,100 females), according to the National Hospital Morbidity Database.

Between 2000–01 and 2017–18, the rate of females diagnosed with gestational diabetes in Australia more than tripled (Figure 2). However, caution should be taken when comparing rates over time. A number of factors, including new diagnostic guidelines, are likely to have had an impact on the number of females diagnosed with gestational diabetes in recent years. See the discussion on changing trends in the AIHW's Incidence of gestational diabetes in Australia report for more detail.

Figure 2: Incidence of gestational diabetes, 2000–01 to 2017–18
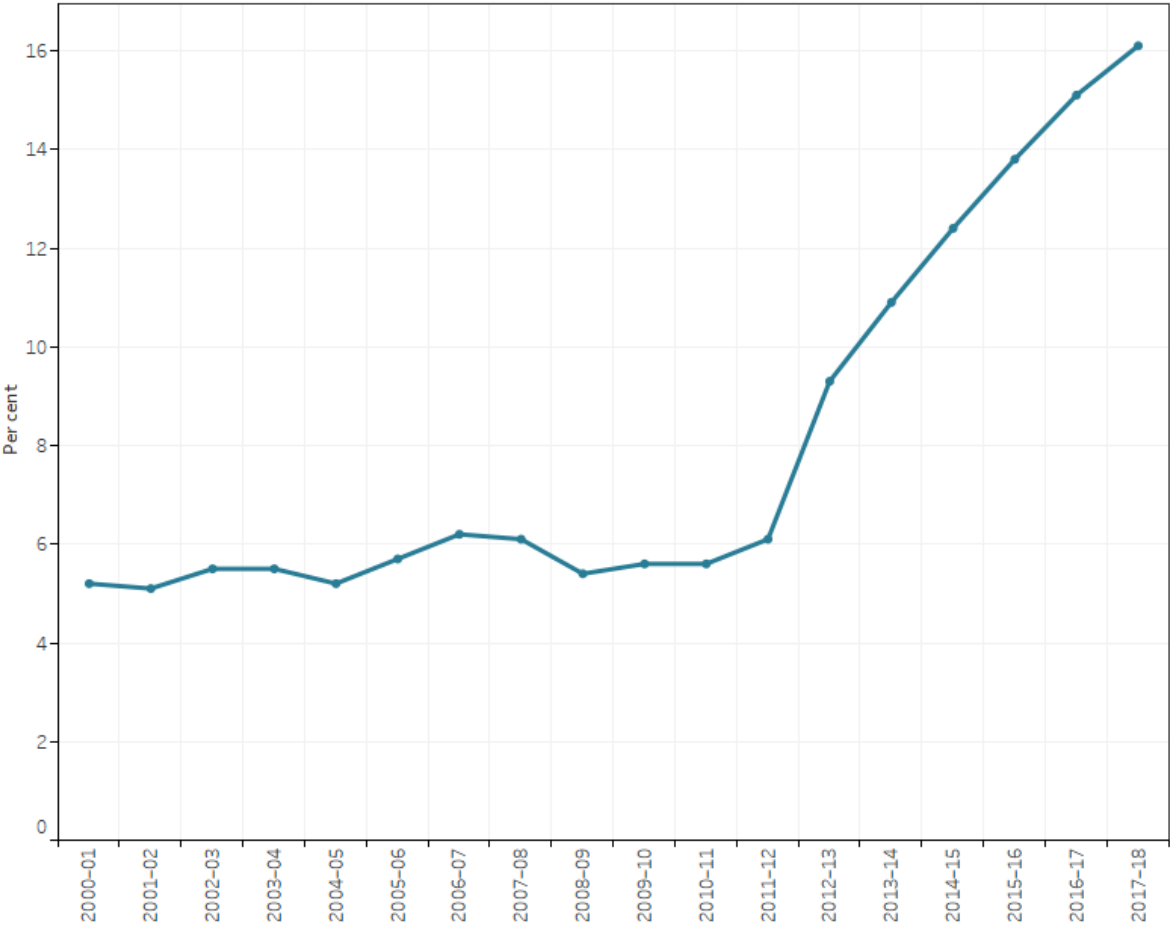
[Notes]

Caution should be taken when comparing rates over time. See the trends discussion in the gestational diabetes web report for more information.
https://www.aihw.gov.au/reports/diabetes/incidence-of-gestational-diabetes-in-australia/contents/changing-trends
Source: AIHW 2019d.
http://www.aihw.gov.au/

Impact

Burden of disease

In 2015, type 2 diabetes contributed to 2.2% of the total disease burden (fatal and non-fatal) in Australia. Type 2 diabetes was the 12th leading contributor to total burden. Overall, the burden from type 2 diabetes increased slightly from 1.8% in 2003 to 2.2% in 2015. Type 1 diabetes contributed to 0.3% of Australia's disease burden in 2015—unchanged from both 2003 and 2011 (AIHW 2019a).

In 2015, 4.7% of the total burden of disease could have been prevented by reducing exposure to the modifiable risk factor 'high blood plasma glucose levels' (including diabetes) (AIHW 2019a).

See Burden of disease.

Expenditure

In 2015–16, an estimated 2.3% ($2.7 billion) of total disease expenditure in the Australian health system was attributed to diabetes (AIHW 2019c).

See Health expenditure.

Adverse effects in pregnancy

Based on data from the National Perinatal Data Collection for 2014−2015, mothers with pre-existing diabetes (type 1 and type 2 diabetes) and gestational diabetes had higher rates of caesarean section, induced labour, pre-existing and gestational hypertension, and pre-eclampsia compared with mothers with no diabetes in pregnancy (AIHW 2019b).

Compared with babies of mothers with gestational diabetes or no diabetes, babies of mothers with pre-existing diabetes had higher rates of pre-term birth, stillbirth, low and high birthweight, low Apgar score, resuscitation, and special care nursery/neonatal intensive care unit admission, and stayed longer in hospital (AIHW 2019b).

See Health of mothers and babies.

Deaths

According to the AIHW National Mortality Database, diabetes was the underlying cause of around 4,700 deaths in 2018. However, it contributed to around 16,700 deaths (10.5% of all deaths) (AIHW 2019e).

See Causes of death.

Treatment and management

Glycaemic control

Glycosylated haemoglobin (HbA1c) can be used to assess the average blood glucose over the preceding 6−8 weeks and is considered the gold standard for assessing glycaemic control. Targets for HbA1c in people with diabetes should be individualised, but a general target of less than or equal to 7.0% is recommended for people with type 2 diabetes (Phillips 2012).

In 2011−12, an estimated 55% of adults with known diabetes achieved the target level for HbA1c based on measured data from the 2011−12 Australian Health Survey. The proportion who effectively managed their diabetes increased with age for both men and women. Overall, 40% of adults aged 18−54 effectively managed their diabetes and this proportion rose to 71% among those aged 75 and over (AIHW 2018).

In 2018, the mean HbA1c of individuals attending services for diabetes care at 50 diabetes centres across Australia was 8.2%, according to the Australian National Diabetes Audit−Australian Quality Self-Management Audit (ANDA-AQSMA) (National Association of Diabetes Centres 2018). The average HbA1c has remained relatively stable since 2010.

See Biomedical risk factors.

Medicines

In 2018−19, over 14 million Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceutical Benefits Scheme (RPBS) prescriptions for medicines used to treat diabetes were dispensed to the Australian community (Department of Health 2019). Metformin was the eighth most dispensed medicine in 2018−19.

According to the NDR, 31,300 people began using insulin to treat their diabetes in 2018. Of the people with diabetes who began using insulin, 54% had type 2 diabetes, 34% were females who had gestational diabetes, 9.0% were people who were newly diagnosed with type 1 diabetes and 2.0% were people who had other forms of diabetes (AIHW 2020).

See Medicines in the health system.

Hospitalisations

Around 1.2 million hospitalisations were associated with diabetes in 2017−18, with 4.5% recorded as the principal and 95.5% recorded as the additional diagnosis, according to the AIHW National Hospital Morbidity Database. This represents 11% of all hospitalisations in Australia (AIHW 2019d).

See Hospital care.

Variation between population groups

The impact of diabetes was higher among Aboriginal and Torres Strait Islander people, those living in lower socioeconomic areas and in remote areas. The diabetes prevalence rate was 2.9 times as high among Aboriginal and Torres Strait Islander people as among non-Indigenous Australians based on age-standardised self-reported data from the 2018–19 National Aboriginal and Torres Strait Islander Health Survey (ABS 2019b). Generally, the impact of diabetes increases with increasing remoteness and socioeconomic disadvantage. Deaths related to diabetes were 2.1 times as high in *Remote and very remote* areas compared with *Major cities*, and 2.3 times as high in the lowest compared with the highest socioeconomic areas (Figure 3).

Figure 3: Impact of diabetes—Variation between selected population groups

Hover on the numbers for more information on the impact of diabetes in each population group.

Comparing rates for:	Indigenous / non-Indigenous	Remote and very remote / Major cities	Lowest / highest socioeconomic areas
Having diabetes	2.9x	1.2x	2.0x
Hospitalised for diabetes	3.9x	2.3x	2.0x
Dying from diabetes	4.0x	2.1x	2.3x
Burden of disease	5.6x	1.8x	2.2x

Sources: ABS 2019a; ABS 2019b; AIHW 2016; AIHW 2019a; AIHW 2019d; AIHW 2019e.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on diabetes, see:

- [Diabetes](#)
- [Incidence of insulin-treated diabetes in Australia](#)
- [Diabetes in pregnancy 2014–2015](#)
- [Incidence of gestational diabetes in Australia](#)
- Australian Bureau of Statistics [National Health Survey: first results, 2017–18](#)

Visit [Diabetes](#) for more on this topic.

References

ABS (Australian Bureau of Statistics) 2003. Microdata: [National Health Survey, 2001](#). ABS cat. no. 4324.0.55.001. Findings based on detailed microdata file analysis. Canberra: ABS.

ABS 2009. Microdata: [National Health Survey, 2007–08](#). ABS cat. no. 4324.0.55.001. Findings based on detailed microdata file analysis. Canberra: ABS.

ABS 2013a. [Australian Health Survey: biomedical results for chronic diseases, 2011–12](#). ABS cat. no. 4364.0.55.005. Canberra: ABS.

ABS 2013b. [Microdata: Australian Health Survey: National Health Survey, 2011–12](#). ABS cat. no. 4324.0.55.001. Findings based on detailed microdata file analysis. Canberra: ABS.

ABS 2016. [Microdata: National Health Survey, 2014–15](#). ABS cat. no. 4324.0.55.001. Findings based on detailed microdata file analysis. Canberra: ABS.

ABS 2019a. [Microdata: National Health Survey, 2017–18](#). ABS cat. no. 4324.0.55.001. Findings based on detailed microdata file analysis. Canberra: ABS.

ABS 2019b. [National Aboriginal and Torres Strait Islander Health Survey, 2018−19](#). ABS cat. no. 4715.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2016. [Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011.](#) Australian Burden of Disease Study series no. 6. Cat. no. BOD 7. Canberra: AIHW.

AIHW 2018. [Diabetes indicators for the Australian National Diabetes Strategy 2016–2020](#). Cat. no. CVD 81. Canberra: AIHW.

AIHW 2019a. [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015](#). Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. [Diabetes in pregnancy 2014–2015](#). Bulletin no. 146. Cat. no. CDK 7. Canberra: AIHW.

AIHW 2019c. Disease expenditure in Australia. Cat. no. HWE 76. Canberra: AIHW.

AIHW 2019d. National Hospital Morbidity Database. Findings based on unit record analysis. Canberra: AIHW.

AIHW 2019e. National Mortality Database. Findings based on unit record analysis. Canberra: AIHW.

AIHW 2020. Incidence of insulin-treated diabetes in Australia. Cat. no. CDK 11. Canberra: AIHW.

Department of Health 2019. PBS expenditure and prescriptions report 1 July 2018 to 30 June 2019. Canberra: Australian Government. Viewed 6 January 2020.

Dunstan D, Zimmet P, Welborn T, Sicree R, Armstrong T, Atkins R et al. 2001. Diabesity & associated disorders in Australia—2000: the accelerating epidemic. Melbourne: International Diabetes Institute.

National Association of Diabetes Centres 2018. ANDA-AQSMA 2018 final report. Viewed 18 February 2020.

Phillips PJ 2012. HbA1c and monitoring glycaemia. Australian family physician 41(1/2):37.

Health impacts of family, domestic and sexual violence

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/health-impacts-family-domestic-and-sexual-violence

Family, domestic and sexual violence is a major health and welfare issue in Australia occurring across all socioeconomic and demographic groups, but predominantly affecting women and children. The impacts of family, domestic and sexual violence can be serious and long-lasting, affecting an individual's health, wellbeing, education, relationships and housing outcomes. This page provides an overview of the health impacts of family, domestic and sexual violence, including hospitalisations for assaults, and deaths. See A*ustralia's welfare* snapshot Family, domestic and sexual violence for information on other support services.

What is family, domestic and sexual violence?

Family violence is violence between family members, such as between parents and children, siblings, and intimate partners.

Domestic violence is a type of family violence, and refers specifically to violence which occurs between current or former intimate partners (sometimes referred to as intimate partner violence).

Both family violence and domestic violence include behaviours such as:

- physical violence (hitting, choking, use of weapons)

- emotional abuse, also known as psychological abuse (intimidating, humiliating)

- coercive control (controlling access to finances, monitoring movements, isolating from friends and family).

Sexual violence covers sexual behaviours carried out against a person's will. This can occur in the context of family or domestic violence, or be perpetrated by other people known to the victim or by strangers (ABS 2017).

Other forms of violence and harassment that can occur within the context of family and domestic violence include: stalking, technology-facilitated abuse and image-based abuse. Elder abuse can also occur in the context of family violence, and occurs where there is an expectation of trust and/or where there is a power imbalance between the party responsible and the older person (Kaspiew et al. 2019).

How common is family, domestic and sexual violence?

According to the Australian Bureau of Statistics (ABS) Personal Safety Survey 2016, 1 in 6 (17%, or 1.6 million) women and 1 in 16 (6.1%, or 0.5 million) men had experienced physical or sexual violence from a current or previous cohabiting partner since the age of 15 (ABS 2017). Women were more likely to experience violence from a known person and in their home, while men were more likely to experience violence from a stranger and in a public place (ABS 2017). In times of major crisis, such as natural disasters and epidemics, the risk of family and domestic violence can increase (Peterman et al. 2020; van Gelder et al. 2020). Following the outbreak of COVID-19, Australian governments agreed to strengthen family and domestic violence support services to meet expected increases in need (COAG Women's Safety Council 2020; National Cabinet 2020).

Impact

Burden of disease

The Australian Burden of Disease Study 2015 estimated the amount of disease burden that could have been avoided if no female aged 15 and over in Australia in 2015 were exposed to intimate partner violence. Intimate partner violence includes physical violence, sexual violence and emotional abuse from a current or former cohabiting partner, boyfriend, girlfriend or date. The impact of this risk factor was estimated in women only, as evidence in the literature to identify the causally linked diseases and the amount of increased risk (relative risk) was available only for women (Ayre et al. 2016; GBD 2016 Risk Factor Collaborators 2017).

Six diseases were causally linked to exposure to partner violence: depressive disorders; anxiety disorders; early pregnancy loss; homicide and violence (injuries due to violence); and suicide and self-inflicted injuries.

In 2015, for females aged 15 and over, partner violence contributed to:

- 223 deaths (0.3% of all deaths) in Australia (including deaths linked to suicide, homicide & violence, alcohol use disorders and depressive disorders)
- 1.6% of the burden of disease and injury (AIHW 2019).

Mental health conditions were the largest contributor to the burden, with depressive disorders making up the greatest proportion (43%) followed by anxiety disorders (30%). Partner violence was ranked as the third leading risk factor contributing to total disease burden for women aged 25–44, behind child abuse & neglect during childhood, and illicit drug use (AIHW 2019).

If no female aged 15 and over had experienced partner violence in 2015 there would have been (among females aged 15 and over):

- 41% less homicide & violence (where females were the victim)
- 18% less early pregnancy loss
- 19% less suicide & self-inflicted injuries
- 19% less depressive disorders
- 12% less anxiety disorders
- 4% less alcohol disorders (AIHW 2019).

Three diseases were causally linked to child abuse & neglect: depressive disorders, anxiety disorders, suicide & self-inflicted injuries.

For the Australian population in 2015, child abuse & neglect contributed to:

- 788 deaths (0.5% of all deaths)
- 2.2% of the total burden of disease and injury (AIHW 2019).

See Burden of disease.

Hospitalisations

Hospitals provide health services for those who have experienced assault. Data on hospitalised assault cases (hospitalisations) presented here involve adults aged 15 and over who were admitted to hospitals with injuries due to physical assault, sexual assault or maltreatment. As not all family violence assault hospitalisations are identified as such, the data below may underestimate rates of assault.

3 in 10

Assault hospitalisations for people aged 15 and over were due to family and domestic violence.

In 2017–18, almost 31% (6,500) of the 21,300 assault hospitalisations for adults aged 15 and over were a result of family and domestic violence. Of these 6,500 hospitalisations:

- 73% (4,800) were female and 27% (1,700) were male
- 65% (4,300) had the perpetrator reported as a spouse or domestic partner
- 35% (2,300) had the perpetrator reported as a parent or other family member.

The remaining assault hospitalisations had another perpetrator reported, or the relationship between perpetrator and victim was not specified (Figure 1). Almost two-fifths (38%, or 8,100) of assault hospitalisations did not specify the relationship between perpetrator and victim.

Figure 1: Assault hospitalisations, people aged 15 and over, by perpetrator, 2017–18

Sex
Male
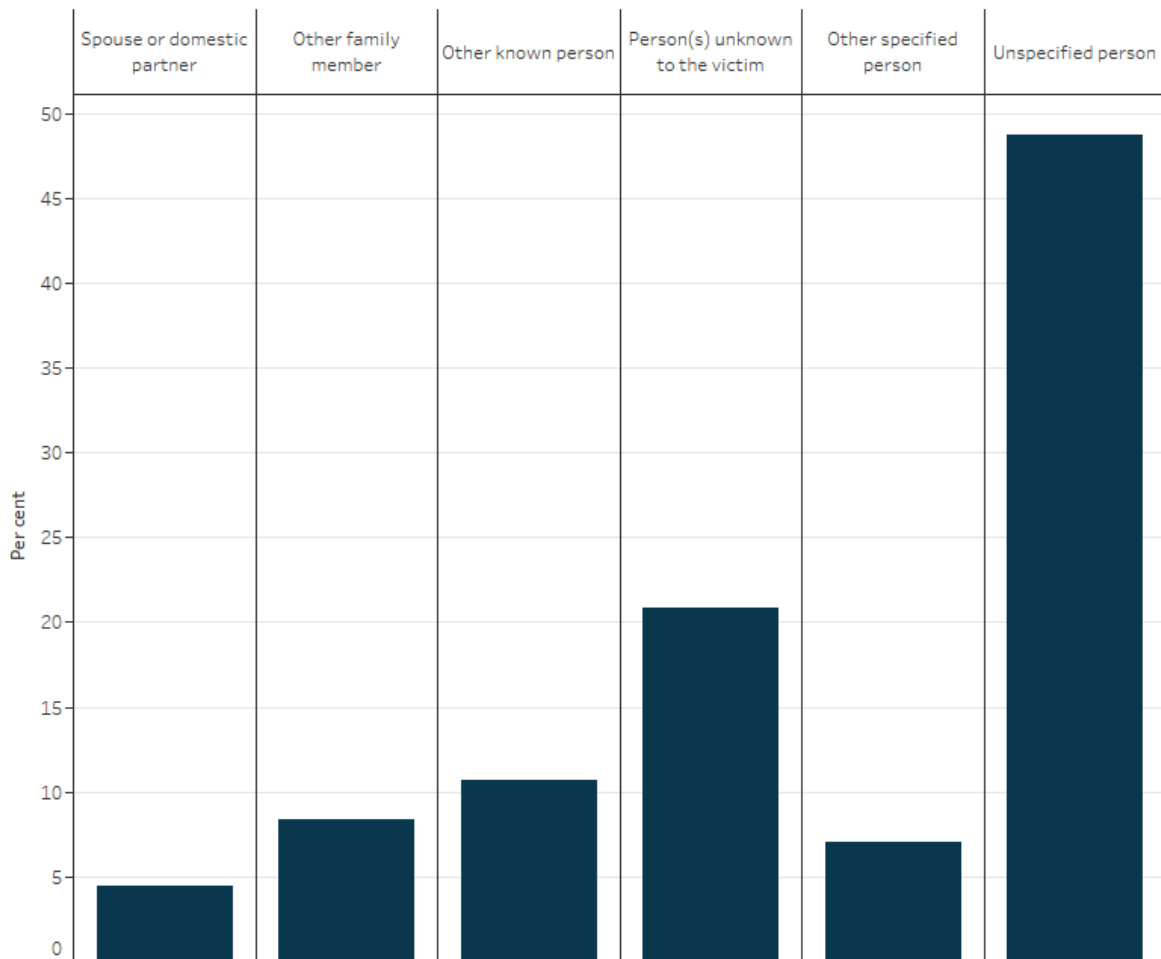
Source: AIHW National Hospital Morbidity Database.
http://www.aihw.gov.au/

In 2017–18, more than 2 in 3 hospitalisations of females due to assault by a spouse or domestic partner involved bodily force (67%, or 2,500), around 15% involved a blunt object and 7.1% a sharp object.

Hospitalisations of males for assault by a spouse or domestic partner were more likely to involve assault with an object (64%, or 384 hospitalisations) than with bodily force (28%, or 166 hospitalisations).

Over half (61%) of the hospitalisations for assault by a spouse or domestic partner included an injury to the head and/or neck in 2017–18. Injury to the head and/or neck was the main reason for:

- 63% (2,300) of hospitalisations for females aged 15 and over, including 229 for brain injury

- 46% (274) of hospitalisations for males aged 15 and over, including 28 for brain injury.

In 2017–18, pregnant females made up 7.9% (292) of female assault hospitalisations by a spouse or domestic partner. Trunk injuries (33%) were more common among pregnant females than among those who were not pregnant (12%).

See [Hospital care](#).

Long-term health impacts

Findings from the Australian Longitudinal Study on Women's Health demonstrated that women who had experienced childhood sexual abuse were more likely to have poor general health, and to experience depression and bodily pain, compared with those who had not experienced sexual abuse during childhood (Coles et al. 2018). Women who had experienced childhood sexual or emotional or physical abuse had higher long-term primary, allied, and specialist health care costs in adulthood, compared with women who had not had these experiences during childhood (Loxton et al. 2018).

Deaths

Between 2016–17 and 2017–18, the Australian Institute of Criminology's (AIC) National Homicide Monitoring Program (NHMP) recorded 183 domestic homicide victims from 173 domestic homicide incidents (see [Glossary](#) for definitions). Data from the NHMP are from police and coronial records. Of the 183 domestic homicide victims, there were:

- 101 victims of intimate partner homicide
- 30 victims of filicide
- 23 victims of parricide
- 8 victims of siblicide
- 21 victims of other family homicide (Bricknell 2020a; Bricknell 2020b).

Of all domestic homicide victims, 55% (100) were female. Of all female victims of domestic homicide, 73% (73) were killed by an intimate partner. For male victims of domestic homicide, 34% (28) were killed by an intimate partner (Figure 2). Victims of filicide—where a custodial, non-custodial or step-parent kills a child—accounted for 16% (30) of domestic homicide victims. Victims of filicide can include both children and adults. In 72% (124) of all domestic homicide incidents, the perpetrator was male (Bricknell 2020a; Bricknell 2020b).

In 2017–18, the rate of domestic homicides were 0.3 per 100,000—the lowest rate of domestic homicide since the collection began in 1989–90 (Bricknell 2020a; Bricknell 2020b).

Data from *ABS Recorded Crime—Victims* are also available to report on family and domestic violence homicides where incidents have been recorded by police. Homicide and related offences include: murder, attempted murder and manslaughter.

In 2018, there were 142 family and domestic violence homicide and related offences, of which 93 (66%) were murder and 41 (29%) were attempted murder. Of the 142 victims of family and domestic violence homicide, 53% were female and 24% were aged 0–19 (ABS 2019).

See Causes of death.

Figure 2: Proportion of domestic homicide victims, by type of homicide, by sex of victim, 2016–17 to 2017–18
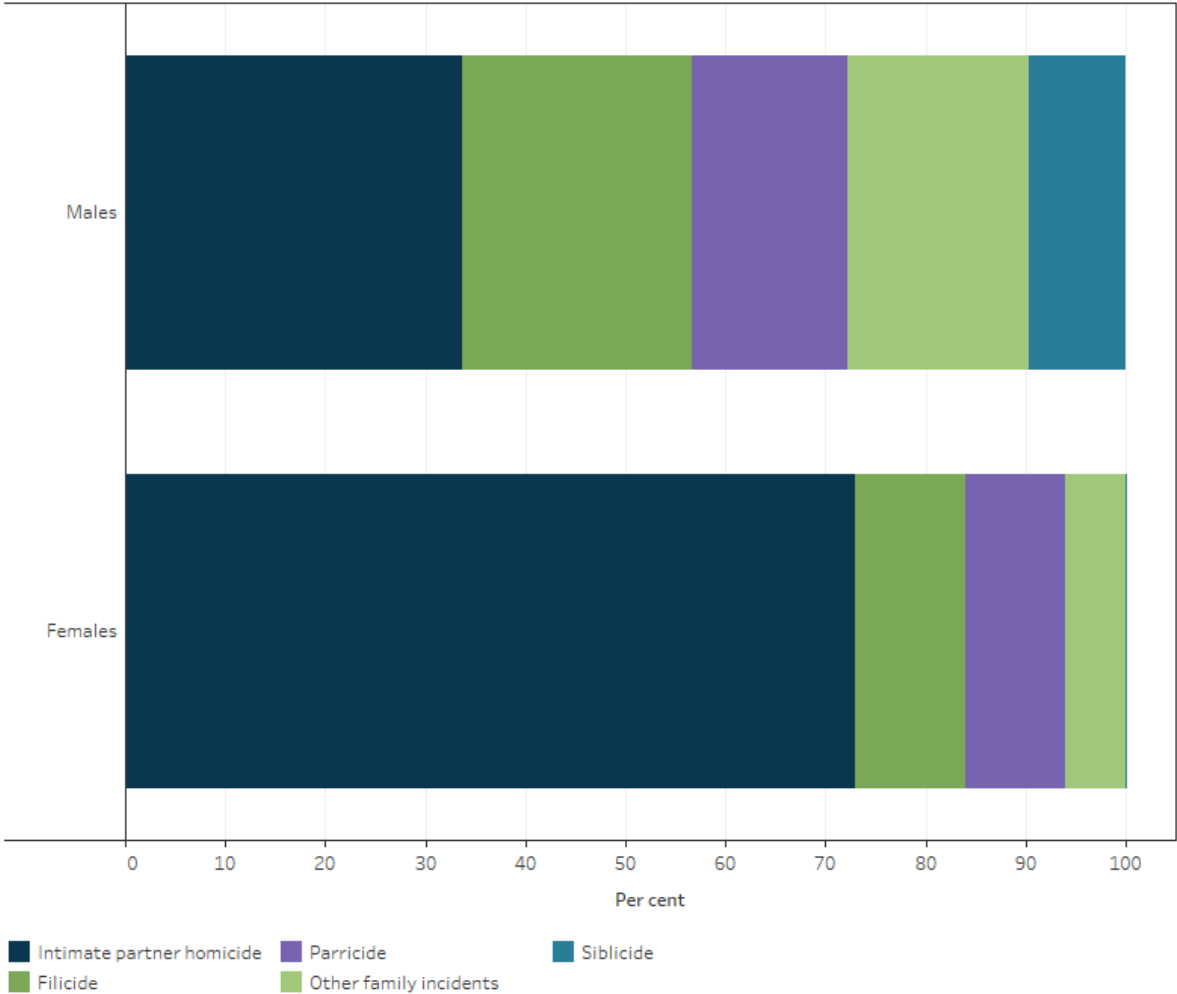
Source: Bricknell 2020a, 2020b.
http://www.aihw.gov.au/

Population groups

Family, domestic and sexual violence occurs across all ages and demographics. However some groups are more vulnerable than others, because they are at greater risk or because the impacts and outcomes of violence can be more serious or long-lasting.

Women

In 2017–18, assault by a spouse or domestic partner accounted for 48% of assault hospitalisations for females aged 15 and over. The rate of assault hospitalisations for injury by a spouse or domestic partner was higher for females than males across every age group, except for those aged 85 and over.

Children and young people

The impacts of family, domestic and sexual violence on children can be severe, affecting their health, wellbeing, education, relationships and housing outcomes (ANROWS 2018). In 2017–18, there were 628 hospitalisations of children aged 0–14 for injuries due to abuse (including assault, maltreatment and neglect). Of the 495 hospitalisations where a perpetrator was specified, 65% (321) related to family violence with 47% (231) of perpetrators recorded as a parent.

In 2017–18, there were 5,000 hospitalisations of young people aged 15–24 due to assault. Of these cases, 24% (1,200) were perpetrated by a family member. Assault perpetrated by a spouse or domestic partner accounted for 63% (753) of family and domestic violence-related assault hospitalisations.

See Health of children and Health of young people.

People living in lower socioeconomic areas

In 2017–18, people aged 15 and over living in the lowest socioeconomic areas were more than 6 times as likely to be hospitalised for assault by a spouse or domestic partner (47 per 100,000) than those living in the highest socioeconomic areas (7.1 per 100,000). More than 2 in 5 (45%, or 1,900) hospitalisations for assault perpetrated by a spouse or domestic partner involved people living in the lowest socioeconomic areas.

See Health across socioeconomic groups.

People living in remote areas

In 2017–18, the hospitalisation rate for assault by a spouse or domestic partner was 562 per 100,000 people for people aged 15 and over living in *Very remote* areas and 200 per 100,000 for people living in *Remote* areas. People living in *Major cities*, *Inner regional*, and *Outer regional* areas had lower rates (12, 13 and 36 per 100,000 respectively). These findings are affected by the higher proportions of Indigenous Australians living in *Very Remote* areas.

See Rural and remote health.

Indigenous Australians

In 2017–18, there were more than 6,800 assault hospitalisations involving Aboriginal and Torres Strait Islander people. Of the hospitalisations where the perpetrator was

specified, 77% (3,400) related to family violence—the perpetrator was identified as a spouse or domestic partner in 48% (2,100) of hospitalisations, and another family member in 29% (1,300) of hospitalisations.

In 2017–18, Indigenous females aged 15 and over were 34 times as likely to be hospitalised for family violence-related assault as other females (685 per 100,000 versus 19.9 per 100,000). Indigenous males were 32 times as likely to be hospitalised for family violence as other males (247 per 100,000 versus 7.8 per 100,000).

Where do I go for more information?

For more information on health impacts of family, domestic and sexual violence, see:

- Family, domestic and sexual violence in Australia: continuing the national story 2019
- Council of Australian Governments National Plan to Reduce Violence against Women and their Children 2010–2022

Visit Domestic violence for more on this topic.

If you are experiencing family or domestic violence or know someone who is, please call **1800 RESPECT (1800 737 732)** or visit the **1800RESPECT website.**

References

ABS (Australian Bureau of Statistics) 2017. Personal safety, Australia, 2016. ABS cat. no. 4906.0. Canberra: ABS.

ABS 2019. Recorded crime—victims, Australia, 2018. ABS cat. no. 4510.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019. Australian Burden of Disease Study: impact and causes of illness and death in Australia, 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

ANROWS (Australia's National Research Organisation for Women's Safety) 2018. Research summary: the impacts of domestic and family violence on children. Sydney: ANROWS.

Ayre J, Lum On M, Webster K & Moon L 2016. Examination of the burden of disease of intimate partner violence against women: final report, 2011. Sydney: Australian National Research Organisation for Women's Safety.

Bricknell S 2020a. Homicide in Australia 2016–17. Statistical Report no. 22. Canberra: Australian Institute of Criminology.

Bricknell S 2020b. Homicide in Australia 2017–18. Statistical Report no. 23. Canberra: Australian Institute of Criminology.

Coles J, Lee A, Taft A, Mazza D & Loxton D 2018. Childhood sexual abuse and its association with adult physical and mental health: results from a national cohort of young Australian women. Journal of Interpersonal Violence 30(11):1929–44.

COAG (Council of Australian Governments) Women's Safety Council 2020. Meeting of the COAG Women's Safety Council Communique 30 March and 2 April 2020. Canberra: Commonwealth of Australia. Viewed 27 May 2020.

GBD 2016 Risk Factors Collaborators 2017. Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet 390:1345–422.

Kaspiew R, Carson R, Dow B, Qu L, Hand K, Roopani D, Gahan L & O'Keeffe D 2019. Elder Abuse National Research—Strengthening the Evidence Base: research definition background paper. Melbourne: Australian Institute of Family Studies.

Loxton D, Townsend N, Dolja-Gore X, Forder P & Coles J 2018. Adverse childhood experiences and health-care costs in adult life. Journal of Child Sexual Abuse 4:1–15.

National Cabinet 2020. National Cabinet Statement. Media statement by Prime Minister 29 March 2020. Canberra.

Peterman A, Potts A, O'Donnell M, Thompson K, Shah N, Oertelt-Prigione S & van Gelder N 2020. Pandemics and violence against women and children. Center for Global Development Working Paper (in press). Viewed 6 May 2020.

van Gelder N, Peterman A, Potts A, O'Donnell M, Thompson K, Shah N & Oertelt-Prigione S 2020. COVID-19: Reducing the risk of infection might increase the risk of intimate partner violence. EClinicalMedicine 21. Viewed 6 May 2020.

Health of people experiencing homelessness

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/health-of-people-experiencing-homelessness

People experiencing homelessness and those at risk of homelessness are among Australia's most socially and economically disadvantaged (see Glossary). Homelessness can result from many factors, such as whether a person is working, experience of family and domestic violence, ill health (including mental health) and disability, trauma, and substance misuse (Fitzpatrick et al. 2013).

Homelessness can expose people to violence and victimisation, result in long-term unemployment, and lead to the development of chronic ill health. Some health problems can cause a person to become homeless. For example, poor physical or mental health can reduce a person's ability to find employment or earn an adequate income. Alternatively, some health problems are a consequence of homelessness, including depression, poor nutrition, poor dental health, substance abuse and mental health problems. Recent studies have also found that people experiencing homelessness also experience significantly higher rates of death, disability and chronic illness than the general population (Australian Human Rights Commission 2008).

Profile of people experiencing homelessness

On Census night in 2016, more than 116,000 people enumerated in the Census were homeless, up from 102,000 in 2011. Of these, 58% were male, 58% were aged under 35, and 20% identified as Aboriginal and Torres Strait Islander Australians (ABS 2018). Almost half (44%, or 51,100) were living in severely crowded dwellings, more than 21,200 (18%) were living in supported accommodation for the homeless, and 8,200 (7.0%) were sleeping rough. The rate of homelessness has fluctuated over time—from 51 per 10,000 population in 2001 to a low of 45 in 2006, increasing to 48 in 2011 and 50 in 2016 (ABS 2018).

The General Social Survey provides additional information on people experiencing homelessness in Australia. In 2014, an estimated 2.5 million people aged 15 and over had experienced homelessness at some point in their lives; 1.4 million of these had experienced at least 1 episode of homelessness in the previous 10 years, and 351,000 had experienced homelessness in the previous 12 months (ABS 2015a).

Of those who had experienced homelessness in the previous 10 years:

- 1 in 7 (14% or an estimated 198,000 people) reported the tight housing market/rental market as the reason for their most recent experience of homelessness
- 13% (an estimated 190,000 people) reported financial problems as their reason for experiencing homelessness.

Information is also available from government-funded specialist homelessness services (SHS) across Australia that provide services supporting people who are experiencing homelessness or who are at imminent risk of homelessness. In 2018–19, around 290,000 clients received assistance from SHS, with around 112,000 clients homeless when they first began support (AIHW 2019).

For further information about the profile of people experiencing homelessness and the support provided by specialist homelessness services, see Homelessness and homelessness services.

Health impact of homelessness

While the causes of homelessness vary, there is a growing amount of research on the impact of insecure housing on health, and the associated costs to the health system (Davies & Wood 2018; Zaretzky & Flatau 2013). There are various forms of homelessness, including rough sleeping (the most visible form of homelessness), couch surfing, short-term or temporary accommodation, and severe overcrowding.

Meeting basic physical needs such as food, water and a place to sleep can be the most important day-to-day priority for people experiencing homelessness, especially those rough sleeping, and subsequently health needs are often not considered until an emergency arises (Wise & Phillips 2013). While rough sleeping is the least common form of homelessness in Australia (ABS 2018), the longer-term impacts of rough sleeping on health are typically more profound due to issues such as poor nutrition, living in harsh environments and high rates of injury (Fazel et al. 2014).

Severe overcrowding is a less obvious, but most common, form of homelessness in Australia, and is associated with different health impacts. For example, severe overcrowding places stress on the infrastructure of the dwelling, such as food preparation areas, bathrooms, laundry facilities and sewerage systems. It may lead to more rapid transmission of infectious disease and induce psychological stress (AIHW 2014).

Regardless of the form of homelessness, international research on the gap in life expectancy consistently reveals large differences among those who are experiencing homelessness compared to those who aren't—more than 30 years in the United Kingdom and the United States (Maness & Khan 2014; Perry & Craig 2015), and more than 10 years for people in marginal housing in Canada (Hwang et al. 2009).

More recent research has shown that much of this gap is due to conditions which could be effectively treated with appropriate health care (Aldridge et al. 2019). A study from Scotland found that interactions with health services increased in the years prior to

becoming homeless, with a peak in interactions around the time of the first assessment as homeless—particularly for services related to mental health or drug and alcohol misuse (Waugh et al. 2018). The authors submit that the pattern of health service use suggests that health services could play a role in preventing homelessness by identifying risk factors, and early intervention.

Self-assessed health

In 2014, around 1 in 4 (26%) people in Australia who had ever experienced homelessness assessed their health as fair or poor, compared with 14% of those who had not experienced homelessness (ABS 2015a). (Note that the data source is limited to people who had experienced homelessness but who were living in private dwellings at the time of the survey.)

In general, a higher proportion of people who reported at least 1 experience of homelessness had a health condition or disability compared with those who had never had an experience of homelessness (Figure 1). People who had experienced homelessness were more likely to report having a mental health condition or a long-term health condition, with depression, back pain or back problems, anxiety and asthma the most commonly reported long-term conditions.

Figure 1: Self-assessed health status, by experience of homelessness, 2014
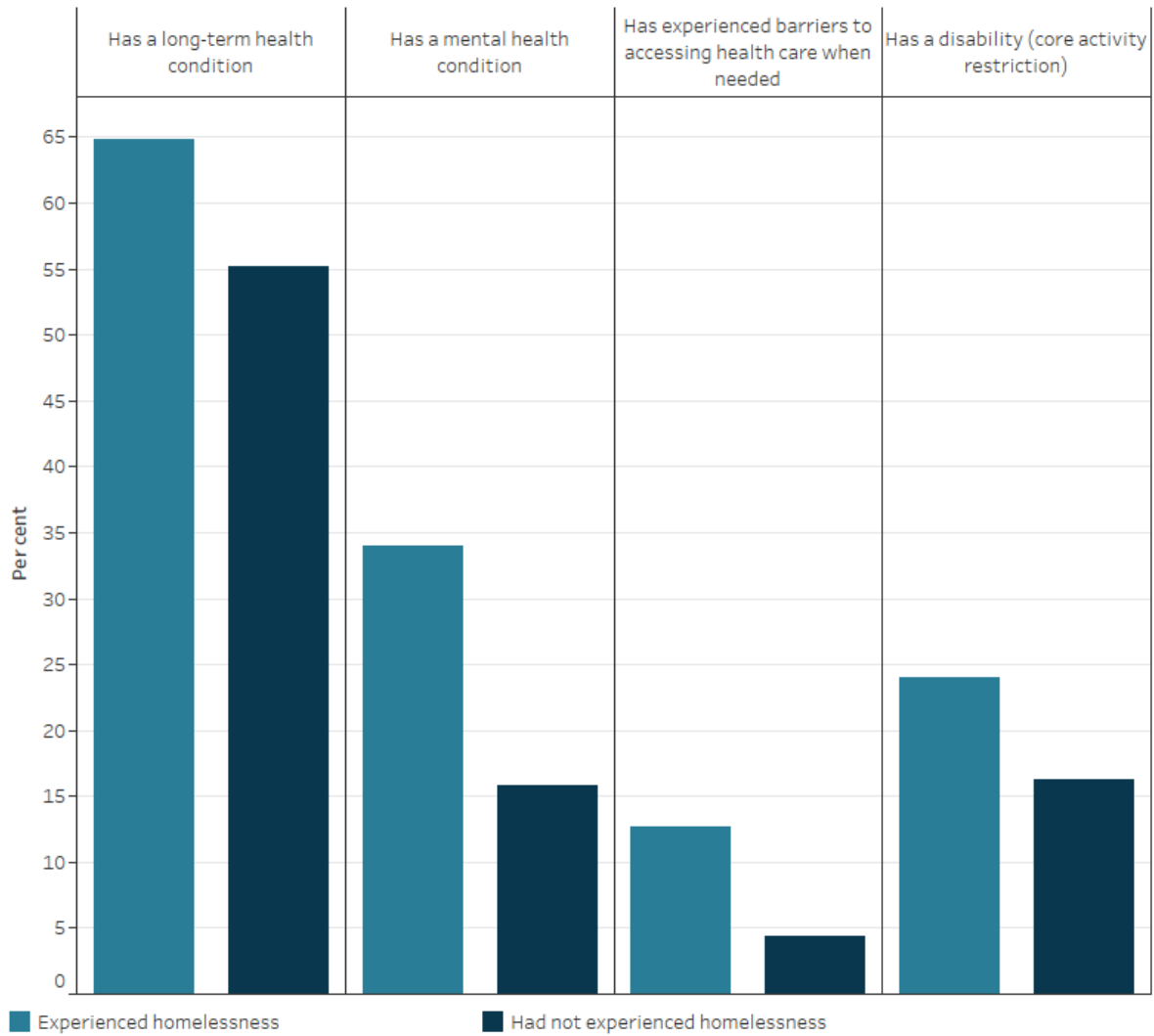
Source: AIHW analysis of ABS General Social Survey, June 2014, TableBuilder.
http://www.aihw.gov.au

Specialist Homelessness Services clients – health services

- In 2018–19, around 33,000 clients of SHS who were homeless when they first presented to an SHS agency for assistance identified health-related reasons for seeking support, with around 1 in 10 (11%) of these identifying medical issues as a reason for seeking assistance. Some people had more than 1 health-related reason for seeking support (Figure 2):23,800 clients identified mental health issues

- 11,700 clients identified medical issues

- 9,700 clients identified problematic drug or substance use

- 4,500 clients identified problematic alcohol use.

Figure 2: Number of SHS clients who were homeless at first presentation, by sex and health-related reasons for seeking assistance, 2018–19

SHS agencies provide various services to clients, from accommodation to more specialised services such as health or medical services. When an SHS agency is unable to provide specialised services, clients can be referred to another agency, with health-related services among the most commonly referred service types.

In 2018–19, SHS clients who were homeless at first presentation needed a range of health-related services—more than 14,300 clients needed health/medical services and 13,000 needed mental health services (Table 1). Note that individual clients may have more than 1 need and SHS data does not cover whether referred clients eventually received the health care needed.

Table 1: Number of clients who were homeless at first presentation, by health-related service need, 2018–19

	Number of clients	Provided as percentage of need identified	Referred only as percentage of need identified	Not provided or referred as percentage of need identified[a]
Health/medical services	14,307	56.8	20.6	22.6
Mental health services	12,997	44.4	21.9	33.7
Drug/alcohol counselling	5,673	43.9	20.1	36.0

(a)   Includes clients who refuse a service.

Source: Specialist Homelessness Services Collection 2018–19, unpublished.

Barriers to health care

While the impact of homelessness on health is known to be substantial, an unstable housing situation also presents challenges for the delivery of effective medical care, including barriers to referrals and follow-up care (Davies & Wood 2018).

In 2014, people who had experienced homelessness at least once in the previous 10 years were more likely to report experiencing a barrier to accessing health care when needed (13% of those who had experienced homelessness compared with 4.4% of those who had not experienced homelessness) (ABS 2015a). Among those who were unable to obtain health care when needed, 2 in 5 (40%) identified cost of service as the main barrier to access, followed by long waiting times or a lack of available appointments (ABS 2015a).

Illness and poor health can itself be a barrier to receiving health care. For example, mental illness can influence both attending appointments and the effectiveness of health care provided (Davies & Wood 2018). Feeling stereotyped or judged can also have an impact.

Physical barriers pose further challenges. For example, being able to afford public transport to attend appointments, having no mailing address or phone to receive appointment reminders, and being able to keep medications secure are difficulties faced by people in transient housing such as rough sleeping, couch surfing or short-term accommodation.

Where do I go for more information?

For more information on the health of people experiencing homelessness, see:

- [Specialist homelessness services annual report 2018–19](#)
- [Housing data dashboard](#)
- Australian Bureau of Statistics (ABS) [Census of Population and Housing: estimating homelessness, 2016](#)
- ABS [Information Paper—a statistical definition of homelessness, 2012](#)

See [Homelessness services](#) for more on this topic.

References

ABS (Australian Bureau of Statistics) 2015a. [General Social Survey: summary results, Australia, 2014](#). ABS cat no. 4159.0. Canberra: ABS.

ABS 2015b. [Microdata: General Social Survey, Australia, 2014, TableBuilder](#). ABS cat. no. 4159.0.30.004. Canberra: ABS. Findings based on AIHW analysis of ABS TableBuilder data.

ABS 2018. [Census of Population and Housing: estimating homelessness, 2016](#). ABS cat. no. 2049.0. Canberra: ABS.

Australian Human Rights Commission 2008. [Homelessness is a human rights issue](#). January 2008.

AIHW (Australian Institute of Health and Welfare) 2014. [Housing circumstances of Indigenous households: tenure and overcrowding](#). Cat. no. IHW 132. Canberra: AIHW.

AIHW 2019. [Specialist Homelessness Services annual report 2018–19](#). Cat. no. HOU 318. Canberra: AIHW.

Aldridge RW, Menezes D, Lewer D, Comes M, Evans H, Blackburn RM et al. 2019. Causes of death among homeless people: a population-based cross-sectional study of linked hospitalisation and mortality data in England. Wellcome Open Research 2019 4:49.

Davies A & Wood L 2018. Homeless health care: meeting the challenges of providing primary care. The Medical Journal of Australia 209(5):230–234.

Fazel S, Geddes J & Kushel M 2014. The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. The Lancet 25; 384 (9953):1529–1540.

Fitzpatrick S, Bramley G & Johnsen S 2013. [Pathways into multiple exclusion homelessness in seven UK cities](#). Urban Studies 50:1.

Hwang SW, Wilkins R, Tjepkema M, O'Campo PJ, Dunn JR 2009. Mortality among residents of shelters, rooming houses, and hotels in Canada: 11 year follow-up study. BMJ 2009; 339:b4036.

Maness DL & Khan M 2014. Care of the homeless: an overview. American Family Physician 89: 634–640.

Perry J & Craig TKJ 2015. Homelessness and mental health. Trends in Urology & Men's Health 6(2):19–21.

Waugh A, Clarke A, Knowles J & Rowley D 2018. Health and homelessness in Scotland. Edinburgh: The Scottish Government.

Wise C & Phillips K 2013. Hearing the silent voices: narratives of health care and homelessness. Issues in Mental Health Nursing 34(5):359−67.

Zaretzky K & Flatau P 2013. The cost of homelessness and the net benefit of homeless programs: a national study. Australian Housing and Urban Research Institute. Viewed January 2020, https://www.ahuri.edu.au/research/final-reports/218.

How healthy are Australians?

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/how-healthy-are-australians

Australia performs well on many health measures. Australians are living longer—with more of those years lived in good health—and generally rate their health well. Australia also performs well internationally on a number of health measures—see International comparisons of health data—however, these country-level findings can obscure issues affecting specific population groups. For example, Aboriginal and Torres Strait Islander people generally experience poorer health than other Australians. See Indigenous health and wellbeing for more information.

Key health measures help inform us about how healthy all Australians are. See What is health? for a description of health measures presentd here. Health measures can be grouped into an indicator framework to provide an overall view of the health of, for instance, particular groups or for a nation. Australia's health performance framework is an interactive data visualisation tool that measures Australia's health and health care performance.

Life expectancy

Life expectancy at birth in Australia is continuing to rise (Figure 1). In 2018 life expectancy at birth was 80.7 years for males and 84.9 years for females (ABS 2019b). Australian males had the ninth highest and Australian females had the seventh highest life expectancy at birth among the 36 OECD (Organisation for Economic Co-operation and Development) countries in 2018 (OECD 2019b).

Figure 1: Life expectancy at birth, by sex, 1886–2018

Year (slide to change range)
1885 to 2017
and Null values

Males ▪ Females ▪
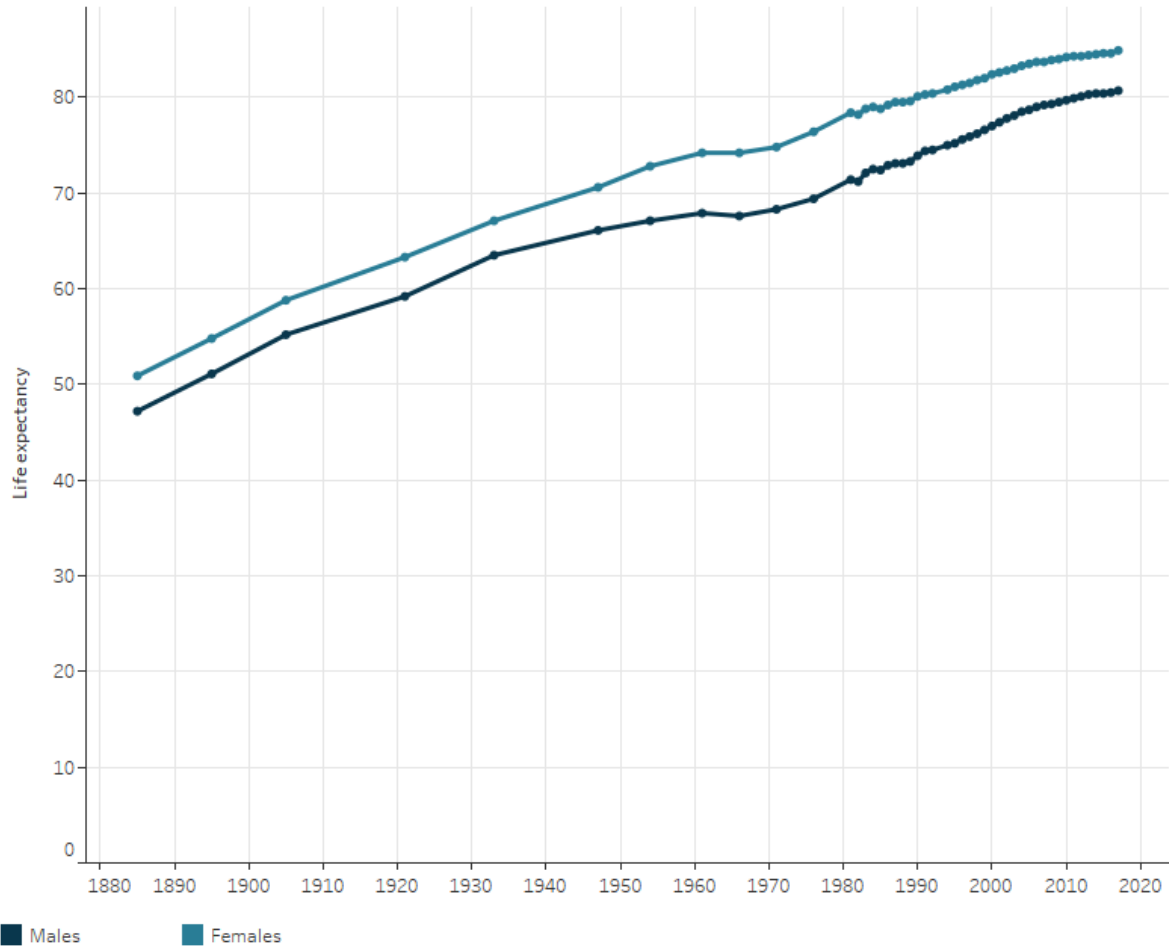
Source: ABS 2019a, 2019b.
http://www.aihw.gov.au/

Life expectancy measures how long, on average, a person is expected to live based on current age and sex-specific death rates. Life expectancy changes over the course of a person's life because as they survive the periods of birth, childhood and adolescence, their chance of reaching older age increases. Men aged 65 in 2018 had 19.8 expected years of life remaining and women aged 65 in 2018 had 22.6 expected years (ABS 2019b). Among the 36 OECD countries in 2018, Australian men ranked third and Australian women ranked seventh for life expectancy at age 65 (OECD 2019a).

Health-adjusted life expectancy

While Australians are living longer, it is important to understand whether people are spending more years in good health or more years living with illness. The measure of health-adjusted life expectancy (HALE) can be used to understand this. HALE estimates, on average, how many years a person will live in full health.

As life expectancy has increased, so too has HALE—males born in 2015 were expected to have 2.0 more years of healthy life than males born in 2003, and females born in 2015 could expect 1.3 more years of healthy life (AIHW 2019). These gains in healthy years are comparable to the gains in life expectancy. But we are still living the same number of years in ill health in 2015 as we were in 2003—8.9 years for males and 10.2 for females (Figure 2).

Figure 2: Life expectancy at birth in full health (HALE) and ill health, by sex, 2003 and 2015
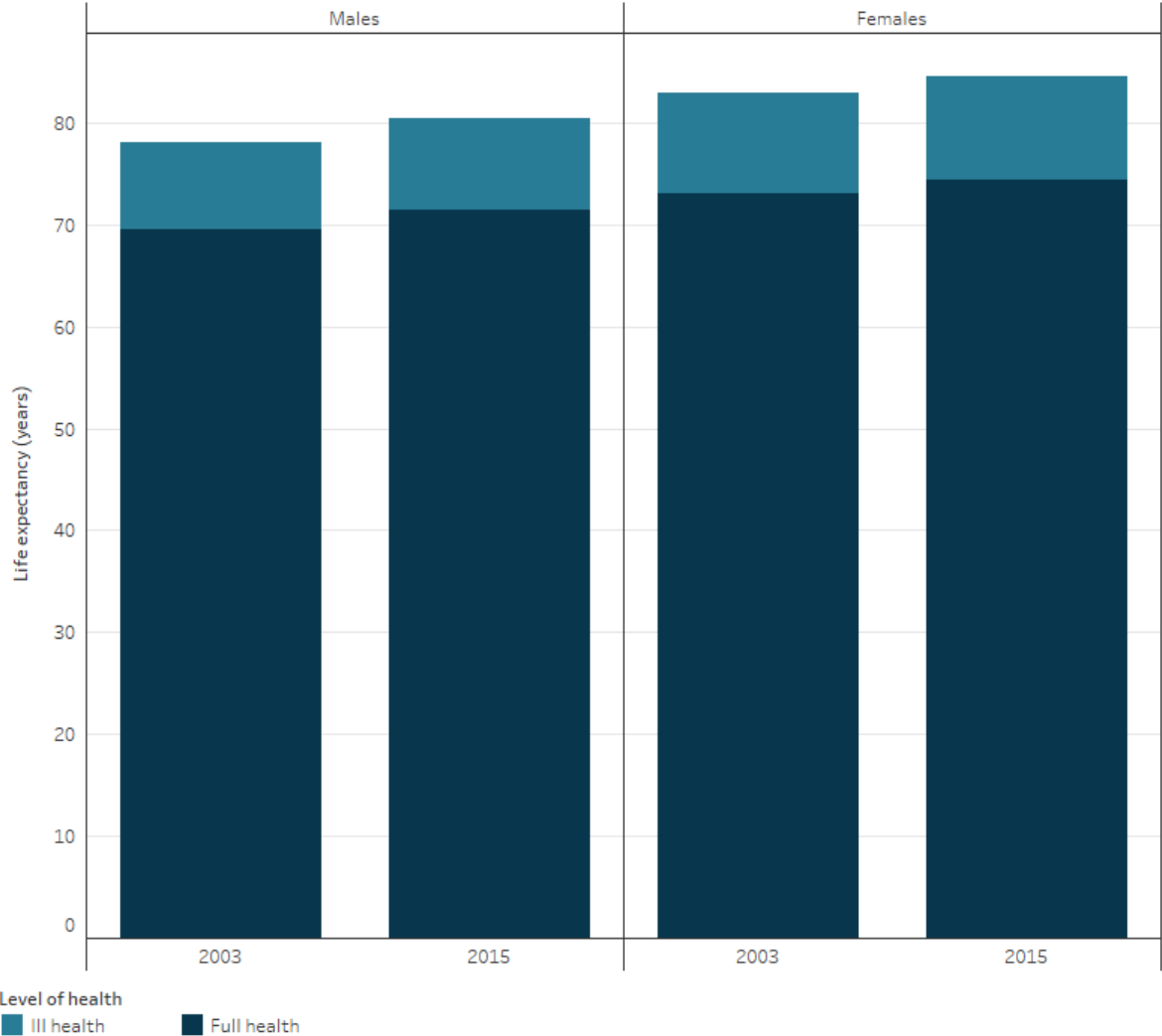
Source: AIHW 2019.
http://www.aihw.gov.au/

HALE at birth for males and females in 2015 in *Remote and very remote* areas was 5.2 and 5.8 years shorter, respectively, than for those in *Major cities* (AIHW 2019). See Rural and remote health for more information.

HALE is also unequal between socioeconomic areas—see 'Longer lives, healthier lives?' in Australia's health 2020: data insights.

Disability-adjusted life years

We can assess the current health status of the population by looking at the impact of living with illness and dying early. We call this the 'burden of disease' and express it as disability-adjusted life years (DALYs). DALYs measure years of healthy life lost, either through premature death (fatal burden) or from living with illness or injury (non-fatal burden). See Burden of disease for more information.

The Australian population has seen reductions in disease burden. Between 2003 and 2015 the rate of burden decreased by 11% from 208 DALYs per 1,000 population to 184 per 1,000 after adjusting for population increase and ageing (AIHW 2019).

However, there is an unequal distribution of disease burden across population groups. The total burden rate in the lowest socioeconomic areas was 1.5 times as high as in the highest socioeconomic areas. The rate was 1.7 times as high for fatal burden. Total disease burden would be 20% lower if all areas had the same rates of burden as the highest socioeconomic areas (Figure 3). See Health across socioeconomic groups for more information.

Figure 3: Non-fatal and fatal burden rates by socioeconomic area, 2015
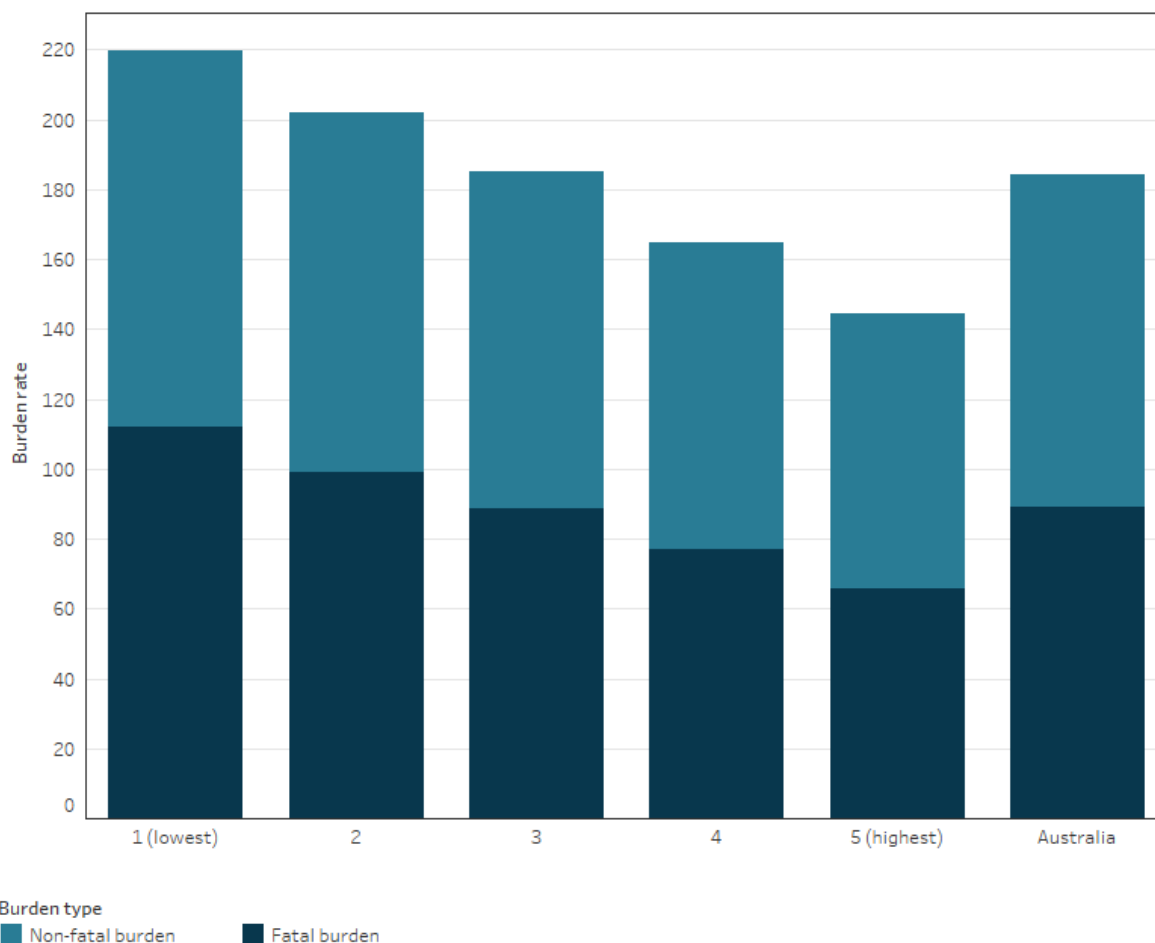
Burden type
■ Non-fatal burden   ■ Fatal burden

Notes:
1. Rates were age-standardised to the 2001 Australian Standard Population and expressed per 1,000 population.
2. Prevalence estimates and deaths with insufficient geographic detail to align to a socioeconomic area are excluded from the analysis.
3. Non-fatal burden refers to the amount of years lived in ill health or with disability, and fatal burden refers to the estimate of years of life lost due to premature death.
Source: AIHW 2019a.
http://www.aihw.gov.au/

Self-assessed health status

Based on the Australian Bureau of Statistics National Health Survey (NHS) estimates, more than half (56%) of Australians aged 15 and over self-assessed their health as 'excellent' or 'very good' in 2017–18—the same as the proportion in 2014–15 (56%). Australians self-assessed their health less positively as they aged—68% of those aged 15–24 self-assessed their health as 'excellent' or 'very good', compared with 42% of Australians aged 65 and over (Figure 4) (ABS 2018).

Figure 4: Self-assessed health status of Australians aged 15 and over, by age group, 2017–18
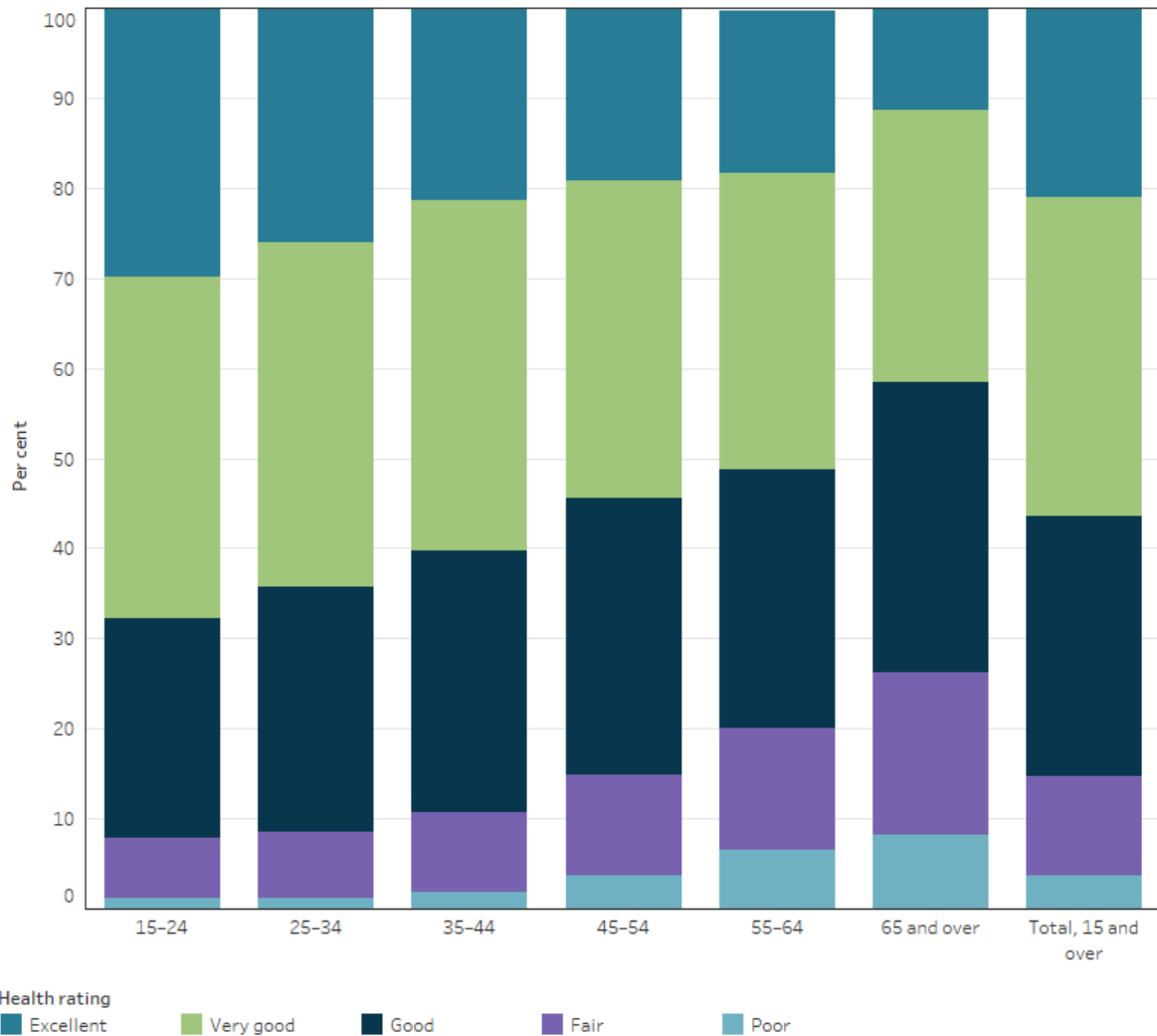
Source: ABS 2018.
http://www.aihw.gov.au/

People with disability assessed their health more poorly than people without disability. In the 2017–18 NHS, 24% of adults with disability assessed their health as 'very good or excellent', compared with 65% of adults without disability (ABS 2019c). See Health of people with disability for more information.

Mortality and morbidity

Death rates are usually used to measure mortality, while morbidity measures include incidence of illness and injury, disease prevalence and comorbidity.

In Australia, death rates at a given age have continued to decline since at least the early 1900s. See Causes of death for more information.

Chronic diseases are the leading cause of premature death, ill health and disability (see Chronic conditions and multimorbidity). For disease-specific measures of mortality and morbidity, see Health status snapshots in Australia's health snapshots.

Where do I go for more information?

For more information on the health of Australians, see:

- Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015
- ABS Life tables, states, territories and Australia, 2016−2018
- ABS National Health Survey: first results 2017–18

Visit Burden of disease and Life expectancy & deaths for more on this topic.

References

ABS (Australian Bureau of Statistics) 2018. National Health Survey: first results, 2017–18. ABS Cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019a. Australian Historical Population Statistics, 2016. ABS Cat. no. 3105.0.65.001. Canberra: ABS.

ABS 2019b. Life tables, states, territories and Australia, 2016−2018. ABS Cat. no. 3302.0.55.001. Canberra: ABS.

ABS 2019c. Microdata: National Health Survey, 2017–18, unit record file. ABS Cat. no. 4324.0.55.001. Canberra: ABS. Finding based on microdata analysis.

AIHW (Australian Institute of Health and Welfare) 2019. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease Study series no. 4. BOD 22. Canberra: AIHW.

OECD (Organisation for Economic Co-operation and Development) 2019b. Life expectancy at birth. Geneva: OECD.

OECD 2019a. Life expectancy at 65. Geneva: OECD.

Infectious and communicable diseases

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/infectious-and-communicable-diseases

Infectious diseases (also known as communicable diseases) are caused by infectious agents and can be passed from one person or animal to another. Transmission can occur directly (through contact with bodily discharge), indirectly (for example, by sharing a drinking glass) or by means of vectors (such as mosquitoes). They are caused by bacteria, viruses, parasites or fungi or their toxic products. Examples of these communicable diseases include coronavirus, malaria, influenza and chickenpox.

Throughout the 1900s, improved sanitation and new prevention and treatment options drastically reduced the burden of communicable diseases. Immunisation and vaccination is a key preventive measure against communicable diseases and has been highly successful at reducing infections from significant diseases such as polio and tetanus.

Although the burden of infectious diseases in Australia is relatively small (2.0% of total burden) (AIHW 2019), most people will experience an infection from a communicable disease during their lifetime—for example, a common cold or a stomach bug. Many infectious diseases have the potential to cause significant illness and outbreaks. Some have developed resistance to antimicrobial agents, increasing the risk of more lengthy and complex treatment and poor outcomes (ACSQHC 2017).

Outbreak: COVID-19 pandemic (novel coronavirus—SARS-CoV-2)

SARS-CoV-2 is a coronavirus which was first observed in Wuhan City, China, in December 2019 and causes the disease known as COVID-19. It has animal origins (Huang et al. 2020) and infections in humans have not been observed previously. The World Health

Organization declared COVID-19 a pandemic (that is, the worldwide spread of a new infectious disease) on 11 March 2020.

Early symptoms of COVID-19 include fever, fatigue and respiratory symptoms including coughing, sore throat and shortness of breath. The disease ranges from mild illness to serious illness possibly causing death. SARS-CoV-2 is related to other coronaviruses, such as those causing severe acute respiratory syndrome (SARS) and middle east respiratory syndrome (MERS), which have previously caused serious outbreaks.

The Commonwealth Department of Health's website provides updated information about the evolving situation in Australia (see Department of Health COVID–19 current situation).

While the full impact of COVID-19 on the health of Australians will not be known for some time, the article 'Four months in: what we know about the new coronavirus disease in Australia' in *Australia's health 2020: data insights* takes a look at the early days of the disease in Australia. It compares Australia with other countries and compares COVID-19 with other diseases in Australia.

Often, the illness caused by an infectious disease is mild and short-lived and medical care is not required or sought. As a result, the prevalence of many communicable diseases is difficult to measure. To assist in understanding their impact, certain infectious diseases are notifiable conditions. When a diagnosis is made of one of these diseases, a report is made to health authorities. Notification means that trends in the number and characteristics of cases can be monitored over time from a consistent and comparable data set. Outbreaks can be detected in a timely way so that interventions can be implemented to prevent or reduce transmission. Monitoring, analysis and reporting on notifiable diseases occurs nationally via the National Notifiable Disease Surveillance System (NNDSS).

Notifiable diseases

Notifiable diseases are a subset of communicable diseases. Legislation requires that each detected case is reported to state and territory health departments. Notifiable diseases include bloodborne diseases, gastrointestinal diseases, sexually transmissible infections, vaccine-preventable diseases, vectorborne diseases, zoonoses, listed human diseases, and other bacterial diseases (see Department of Health list of Australian notifiable diseases).

This page highlights the impact of infectious diseases in Australia, both notifiable and non-notifiable.

How common are notifiable infectious diseases?

More than 593,000 cases of notifiable diseases were reported to the NNDSS in 2019. Four infectious diseases accounted for 82% of these notifications to Australian health authorities in 2019:

- influenza—more than 313,000 notifications

- chlamydia—almost 103,000 notifications
- campylobacter (a gastrointestinal infection)—almost 36,000 notifications
- gonorrhoea—more than 34,000 notifications.

Figure 1: Number of notifiable communicable diseases, Australia, 2009 to 2019

Select a disease category:
Bloodborne diseases

Select a disease/s:
All

Disease
- Hepatitis B (newly acquired)
- Hepatitis B (unspecified)
- Hepatitis C (newly acquired)
- Hepatitis C (unspecified)
- Hepatitis D
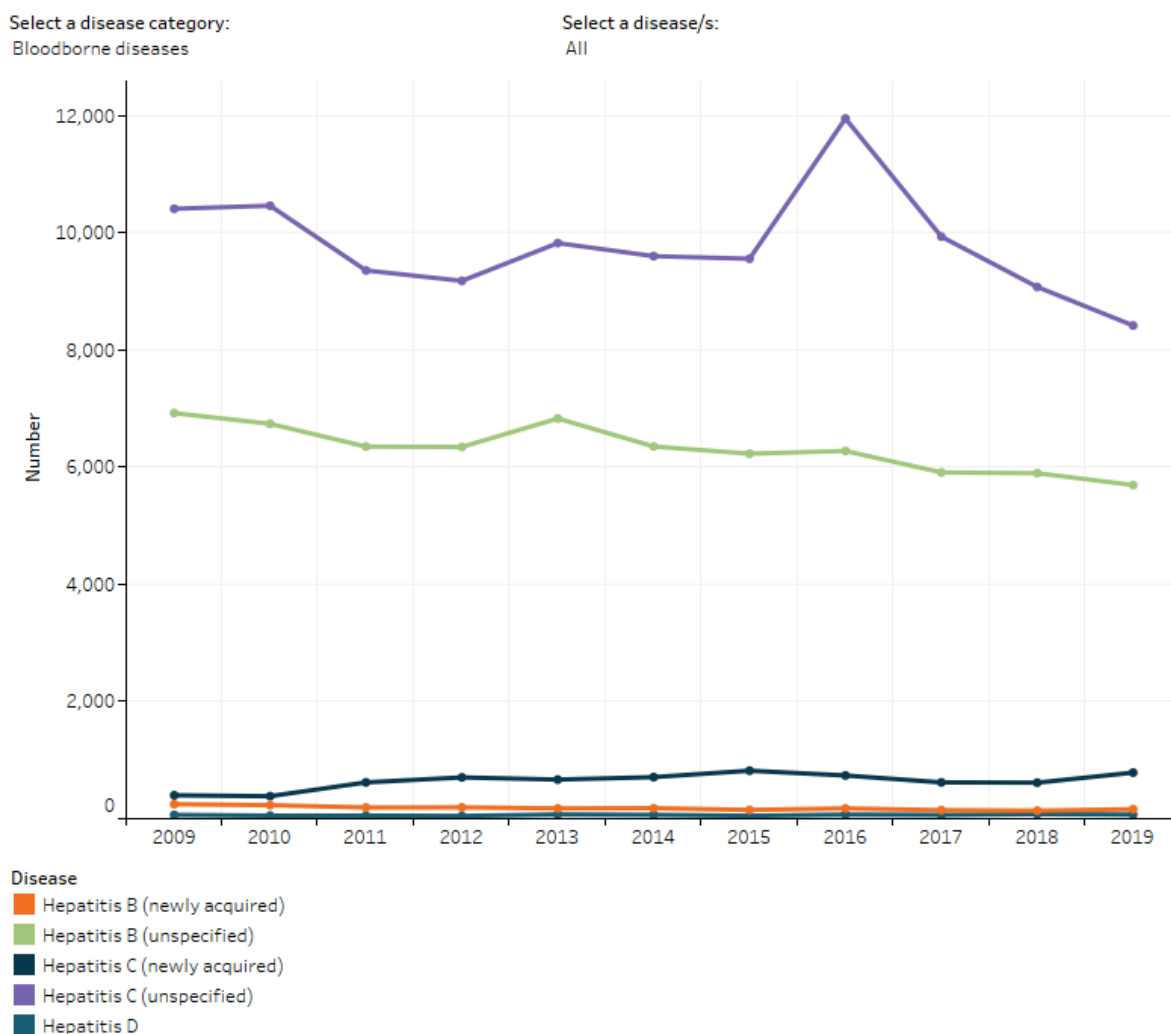
Source: NNDSS.
www.health.gov.au

Vaccine-preventable diseases

One key group among notifiable diseases is vaccine-preventable diseases. Many of these, including rubella (22 notifications in 2019), diphtheria (7 notifications in 2019) and tetanus (3 notifications in 2019) are rare in Australia, as a result of Australia's high immunisation rates (see Immunisation and vaccination diseases such as pertussis (whooping cough) and measles, the number of notifications can increase during outbreak periods because people with low or no immunity can be infected.

Influenza, usually preventable by vaccination, accounts for the most notifications in Australia. Overall influenza notifications have generally increased over time but annual totals have fluctuated from year to year. There were more than 313,000 notifications in 2019, a substantial increase from 2018 (nearly 59,000 notifications). The number of influenza notifications changes depending on the particular type of influenza circulating in the population, and on factors such as the amount of laboratory testing of unwell people, or the types of tests used. The extent of under-notification and trends in notifications of influenza can change from year to year. Other surveillance systems are also used to determine trends in influenza to help understand the relative impact of the illness on society in Australia (Department of Health, 2019a).

The number of notifications of rotavirus, shingles and chickenpox have also risen recently. It is difficult to determine how much of the increase is due to improved diagnosis and notification and how much reflects a real increase in the number of infected people.

Sexually transmitted infections

Varying prevention and control measures are used by public health authorities depending on the type of infection or disease. Monitoring of the population groups affected by sexually transmitted infections (STIs) allows targeted prevention programs to be designed. The number of notified STIs has increased over the last decade, with chlamydia being the most commonly notified (more than 102,000 notifications in 2019). Gonorrhoea notifications have increased, but infections continue to affect the same groups: Aboriginal and Torres Strait Islander males and females in *Remote* or *Very Remote* areas, and non-Indigenous males in metropolitan settings.

Similarly, the number of notifications of infectious syphilis have increased in the last decade. New syphilis cases are diagnosed mainly in men who have sex with men in urban areas, or young Indigenous Australians in *Remote* or *Very Remote* regions. Part of the increase in numbers can be attributed to an ongoing outbreak among Indigenous Australians in Northern Australia, accounting for just over 3,000 notifications since January 2011 (Department of Health 2019b; Kirby Institute 2017).

How common are non-notifiable infectious diseases?

Non-notifiable communicable diseases are not routinely monitored, though their impact can be tracked through assessing presentations to hospital, or through mortality data. These data sources capture the small proportion of people who have severe illness, causing hospitalisation or resulting in death.

Treatment and management

Hospitalisations

In 2017–18, 89% of the nearly 447,000 hospitalisations for communicable diseases were for non-notifiable diseases. From 2000–01 to 2017–18, the hospitalisation rate for non-notifiable communicable diseases peaked at 15.3 per 1,000 in 2016–17 (nearly 400,000 hospital separations). In 2017–18, the most commonly diagnosed infectious cause of hospitalisation was lower respiratory tract infections (such as pneumonia and bronchitis), accounting for almost 145,000 hospitalisations.

Influenza was the most common cause of hospitalisation for all notifiable diseases in 2017–18, with 62% of nearly 50,000 hospitalisations attributed to it. The hospitalisation rate per 1,000 population for notifiable communicable diseases has ranged between 0.8 in 2006–07 and 1.8 in 2017–18 (Figure 2).

See Hospital care.

Figure 2: Age-standardised hospitalisations rates for notifiable and non-notifiable communicable diseases, 2000–01 to 2017–18
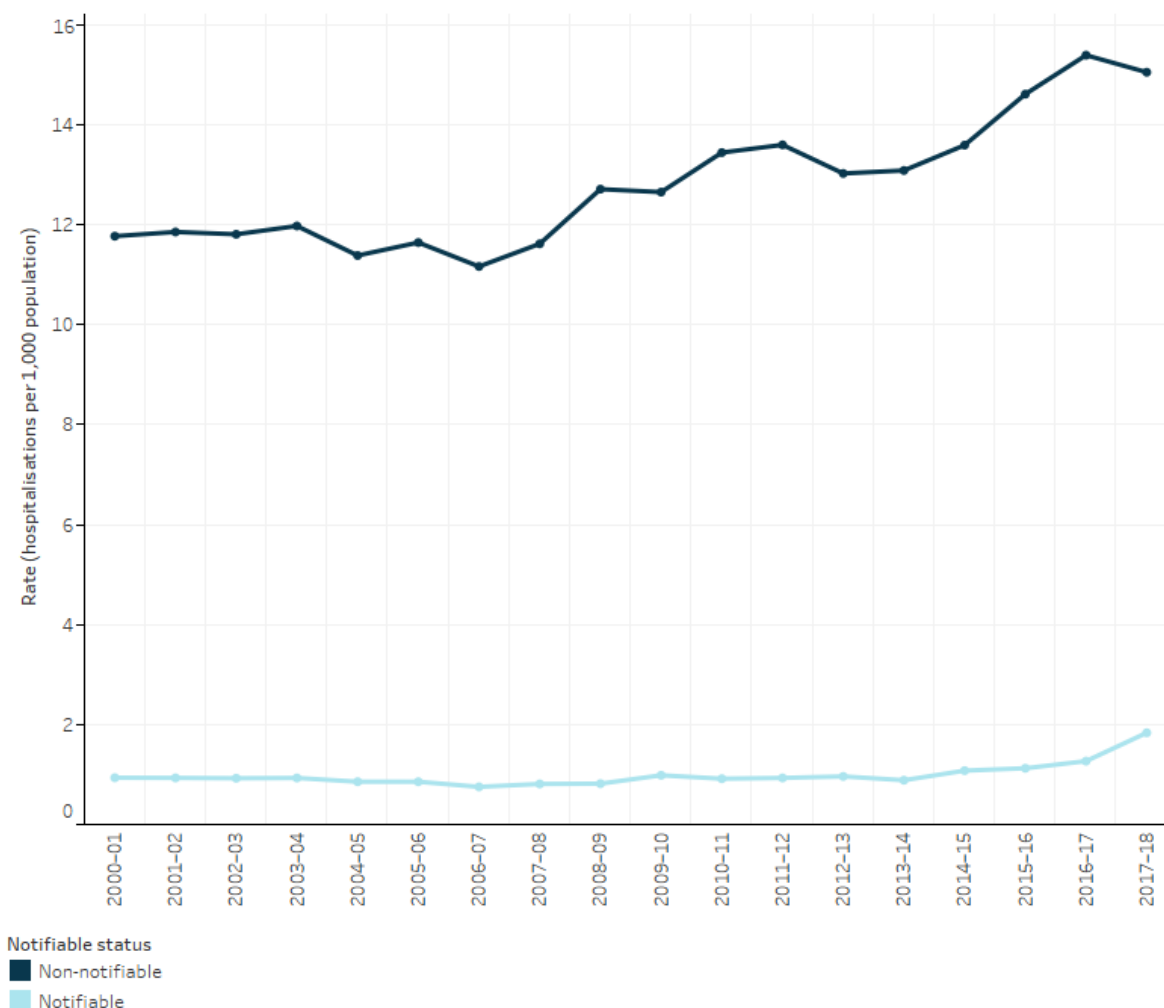
Source: National Hospital Morbidity Database.
http://www.aihw.gov.au

Impact

Deaths

In 2018, almost 6,000 deaths in Australia were attributed to communicable diseases. Between the years 2000 and 2018 around 99,000 deaths were attributed to communicable diseases. The vast majority (89%) of the deaths caused by infections were attributed to non-notifiable diseases, the most common of which were lower respiratory infections caused by various bacteria and viruses (Figure 3). The death rate per 100,000 population due to non-notifiable communicable diseases ranged from 13 in 2009 to 24 in 2003 (Figure 4).

Figure 3: Deaths due to non-notifiable infectious and communicable diseases, Australia, 2000 to 2018

View deaths or hospitalisations:
Deaths

Select disease/s:
All

Disease
- Lower respiratory infections
- Other gastrointestinal infections
- Other meningitis and encephalitis
- Other unspecified infections
- Upper respiratory tract infections
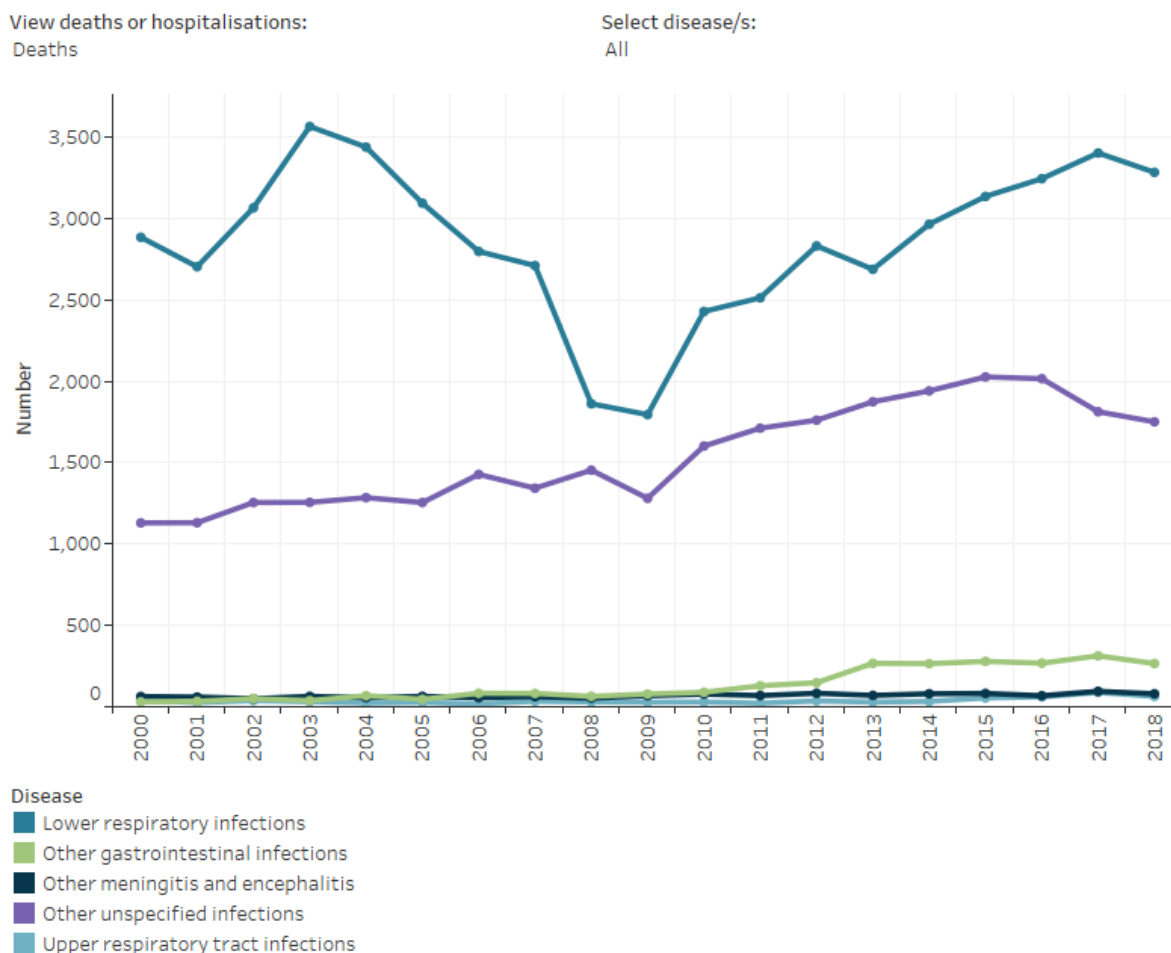
Sources: National Hospital Morbidity Database and National Mortality Database.
http://www.aihw.gov.au

Of the 10,700 deaths attributed to notifiable diseases between 2000 and 2018, the most common causes of death were influenza (more than 3,300) and chronic hepatitis C infection (almost 1,500). It is likely that the true impact of influenza is underestimated in mortality data as many people who died would not have been tested for influenza.

See Causes of death.

Figure 4: Age-standardised mortality rates for notifiable and non-notifiable communicable diseases, 2001 to 2017
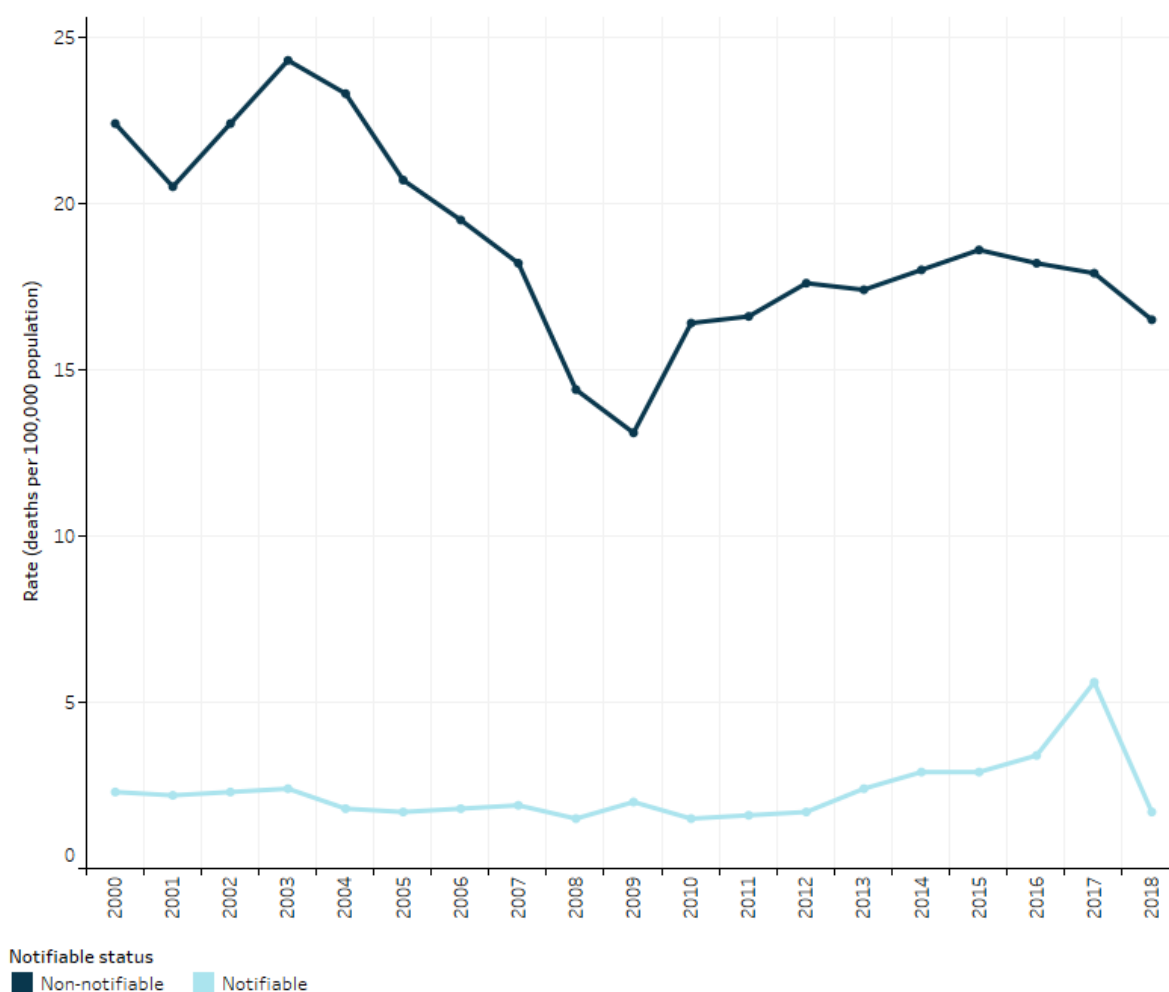
Source: National Mortality Database.
http://www.aihw.gov.au

Where do I go for more information?

For more information on infectious and communicable diseases, see:

- Vaccine-preventable diseases
- The burden of vaccine preventable diseases in Australia
- The burden of vaccine preventable diseases in Australia—summary
- Department of Health Communicable diseases
- Department of Health Infectious syphilis outbreak
- Department of Health Australian Influenza Survelliance Report and Activity Updates

References

ACSQHC (Australian Commission on Safety and Quality in Health Care) 2017. AURA 2017: Second Australian report on antimicrobial use and resistance in human health. Sydney: ACSQHC.

AIHW (Australian Institute of Health and Welfare) 2019. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

Department of Health 2017 2017 Influenza season in Australia: a summary from the National Influenza Surveillance Committee. Canberra: Department of Health. Viewed December 2017.

Department of Health 2018. National notifiable diseases surveillance system, 2018. Canberra: Department of Health. Viewed January 2018.

Department of Health 2019a. Australian influenza surveillance report, No. 12, 2019, 23 Sept-6 October. Canberra: Department of Health. Viewed December 2019.

Department of Health 2019b. Infectious syphilis outbreak. 20 Nov 2019. Viewed December 2019.

Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. 2020. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. The Lancet 2020 Feb 15; 395 (10223):497–506.

Kirby Institute 2017. National blood-borne viruses and sexually transmissible infections surveillance and monitoring report, 2017. Sydney: The Kirby Institute, UNSW Sydney.

Injury

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/injury

Most injuries, whether unintentional or intentional, are preventable (WHO 2014). Despite this, every year in Australia, thousands of people die and many more are admitted to hospital or attend hospital emergency departments because of injuries. While people with minor injuries typically recover completely, people with serious injuries, if they survive, often have lasting health problems (Gabbe et al. 2017).

Injuries can happen to anyone, but some population groups are more at risk than others, such as people who live in areas that are more remote or have a lower socioeconomic position, Aboriginal and Torres Strait Islander people, older people and males (Figures 1 and 2).

The leading causes of injury and injury deaths in Australia include unintentional falls, transport crashes and intentional self-harm and suicide (AIHW 2020a, b) (Figures 1 and 2). Other causes of injury and injury deaths include exposure to animate and inanimate mechanical forces, assault, poisoning, thermal causes, and drownings and submersions. Exposure to animate mechanical forces includes contact with animals (for example, being bitten or struck by an animal) and contact with people (for example, being hit unintentionally by another person). Exposure to inanimate mechanical forces includes contact with tools, machinery, or sharp or exploding objects. Injuries commonly have multiple causes. For example, frailty and weak bones contribute to fall-related injury in old age.

Understanding the data on injury and injury deaths is an important factor in creating effective measures—for example, appropriate legislation, policies, education and technology—to reduce the risk of injury.

Falls are the leading cause of injury and injury deaths

In 2017–18, almost 223,000 cases of hospitalised injury and more than 5,100 injury deaths were due to unintentional falls. Falls were estimated to cost the Australian health system $3.9 billion in 2015–16 (AIHW 2019a).

How common are injuries?

Hospitalised injury cases

In 2017–18, over 532,500 cases of injury resulted in admission to hospital in Australia:

- The rate of hospitalised injury was 2,148 per 100,000 population.

- The main causes of hospitalised injury were falls (42%), followed by injury due to inanimate mechanical forces (14%) and transport crashes (12%).

- The most common areas of the body injured were the head and neck (22%) and the hip and lower limb (20%). The most common types of hospitalised injury were fractures (38%) and open wounds (15%).

- Males accounted for more than half (55%) of all hospitalised injury cases. The rate of injury for males overall was 2,368 cases per 100,000 males, compared with 1,931 per 100,000 females. This difference remained when differences in age structure were accounted for (2,336 per 100,000 for males and 1,781 for females).

- For both males and females, rates of hospitalised injury were highest in people aged 65 and over. Males had higher rates of hospitalised injury than females in all age groups from 0–64, but from the age of 65, females had a higher rate, with females aged 85 and over having much higher rates than males.

- The age-standardised rate of hospitalised injury for Indigenous Australians was almost double (3,903 per 100,000) that for non-Indigenous Australians (1,991).

- The age-standardised rate of injury in *Very remote* regions (4,313 per 100,000 population) was more than double the rate in *Major cities* (1,901).

- The age-standardised rate of hospitalised injury increased with decreasing socioeconomic position—from 1,892 per 100,000 in the highest socioeconomic areas, to 2,118 in the lowest socioeconomic areas.

See Hospital care.

Figure 1: Hospitalised injury cases, 2017–18

◉ Number
○ Rate

◉ Age group
○ Cause of injury

Sex ■ Males ■ Females ■ Persons
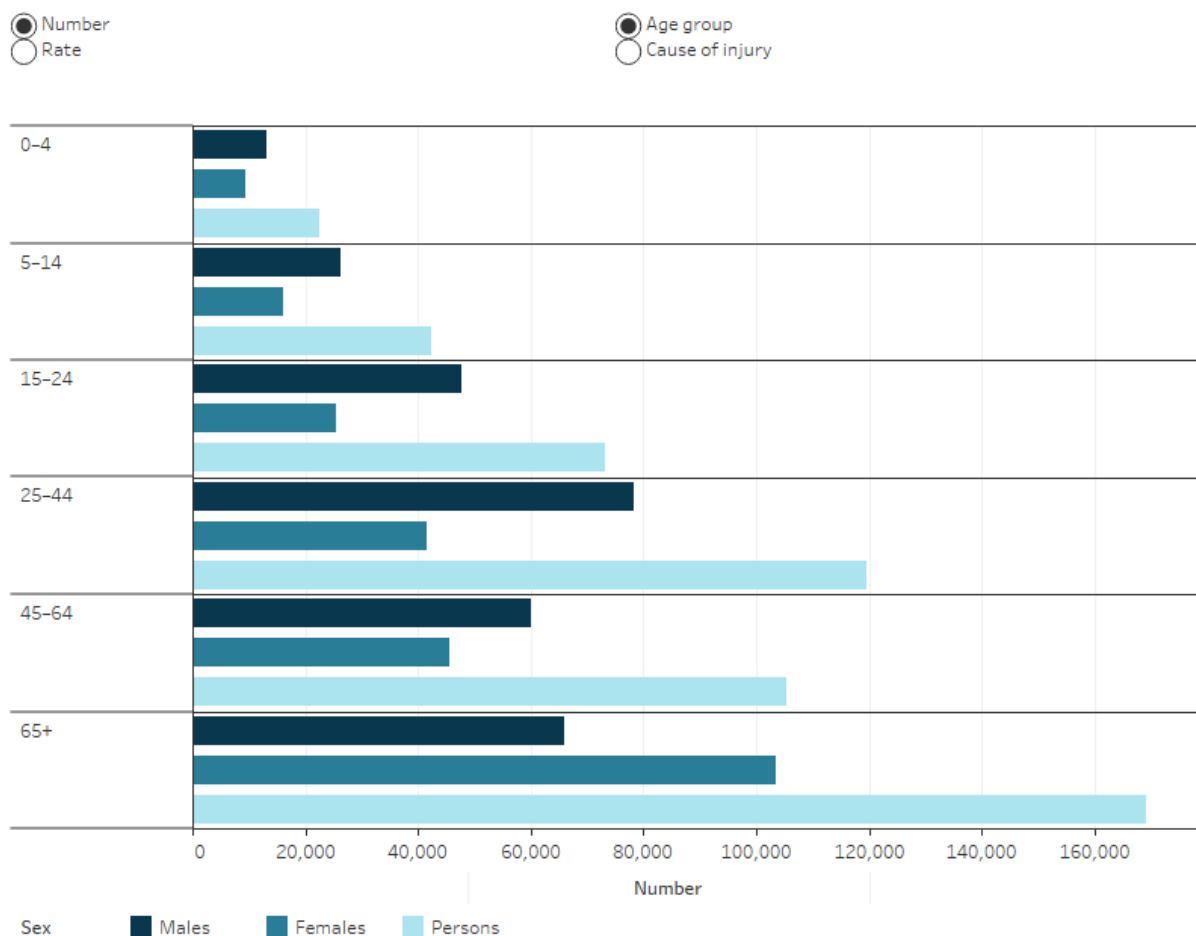
Notes:
1. 'Persons' includes cases where sex was not reported.
2. Rates by age group are crude. Rates by cause of injury are directly age-standardised to the 2001 population.
Source: AIHW National Hospital Morbidity Database.
http://www.aihw.gov.au/

Deaths due to injury

In 2017–18, injury was recorded as a cause of more than 13,000 deaths—8.1% of deaths in that year:

- The rate of injury deaths was 53 per 100,000 population.
- Just over 45% of all deaths at ages 1–44 were due to injury.
- Unintentional falls were the most common cause of injury deaths (40% of all deaths), followed by suicide (23%) and transport crashes (11%).
- For males, suicide and falls were the leading causes of injury death (29% of male injury deaths each).
- For females, falls were the leading cause of injury death (56% of female injury deaths), with 97% of female deaths due to falls involving those aged 65 and over.

- Injury death rates for males were higher than for females in every age group, especially 25–44.
- Of age groups 0–4, 5–14, 15–24, 25–44, 45–64 and 65 and over, injury death rates were lowest for children aged 5–14 and highest for people aged 65 and over.
- Indigenous Australians were almost twice as likely to die from an injury than other Australians—the age-standardised injury death rate for Indigenous Australians was 86 deaths per 100,000 population, compared with 44 per 100,000 for other Australians.
- Injury death rates rose with increasing remoteness—41 deaths per 100,000 population were recorded in *Major cities*, and 81 per 100,000 in *Very remote* areas (age-standardised rates).
- The age-standardised rate of injury death increased with decreasing socioeconomic position—the rate for people in the lowest socioeconomic areas was 1.3 times the rate for those in the highest socioeconomic areas.

See Causes of death.

Figure 2: Injury deaths, 2017–18

○ Number
○ Rate (per 100,000)

○ Age group
○ Cause of injury

Sex ■ Males ■ Females ■ Persons
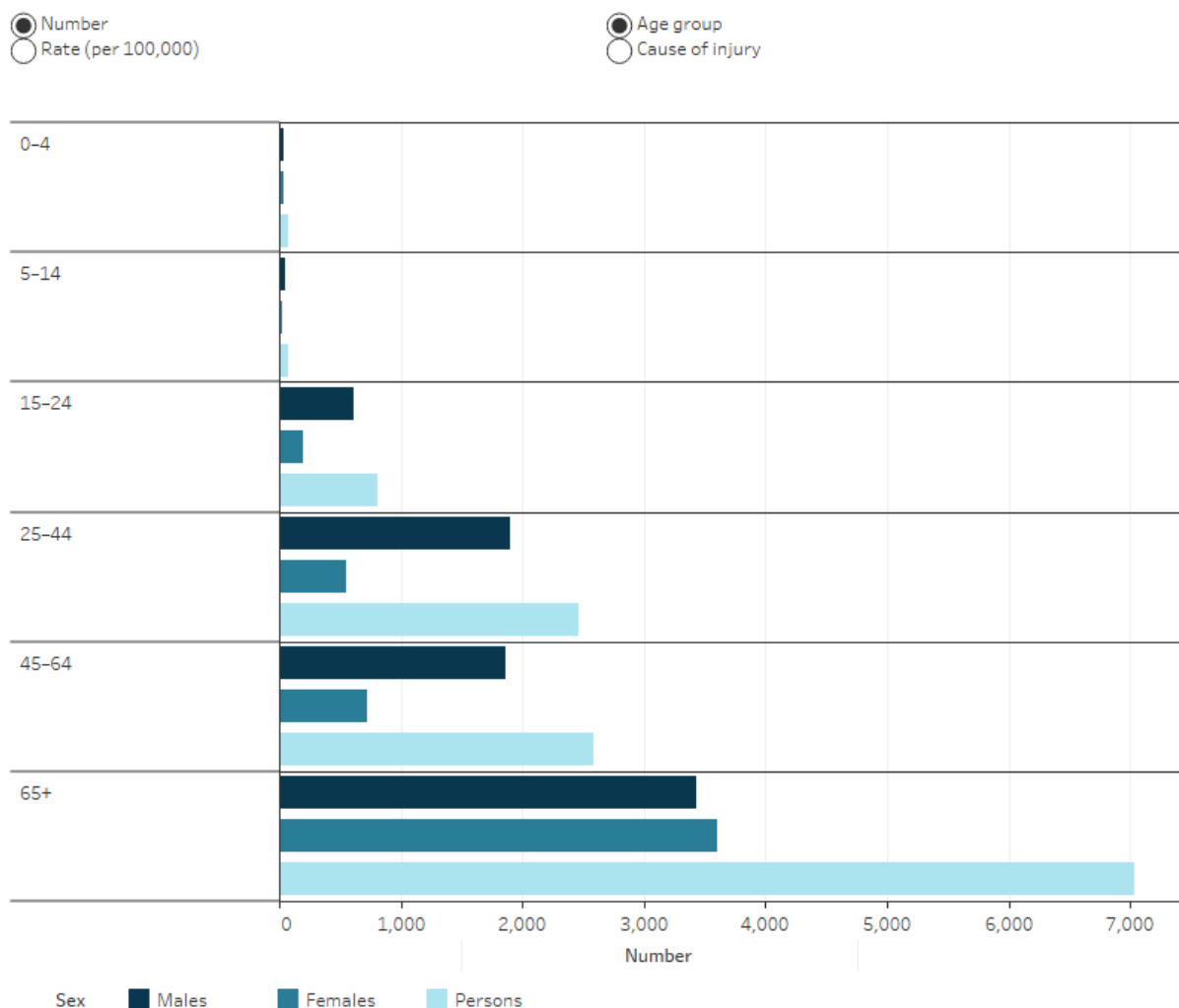
Note: Rates by age group are crude. Rates by cause of injury are directly age-standardised to the 2001 population.
Source: AIHW National Mortality Database.
http://www.aihw.gov.au/

Emergency departent presentations

One in 4 (25%, or just over 2.0 million) presentations to public hospital emergency departments in 2018–19 were due to injury (AIHW 2020c). Of these:

- more than one-quarter (26%, or 541,000) were for children aged 0–14, and a further 17% (344,000) for people aged 15–24
- about 1 in 5 (18% or 375,000 resulted in admission to hospital).

See Hospital care.

Impact

In 2015, injuries accounted for 8.5% of the burden of disease in Australia (AIHW 2019b) and 7.0% of the long-term health conditions of the more than 4.3 million Australians living with a disability (ABS 2016). Injury is one of the top 5 contributing categories to the national burden of disease, along with cancer, cardiovascular diseases, musculoskeletal conditions and mental and substance use disorders (AIHW 2019b). See Burden of disease.

In 2015–16, it was estimated that injury cost the Australian health system $8.9 billion dollars (7.6% of total health expenditure) (AIHW 2019a). See Health expenditure.

In 2017–18, the average length of stay in hospital for injury cases was 3.8 days—a total of almost 1.8 million days in hospital was recorded (AIHW 2020a).

Where do I go for more information?

For more information about injury, see:

- Trends in hospitalised injury, Australia, 2007–08 to 2016–17
- Trends in injury deaths, Australia, 1999–00 to 2016–17
- Emergency department care 2018–19
- Disease expenditure in Australia
- Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015

Visit Injury for more on this topic.

References

ABS (Australian Bureau of Statistics) 2016. Disability, ageing and carers, Australia: summary of findings 2015, data cubes. ABS cat. no. 4433.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019a. Disease expenditure in Australia. Cat. no. HWE 76. Canberra: AIHW.

AIHW 2019b. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2020a. National Hospital Morbidity Database. Findings based on unit record analysis. Canberra: AIHW.

AIHW 2020b. National Mortality Database. Findings based on unit record analysis. Canberra: AIHW.

AIHW 2020c. Emergency department care 2018–19. Canberra: AIHW.

Gabbe BJ, Simpson PM, Cameron PA, Ponsford J, Lyons RA, Collie A, et al. 2017. Long-term health status and trajectories of seriously injured patients: a population-based longitudinal study. PLoS Medicine 14(7): e1002322.

WHO (World Health Organization) 2014. Injuries and violence: the facts, 2014. Geneva: WHO.

International comparisons of health data

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/international-comparisons-of-health-data

Australia performs as well as, or better than many countries on a range of health and health care indicators. However, there are some areas where improvement can be made.

The interactive visualisation on this page compares Australia with other member countries of the Organisation for Economic Co-operation and Development (OECD). Data are for 2017 (or the nearest available year) (OECD 2019a, 2019b). The 36 OECD countries provide a useful comparison for Australia as most are considered to be developed countries with high-income economies. Some of the indicators presented here are reported nationally in the Australian Health Performance Framework.

How does Australia's health compare with other OECD countries?

How does Australia compare?

Click a category below to see how Australia compares to the OECD average or other OECD countries on a particular theme.

| Health Status | Determinants of Health | Health System |

Compare Australia to: Turkey

Health Status: ranking of OECD countries

Life expectancy at birth, females	More desirable	...	Less desirable
Life expectancy at birth, males	More desirable	...	Less desirable
Coronary heart disease mortality	More desirable	...	Less desirable
Dementia prevalence	More desirable	...	Less desirable

■ Australia   ■ Selected comparison   ■ Other OECD countries

Health status

The health status of populations can be measured in a range of ways, such as by life expectancy, and rates of death and illness.

In 2017:

- Life expectancy at birth for Australian females ranked seventh highest of 36 OECD countries at 84.6 years. Japan ranked highest at 87.3 years and Mexico ranked lowest at 77.9 years. The average among all OECD countries was 83.4 years.

- Life expectancy at birth for Australian males ranked ninth highest of 36 OECD countries at 80.5 years, higher than the OECD average of 78.1 years. Switzerland ranked highest at 81.6 years and Latvia ranked lowest at 69.8 years.

- In Australia 77 deaths per 100,000 population were due to coronary heart disease, below the OECD average of 115 deaths per 100,000 population. Australia ranked 14th lowest of 36 OECD countries. Japan had the lowest rate at 31 deaths per 100,000 population, and Lithuania had the highest rate at 383 deaths per 100,000 population (all rates are age-standardised).

- The estimated prevalence of dementia in Australia was 14.6 per 1,000 population, close to the OECD average of 15.3 per 1,000 population and ranking 17th lowest of 36 OECD countries. Mexico had the lowest rate, half the Australian rate at 7.6 per 1,000 population, whereas Japan's rate was considerably higher at 24.8 per 1,000 population.

For more information on these topics see How healthy are Australians?, Coronary heart disease and Dementia.

Determinants of health

Determinants of health are factors that influence health status, and include health behaviours and biomedical factors.

In 2017:

- Australians consumed 9.4 litres of pure alcohol per year for each person aged 15 and over. This is higher than the OECD average of 8.9 litres per person and Australia ranked 17th highest (or 20th lowest) of 36 OECD countries. Turkey had the lowest rate at 1.4 litres per person, and Lithuania had the highest at 12.3 litres per person per year.

- 3 in 10 (30%) Australians aged 15 and over were obese, higher than the OECD average of 24%, and the fifth highest (or 19th lowest) of 23 OECD countries for which data were available. Japan had the lowest rate at 4.4% and the United States had the highest at 40%.

- 1 in 8 (12%) Australians aged 15 and over were daily smokers, the seventh lowest rate of 36 OECD countries. Mexico had the lowest rate of 7.6% and Greece had the highest rate of 27%. The OECD average was 18%.

For more information on these topics see Tobacco smoking, Alcohol risk and harm and Overweight and obesity.

Health system

A range of measures can be used to compare Australia's health system internationally. When combined they can be used to form an impression of how Australia's system performs relative to other countries.

In 2017:

- Australia had the eighth highest health care expenditure at 9.2% of Gross Domestic Product (GDP) out of 36 OECD countries, higher than the OECD median of 8.1%. The lowest health expenditure was in Turkey at 4.2%, and the highest was in the United States at 16.2% of GDP (AIHW health expenditure database; OECD 2019a).
- Australia had 3.7 practising doctors per 1,000 population, compared with the OECD average of 3.5 per 1,000 population. Australia ranked 14th highest of 36 OECD countries. The lowest rate was 1.9 per 1,000 population in Turkey, and the highest was 6.1 practising doctors per 1,000 population in Greece.
- Australia had 12 practising nurses per 1,000 population, compared with the OECD average of 8.8. Australia ranked ninth highest of 36 OECD countries. The lowest rate was 2.1 per 1,000 population in Turkey, and the highest was 18 practising nurses per 1,000 population in Norway.
- Australia had 3.8 hospital beds per 1,000 population, compared with the OECD average of 4.7. Australia ranked 18th highest of 36 OECD countries. The lowest rate was 1.4 per 1,000 population in Mexico, and the highest was 13 in Japan.
- Australia had the third highest 5-year net survival rate for colon cancer of 32 OECD countries for which data were available, at 71%, while the OECD average was 62%. South Korea had the highest survival rate at 72%, and Chile had the lowest at 44%.

For more information on these topics see Health expenditure, Health workforce, Hospital care and Cancer.

Where do I go for more information?

For more information on international comparisons of health data, see:

- International health data comparisons, 2018
- International comparisons of welfare data
- A working guide to international comparisons of health
- Organisation for Economic Co-operation and Development (OECD) OECD.Stat
- OECD Data website.

Visit International comparisons for more on this topic.

References

OECD (Organisation for Economic Co-operation and Development) 2019a. OECD health statistics 2019. Paris: OECD Publishing. Viewed 25 September 2019.

OECD 2019b. Health at a Glance 2019. Paris: OECD Publishing.

Mental health

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/mental-health

Mental health is a key component of overall health and wellbeing (WHO 2013). The National Survey of Mental Health and Wellbeing conducted in 2007 found that an estimated 1 in 5 (20%) Australians aged 16–85 experienced a mental disorder in the previous 12 months (ABS 2008). A mental illness can be defined as 'a clinically diagnosable disorder that significantly interferes with a person's cognitive, emotional or social abilities' (COAG Health Council 2017). The term itself covers a range of illnesses including anxiety disorders, affective disorders, psychotic disorders and substance use disorders.

However, a person does not need to meet the criteria for a mental illness or mental disorder to be negatively affected by their mental health (COAG Health Council 2017; Slade et al. 2009). Mental health affects and is affected by multiple socioeconomic factors, including a person's access to services, living conditions and employment status, and affects not only the individual but also their families and carers (Slade et al. 2009; WHO 2013).

How common is mental illness?

Measuring mental health

The National Survey of Mental Health and Wellbeing was a program of 3 targeted mental health epidemiological surveys that based their classification of mental disorders on existing diagnostic criteria to estimate prevalence (ABS 2008). The 3 surveys included the National Survey of Mental Health and Wellbeing, the National Survey of People Living with Psychotic Illness and the Australian Child and Adolescent Survey of Mental Health and Wellbeing (AIHW 2020). The data obtained from these surveys are due to be updated from 2020–21 as part of the Intergenerational Health and Mental Health Study, which will consist of 4 surveys over 3 years (ABS 2019; AHHA 2019). The National Study of Mental Health and Wellbeing will update the data on the prevalence of mental disorders from 2007. Another source of information about the mental health of Australians is the ABS's National Health Survey 2017–18, which provides data on a range of health conditions including mental and behavioural disorders. The National Health Survey estimates are based on self-reported data, and record a participant as having a mental or behavioural condition during the collection period only if it was also reported as long-term (had lasted, or was expected to last, a minimum of 6 months) (ABS 2018).

Together, these surveys provide an overview of the prevalence of mental disorders in Australia.

The National Survey of Mental Health and Wellbeing 2007 estimated that:

- nearly 1 in 2 (46%) Australians aged 16–85 had experienced a mental disorder during their lifetime
- 1 in 5 (20%) people who had experienced a mental disorder in their lifetime had symptoms in the 12 months before the survey interview. For these people, anxiety disorders were the most prevalent type of disorder (14%), followed by affective disorders (6.2%) and substance use disorders (5.1%)
- a higher proportion of males than females (48% compared with 43%) had experienced a mental disorder in their lifetime, however, a higher proportion of females than males (22% compared with 18%) had experienced symptoms in the 12 months before the survey
- 16–24 year olds (26%) were most likely to have experienced symptoms of a mental disorder in the previous 12 months and 75–85 year olds the least likely (5.9%)
- over 4 in 10 (43%) people with a disability status of profound or severe core-activity limitation experienced symptoms of a mental disorder in the 12 months before the survey, compared with 17% of people with no disability or limitations (ABS 2008). See Health of people with disability.

The National Survey of People Living with Psychotic Illness 2010 estimated that:

- 64,000 (or 4.5 cases per 1,000 population) people with a psychotic illness, who were aged 18−64, were in contact with public specialised mental health services in a 12-month period
- the prevalence of psychotic disorder was higher for males than for females (5.4 and 3.5 cases per 1,000 population, respectively). The age groups with the highest prevalence were 25–34 and 35–44 (5.6 cases per 1,000 population for both age groups) (Morgan et al. 2011).

The Australian Child and Adolescent Survey of Mental Health and Wellbeing 2013–14 (Young Minds Matter) estimated that, in the 12 months before the survey:

- 560,000 children and adolescents aged 4–17 (14%) experienced a mental disorder
- males had a higher prevalence of mental disorders (16%) than females (12%)
- of the mental disorders experienced by participants, the following were most prevalent: attention deficit hyperactivity disorder (ADHD) (7.4%); anxiety disorders (6.9%); major depressive disorder (2.8%); and conduct disorder (2.1%). (Lawrence et al. 2015). See Health of young people.

The National Health Survey 2017–18 estimated that:

- 1 in 5 (20%, or 4.8 million) Australians reported that they had a mental or behavioural condition during the collection period (July 2017 to June 2018)

- females reported a higher proportion of mental or behavioural conditions (22%) than males (18%)

- overall, 15–24 year olds had the highest proportion of mental or behavioural conditions (26%) and 0–14 year olds had the lowest (11%)

- of those participants who had a severe disability, 58% had a mental or behavioural condition compared with 14% of people with no disability or long-term restrictive health condition (ABS 2018).

Figure 1: Proportion of Australians with current long-term mental or behavioural conditions, by age group and sex, 2017–18
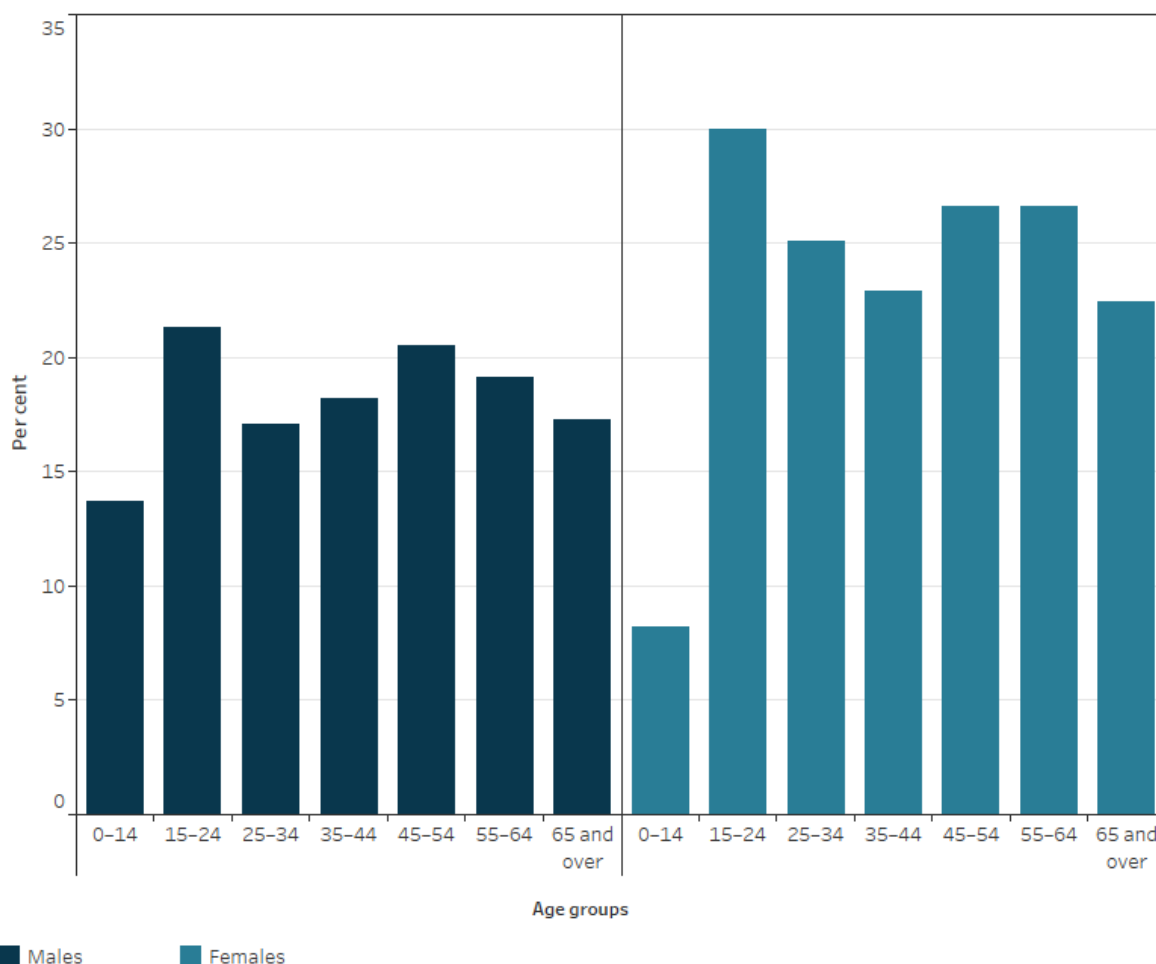
Note: Refers to individuals who reported having a current medical condition (at the time of interview) which has lasted, or is expected to last, for 6 months or more, unless otherwise stated.
Source: ABS 2018.
https://www.aihw.gov.au

Impact

Burden of disease

Mental health affects not just the individual but also the wider community. The total burden of a disease on a population can be defined as the combined loss of years of healthy life due to premature death (known as fatal burden) and living with ill health (known as non-fatal burden). Mental and substance use disorders contributed 12% of Australia's total burden of disease in 2015, making it the fourth highest disease group contributing to total burden. Of the total burden caused by mental and substance use disorders, 98% was due to living with the effects of these disorders (AIHW 2019). Mental and substance use disorders were the second highest disease group contributing to non-fatal burden (23%) after the first-ranked musculoskeletal conditions (25%). See [Burden of disease](#).

Indigenous Australians

There is a substantial difference in the burden of mental health on Aboriginal and Torres Strait Islander Australians compared with non-Indigenous Australians. In 2011, the years of healthy life lost per 1,000 people due to mental and substance use disorders among Indigenous Australians was 2.4 times the rate for non-Indigenous Australians (57.8 compared with 23.6) (AIHW 2016). See [Indigenous health and wellbeing](#).

Suicidality

For individuals who have a mental illness, suicidality—a term that encompasses suicide plans, attempts and ideation—is more prevalent than for those who have no mental illness. According to the National Survey of Mental Health and Wellbeing in 2007, almost 1 in 12 (8.6%) people with 12-month mental disorders reported being suicidal in the 12 months prior to the survey; 0.8% of people without a 12-month mental disorder reported suicidality in that same period (Slade et al. 2009). Overall, 72% of people who exhibited suicidality had a 12-month mental disorder (ABS 2008). See [Suicide and intentional self harm](#) for more information on suicide in Australia.

Comorbidity

A person may also have more than 1 type of condition at a time. The 2007 National Survey of Mental Health and Wellbeing estimated that 3.2% of Australians aged 16−85 had experienced more than 1 mental disorder in the previous 12 months, and 11.7% had experienced a mental disorder and a physical condition in the previous 12 months (ABS 2008). See [Physical health of people with mental illness](#) for more information.

Treatment and management

See [Mental health services](#) for more information on mental health treatment and management in Australia.

Where do I go for more information?

For more information on mental health, see:

- [Mental health services in Australia](#)
- [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015](#)
- Council of Australian Governments Health Council [Fifth National Mental Health and Suicide Prevention Plan](#)

Visit [Mental health services](#) for more information on this topic.

If you or someone you know needs help, please call:

- [Lifeline](#) 13 11 14
- [Suicide Call Back Service](#) 1300 659 467
- [Kids Helpline](#) 1800 55 1800
- [MensLine Australia](#) 1300 78 99 78
- [Beyond Blue](#) 1300 22 4636.

Crisis support services can be reached 24 hours a day.

References

ABS (Australian Bureau of Statistics) 2008. [National Survey of Mental Health and Wellbeing: summary of results, 2007](#). ABS cat. no. 4326.0. Canberra: ABS.

ABS 2018. [National Health Survey: first results, 2017–18](#). ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019. [Forward work program, 2019–20](#). ABS cat. no. 1006.0. Canberra: ABS.

AHHA (The Australian Healthcare and Hospitals Association) 2019. [Investment in health surveys, mental health and prevention money well spent](#). AHHA. Viewed 9 October 2019.

AIHW (Australian Institute of Health and Welfare) 2016. [Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011](#). Cat. no. BOD 7. Canberra: AIHW.

AIHW 2019. [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015](#). Cat. no. BOD 22. Canberra: AIHW.

AIHW 2020. [Mental health services in Australia](#). Canberra: AIHW.

COAG (Council of Australian Governments) Health Council 2017. The Fifth National Mental Health and Suicide Prevention Plan. Canberra: Department of Health.

Lawrence D, Johnson S, Hafekost J, Boterhoven de Haan K, Sawyer M, Ainley J et al. 2015. The mental health of children and adolescents: report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. Canberra: Department of Health.

Morgan VA, Waterreus A, Jablensky A, Mackinnon A, McGrath JJ, Carr V et al. 2011. People living with psychotic illness 2010: report of the second Australian National Survey. Canberra: Department of Health.

Slade T, Johnston A, Teesson M, Whiteford H, Burgess P, Pirkis J et al. 2009. The mental health of Australians 2: report on the 2007 National Survey of Mental Health and Wellbeing. Canberra: Department of Health and Ageing.

WHO (World Health Organization) 2013. Mental health action plan 2013–2020. Geneva: WHO.

Physical health of people with mental illness

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/physical-health-of-people-with-mental-illness

Mental health and physical health are inextricably linked and people with mental illnesses are more likely to develop physical illness and tend to die earlier than the general population.

International studies report a reduced life expectancy in psychiatric patients by 20 years in males and 15 years in females (Laursen 2011; Wahlbeck et al. 2011). Research from Western Australia found that the gap in life expectancy for people with psychiatric disorders registered with West Australian mental health services increased between 1985 and 2005, from 13.5 to 15.9 years for males and 10.4 to 12.0 years for females. The majority of excess mortality was attributed to physical health conditions, such as cardiovascular disease, respiratory disease, and cancer (Lawrence et al. 2013).

Evidence suggests that people with mental illness are more likely to develop physical illness due to a combination of lifestyle, socioeconomic and system-level factors such as social stigma, lack of health service integration, and a lack of clarity about who is responsible for physical health monitoring in people with mental illness. Medication side effects (for example, weight gain and hyperlipidaemia—elevated levels of lipids in the blood) may also be a significant contributor for some individuals (Firth et al. 2019; Liu et al. 2017). See Mental health for more information about mental illness.

Measuring physical health of people with mental illness

Part of the challenge in reporting on the physical health of people experiencing mental illness is a lack of information. However, while there is no national data set on prevalence of physical illness in mentally ill people, information is available from a number of other data sources. Together these sources provide insight into the chronic conditions and substance use in people with mental illness.

A number of initiatives and programs that monitor the physical heath of Australians with mental illness have the potential to provide insight into this important issue, but they are not consistent across jurisdictions and different health settings. In 2017, the Australian Government committed to regular national monitoring and reporting (Department of Health 2017); funding for an updated National Nutrition and Physical Activity

Study and a National Health Measures Study was also announced in 2019. It is expected that data from these studies will better inform future physical health information activities.

Measuring patient experience is an important component of the care for people with mental illness not only to guide service improvement, but also because quality of care is linked with clinical outcomes. Because of the bidirectional relationship between physical and mental health, New South Wales has investigated several aspects of physical health care including healthy eating and diet, smoking, alcohol and drug use, sexual health, exercise and physical activity, and possible side effects of some medications. According to its 2018–19 Your Experience of Service survey, more than half of mental health consumers recall being provided with information on exercise, diet, medication side effects, smoking, and alcohol and drug use. People were less likely, though, to recall receiving information on sexual health (NSW Ministry of Health 2019). See Patient experience of health care.

How common is physical illness among people with mental illness?

There is no national data set that directly monitors the prevalence of physical illness in mentally ill people but some information is available from other data sources.

For example, the 2017–18 National Health Survey (ABS 2018) estimated that there was a strong overlap between physical health and mental health problems. People who reported having a mental illness were much more likely to report having a chronic medical condition, and vice versa. Females with a mental and/or behavioural condition were more likely to have a physical health comorbidity than males. The most common chronic conditions reported included back problems, arthritis, and asthma (Table 1). See Chronic conditions and multimorbidity for more information.

Table 1: Chronic conditions of persons with and without mental illness in 2017−18

Selected chronic condition	Persons with mental illness[a] (%)	Persons without mental illness (%)
Arthritis[b]	23.3	13
Asthma	18.2	9.5
Back problems[c]	27.7	13.5
Cancer (malignant neoplasms)	2.6	1.6

Selected chronic condition	Persons with mental illness[a] (%)	Persons without mental illness (%)
Chronic obstructive pulmonary disease[d]	5.2	1.8
Diabetes mellitus[e]	6.7	4.4
Heart, stroke and vascular disease[f]	7.1	4.2
Kidney disease	1.9	0.8
Osteoporosis	6.3	3.2

(a) Includes alcohol and drug problems, mood (affective) disorders, anxiety-related disorders, organic mental disorders and other mental and behavioural conditions.

(b) Includes rheumatoid arthritis, osteoarthritis, other and type unknown.

(c) Includes sciatica, disc disorders, back pain/problems not elsewhere classified and curvature of the spine.

(d) Includes bronchitis and emphysema.

(e) Includes Type 1 and Type 2 diabetes, and type unknown. Estimates also include persons who reported they had diabetes but that it was not current at the time of interview.

(f) Includes angina, heart attack, other ischaemic heart diseases, stroke, other cerebrovascular diseases, oedema, heart failure, and diseases of the arteries, arterioles and capillaries. Estimates include persons who reported they had angina, heart attack, other ischaemic heart diseases, stroke or other cerebrovascular diseases but that these conditions were not current at the time of interview.

Source: ABS 2018.

The second national survey of People Living with Psychotic Illness (Morgan et al. 2011) also provides estimates on the physical health of Australians living with psychosis. Chronic back, neck or other pain were the most common chronic physical conditions (32% compared with 28% for the general population) identified among people with psychosis in 2010. Other common conditions included asthma (30% compared with 20% for the general population) and heart or circulatory conditions (27% compared with 16%).

One-quarter (24%) of people with psychosis were at high risk of cardiovascular disease. About half (45%) of people with psychotic illness were obese and almost two-fifths (38%) reported gaining weight as a medication side effect. Physical activity levels were far lower in people with psychosis, with 96% classified as either sedentary or undertaking

low levels of exercise in the previous week compared with 72% for the general population (Morgan et al. 2011).

Substance use and mental illness

There is a strong association between the use of alcohol, tobacco and illicit drugs and mental illness. Use of these substances can not only trigger or worsen mental health issues, but is strongly associated with physical health conditions including cancer, cirrhosis, and cardiovascular disease (Crocq 2003).

According to the 2019 National Drug Strategy and Household Survey (AIHW 2020), people who had been diagnosed or treated for a mental health condition in the previous 12 months were estimated to be about 1.2 times as likely to drink alcohol at levels that exceeded the lifetime risk and single occasion risk (at least monthly) guidelines than people who had not been diagnosed or treated for a mental illness (Table 2). According to the *People living with psychotic illness 2010* report, the lifetime rate of alcohol use or dependence in people with psychosis was double the rate of the general population (51% compared with 25%) (Morgan et al. 2011).

Table 2. Proportion of people aged 18 years and over who use alcohol, tobacco and illicit drugs by mental health status in 2019

Mental illness[a]	Alcohol use		Any illicit drug use	Daily smoking
	Single occasion risk (at least monthly) (%)	Lifetime risk (%)		
Diagnosed or treated for a mental health condition	30.9	21.3	26.2	20.2
Not diagnosed or treated for a mental health condition	25.3	17.1	15.2	9.9

(a) Includes depression, anxiety disorder, schizophrenia, bipolar disorder, an eating disorder and other form of psychosis.

Source: AIHW 2020.

Use of Illicit drugs is also common among people with mental illness. In 2019, compared to people with no mental illness, people with mental health condition were 1.7 times as likely to have used any illicit drug in the previous 12 months and about 2 times as likely

to have used meth/amphetamine and pharmaceuticals for non-medical purposes (AIHW 2020). The lifetime rate of any substance use or dependence in people with psychosis, at 51%, was 6 times the population figure of 9% (Morgan et al. 2011). See Illicit drug use.

A similar pattern to that for consumers of alcohol and users of illicit drugs is apparent for daily smokers. People who reported a mental health condition were twice as likely to smoke daily as those who had not been diagnosed with, or treated for, a mental health condition (20% compared with 9.9%) (Table 2) (AIHW 2020). Two-thirds (66%) of people with psychosis smoke, smoking on average 21 cigarettes per day. Almost one-third (31%) of people had tried to quit in the last year, but just over one-quarter (27%) had never tried (Morgan et al. 2011).

Another source of information on physical health and substance use in people with mental illness is Victoria's *Mental Health Services annual report*, where new indicators on the incidence of tobacco and diabetes have been added as part of Victoria's 10-Year Mental Health Plan. According to the 2018–19 report, 10% of registered Victorian mental health clients were diagnosed with type 2 diabetes and 37% of admitted clients were tobacco users (DHHS 2019).

Treatment and management

To improve the management of physical health conditions in adults with severe mental disorders, and support the reduction of individual health behaviours constituting risk factors for these illnesses in order to decrease morbidity and premature mortality, the World Health Organization (WHO) has developed guidelines discussing pharmacological and non-pharmacological interventions related to tobacco cessation, weight management, substance use disorders, cardiovascular disease and risk, diabetes mellitus, HIV/AIDS, and other infectious diseases (tuberculosis, hepatitis B/C). In summary, WHO recommends that lifestyle changes such as following a healthier diet, increasing physical activity and quitting smoking together with psychosocial support have an important role in reducing physical illness in people with severe mental illness (WHO 2018). See Mental health services for more information.

Future directions

Improving the physical health of Australians with mental illness and ensuring that their life expectancy and quality of life is the same as among the general population is a priority for policymakers and clinicians. A number of common themes are evident in national and state mental health commission reports on this issue, including:

- the need for holistic person-centred physical and mental health care using a collaborative and coordinated approach

- addressing the side effects of antipsychotic medication

- education (Mental Health Commission of NSW 2016).

Where do I go for more information?

For more information on the physical health of people with mental illness, see:

- Australian Bureau of Statistics National Health Survey: first results, 2017–18
- Equally Well Improving the physical health of people living with mental illness
- National Drug Strategy Household Survey 2019
- NSW Ministry of Health Your Experience of Service: What consumers say about NSW Mental Health Services 2018–2019.
- The Royal Australian & New Zealand College of Psychiatrists Keeping body and mind together: improving the physical health and life expectancy of people with serious mental illness

References

ABS 2018. National Health Survey: first results, 2017–18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2020. National Drug Strategy Household Survey 2019. Drug Statistics series no. 32. Cat. no. PHE 270. Canberra: AIHW.

Crocq MA 2003. Alcohol, nicotine, caffeine, and mental disorders. Dialogues in Clinical Neuroscience 5(2):175–185.

Department of Health 2017. The Fifth National Mental Health and Suicide Prevention Plan. Canberra: Australian Government.

DHHS (Department of Health and Human Services Victoria) 2019. Victoria's mental health services annual report 2018–19. Melbourne: DHHS.

Firth J, Siddiqi N, Koyanagi A, Siskind D, Rosenbaum S, Galletly C et al. 2019. The Lancet Psychiatry Commission: a blueprint for protecting physical health in people with mental illness. The Lancet Psychiatry 6(8):675–712.

Laursen TM 2011. Life expectancy among persons with schizophrenia or bipolar affective disorder. Schizophrenia Research 131:101–4.

Lawrence D, Hancock K & Kisely S 2013. The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: retrospective analysis of population based registers. British Medical Journal 346:f2539.

Liu NH, Daumit GL, Dua T, Aquila R, Charlson F, Cuijpers P et al. 2017. Excess mortality in persons with severe mental disorders: a multilevel intervention framework and priorities for clinical practice, policy and research agendas. World Psychiatry 16(1):30–40.

Mental Health Commission of NSW 2016. Physical health and mental wellbeing: evidence guide. Sydney: Mental Health Commission of NSW.

Morgan VA, Waterreus A, Jablensky AV, Mackinnon A, McGrath J, Carr V et al. 2011. [People living with psychotic illness 2010: report on the second Australian national survey](). Canberra: Australian Government.

NSW (New South Wales) Ministry of Health 2019. [Your experience of service: what consumers say about NSW Mental Health Services 2018–2019.]() Sydney: NSW Government.

Wahlbeck K, Westman J, Nordentoft M, Gissler M, Laursen TM 2011. Outcomes of Nordic mental health systems: life expectancy of patients with mental disorders. The British Journal of Psychiatry 199:453–8.

WHO (World Health Organization) 2018. [WHO guidelines: Management of physical health conditions in adults with severe mental disorders](). Geneva: WHO.

Stroke

On this page

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Impact

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Stroke occurs when a blood vessel supplying blood to the brain either suddenly becomes blocked (ischaemic stroke) or ruptures and begins to bleed (haemorrhagic stroke). Either may result in part of the brain dying, leading to sudden impairment that can affect a number of functions. Stroke often causes paralysis of parts of the body normally controlled by the area of the brain affected by the stroke, or speech problems and other symptoms, such as difficulties with swallowing, vision and thinking.

Stroke is often preventable because many of its risk factors are modifiable. These include biomedical risk factors such as high blood pressure, insufficient physical activity, overweight and obesity, and tobacco smoking. Stroke contributes to premature death, disability, and preventable hospitalisations, consequently a National Strategic Action Plan for Heart Disease and Stroke is under development. The action plan aims to reflect priorities, and identify implementable actions to reduce the impact of stroke in the community.

How common is stroke?

In 2018, an estimated 387,000 people—214,000 males and 173,000 females—had had a stroke at some time in their lives, based on self-reported data from the Australian Bureau of Statistics 2018 Survey of Disability, Ageing and Carers (ABS 2019). The estimated prevalence of stroke has declined slightly between 2003 and 2018 (1.7% and 1.3% respectively) (ABS 2019; AIHW 2013).

In 2017, there were around 38,000 stroke events—more than 100 every day. The rate of these events, based on hospital and mortality data, fell 24% between 2001 and 2017, from an age-standardised rate of 169 to 129 per 100,000 population. The rate of decline

was greater among those aged 75 and over, when compared to those aged 55–74 (Figure 1).

Figure 1: Stroke events among those aged 55 and over, by age group and sex, 2001 to 2017
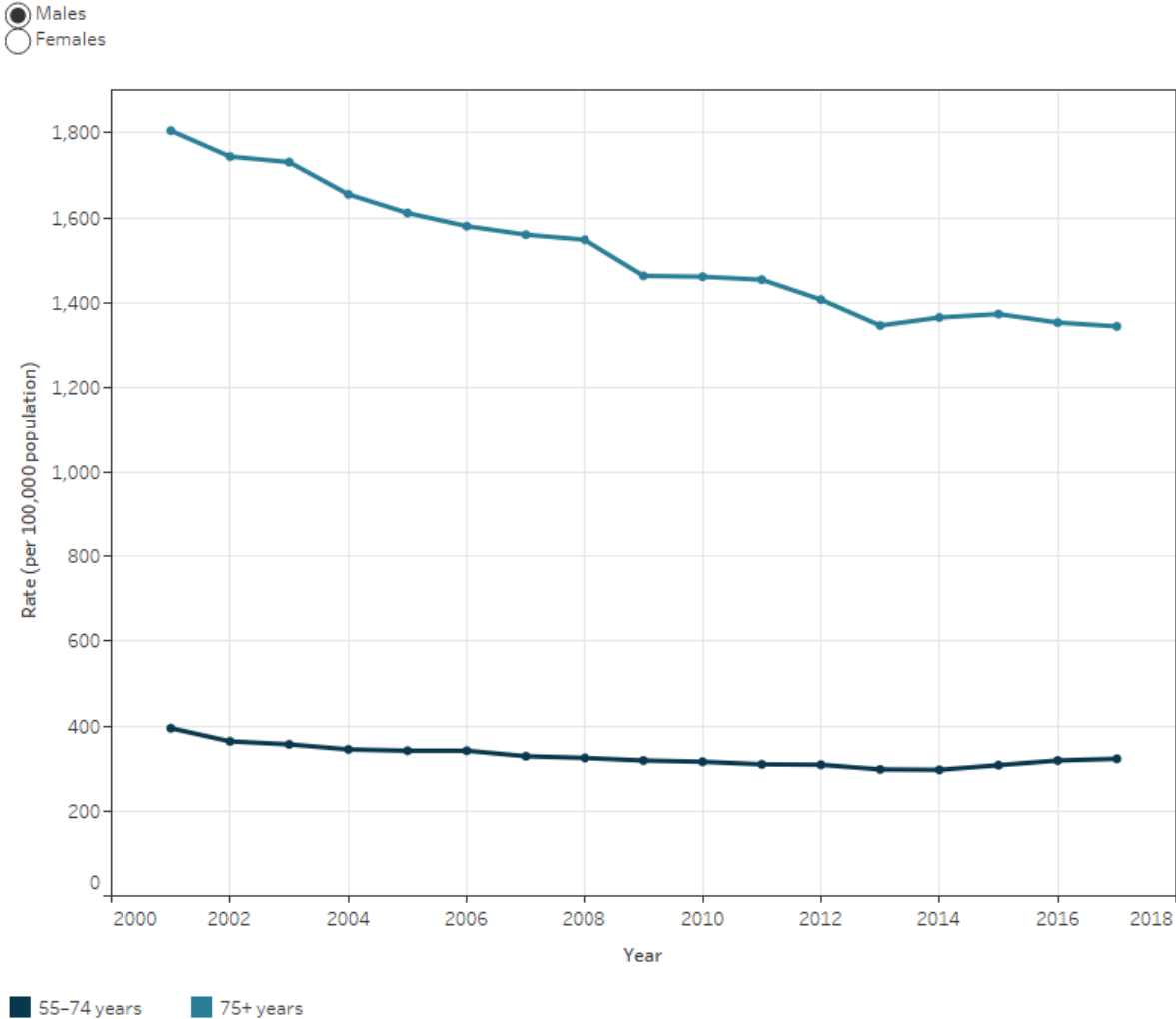
Source: AIHW 2019c; AIHW 2019d.
http://www.aihw.gov.au/

Impact

Deaths

In 2018, stroke was recorded as the underlying cause of 8,400 deaths, accounting for 5.3% of all deaths in Australia.

Between 1980 and 2018, overall death rates for stroke have fallen by three-quarters (75%), or 3.5% a year.

The rate of decline has remained steady in people aged 75 and over but slowed among younger age groups (Figure 2).

See Causes of death.

Figure 2: Stroke deaths in Australia, 1980 to 2018

Select a measure
- ⦿ Number of deaths
- ◯ Deaths per 100,000

Legend: ▮ Males 55–74 ▮ Males 75+ ▮ Females 55–74 ▮ Females 75+
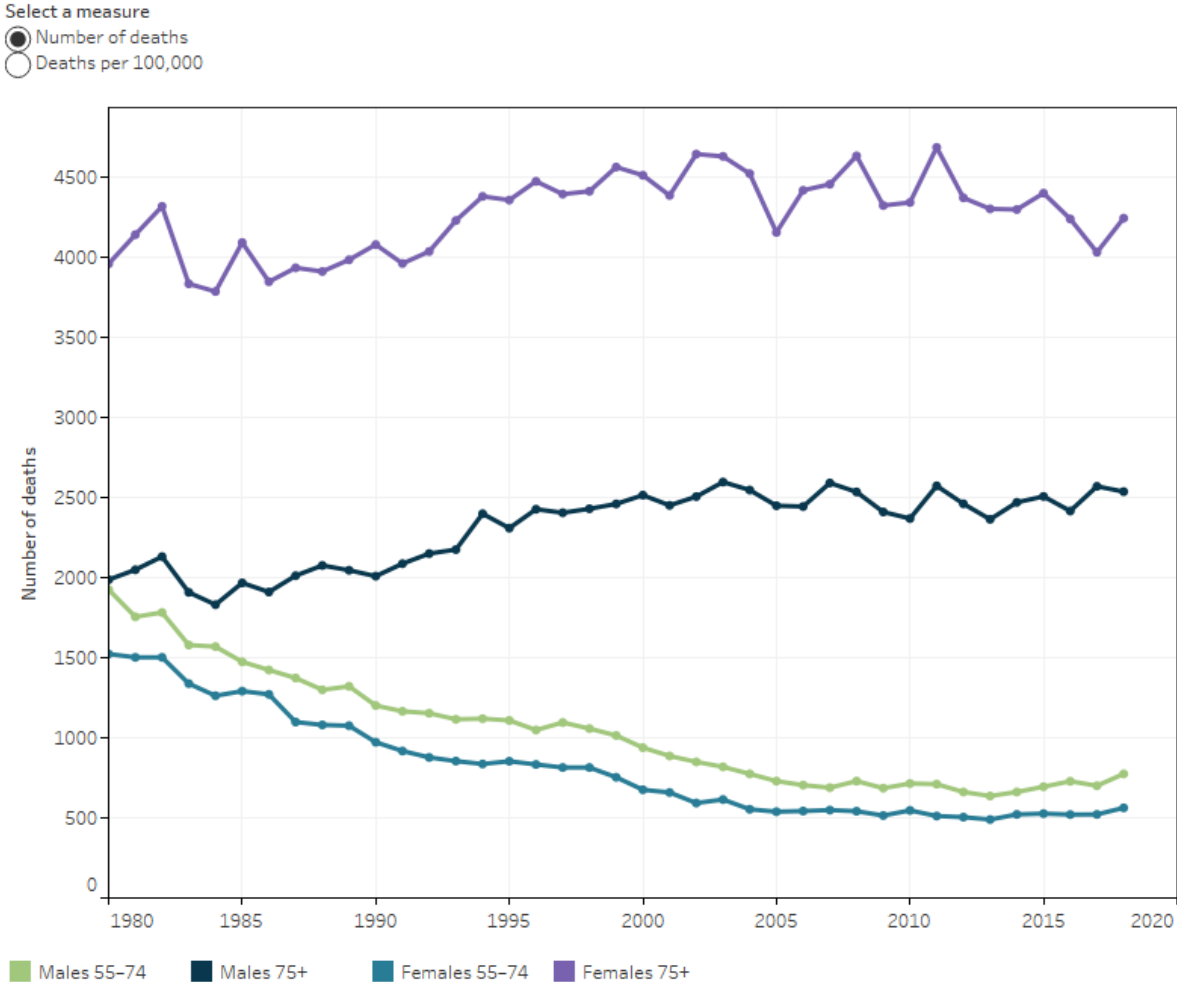
Note: A comparability factor of 0.83 has been applied to deaths before 1996 to make them comparable with data from 1997 onwards, following the introducion of automated coding and ICD-10 codes.
Source: AIHW 2019d.
http://www.aihw.gov.au/

Burden of disease

In 2015, stroke accounted for 2.7% of the total burden of disease in Australia and was the 10th leading specific cause of disease burden. Stroke was the third highest disease burden in people aged 85 and over, accounting for 6.6% of the burden in males and 8.1% of the burden in females.

The total burden of disease due to stroke decreased by 41% between 2003 and 2015. This included a 42% decline in the fatal burden and a 30% decline in the non-fatal burden (AIHW 2019a).

See [Burden of disease](#).

Expenditure

In 2015–16, the estimated health system expenditure on stroke was more than $633 million. The greatest cost was for public hospital admitted patient services ($345 million) followed by private hospital services ($105 million) (AIHW 2019b).

See [Health expenditure](#).

Treatment and management

Hospitalisations

In 2017–18, there were almost 40,000 acute care hospitalisations with a principal diagnosis of stroke, at a rate of 133 per 100,000 population. Acute care hospitalisation rates were higher among males than females (1.4 times as high), and most hospitalisations (73%) were for people aged 65 and over.

The average length of stay for stroke patients in acute hospital care was 7 days in 2017–18. Stroke patients in rehabilitation care had an average length of stay of 24 days.

See [Hospital care](#).

Variation between population groups

The impact of stroke varies between population groups, with rates higher among Aboriginal and Torres Strait Islander people than among non-Indigenous Australians.

Death rates and burden of disease were similar in *Remote and very remote* areas and *Major cities*. Hospitalisation rates for stroke were 1.4 times as high in *Remote and very remote* areas as in *Major cities*. The rate of hospitalisation for stroke was 1.4 times as high in the lowest socioeconomic areas as in the highest (Figure 3).

See [Rural and remote health](#).

Figure 3: The impact of stroke—Variation between selected population groups

Hover on the numbers for more information on the impact of stroke in each population group.

Comparing rates for:	Indigenous / non-Indigenous	Remote and very remote / Major cities	Lowest / highest socioeconomic areas
Having stroke	n.a.	1.2x	2.3x
Being hospitalised for stroke	1.6x	1.4x	1.4x
Dying from stroke	1.3x	1.0x	1.3x
Burden of disease	2.3x	1.2x	1.4x

Sources: ABS 2019; AIHW 2016; AIHW 2019a; AIHW 2019c; AIHW 2019d.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on stroke, see:

- Cardiovascular disease
- Cardiovascular disease in women—a snapshot of national statistics
- Australian Bureau of Statistics Disability, ageing and carers, Australia: summary of findings, 2018

Visit Heart, stroke and vascular disease for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019. 2018 Survey of Disability, Ageing and Carers. Customised data report. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2013. Stroke and its management in Australia: an update. Cardiovascular disease series no. 37. Cat. no. CVD 61. Canberra: AIHW.

AIHW 2016. Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011. Australian Burden of Disease Study series no. 6. Cat. no. BOD 7. Canberra: AIHW.

AIHW 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia, 2015, national estimates for Australia: supplementary tables. Cat. no: BOD 22. Canberra: AIHW.

AIHW 2019b. Disease expenditure in Australia. Cat. no. HWE 76. Canberra: AIHW.

AIHW 2019c. National Hospital Morbidity Database. Findings based on unit record analysis. Canberra: AIHW.

AIHW 2019d. National Mortality Database. Findings based on unit record analysis. Canberra: AIHW.

Suicide and intentional self-harm

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/suicide-and-intentional-self-harm

Suicide and intentional self-harm are complex and can have multiple contributing factors, yet with timely and appropriate interventions they may be preventable.

Where to find help and support

The AIHW recognises that each of the numbers reported here represents an individual. The AIHW acknowledges the devastating effects suicide and self-harm can have on people, their families, friends and communities.

This page discusses suicide and presents material that some people may find distressing. If this report raises any issues for you, these services can help:

- Lifeline 13 11 14

- Suicide Call Back Service 1300 659 467

- Kids Helpline 1800 55 1800

- MensLine Australia 1300 78 99 78

- Beyond Blue 1300 22 4636.

Crisis support services can be reached 24 hours a day.

Mindframe is a national program supporting safe media coverage and communication about suicide, mental ill health and alcohol and other drugs. Mindframe reminds media and communications professionals accessing this page to be responsible and accurate when communicating about suicide, as there is a potential risk to vulnerable audiences. Context is therefore important. Resources to support reporting and professional communication are available at: mindframe.org.au

See 'Chapter xx Improving suicide and intentional self-harm monitoring in Australia' in Australia's health 2020: data insights for information on how suicide data can be improved.

What are suicide and intentional self-harm?

Suicide is the act of deliberately killing oneself (WHO 2014), while intentional self-harm is deliberately causing physical harm to oneself but not necessarily with the intention of dying. The latest statistics on suicide and intentional self-harm are presented, including incidence, trends over time and variations by sex, age, and state and territory of usual residence. The main source of data is the Australian Bureau of Statistics (ABS) national

Causes of Death data set which presents deaths statistics based on year of registration of death. In this data set deaths are classified as suicide if the available evidence indicates the death was from intentional self-harm and are compiled based on the state or territory of usual residence of the deceased, regardless of where in Australia the death occurred and was registered (ABS 2019). See Causes of death.

About deaths data

The ABS collects demographic and cause of death information on all registered deaths in Australia from the states and territories. For reportable deaths (including deaths by suicide), causes of death are coded using information (coronial findings, autopsy, toxicology and police reports) from the National Coronial Information System (NCIS) database. As coronial processes can be lengthy and often not closed at the time ABS cause of death processing is finalised, the ABS undertakes initial processing with subsequent revisions. This enables coroner's cases that remain open to be coded (using the World Health Organization International Statistical Classification of Diseases and Related Health Problems, 10th revision, known as ICD-10) as intentional self-harm (X60–X84, Y87.0) if evidence available on the NCIS indicates the death was from suicide. However, if insufficient information is available, less specific ICD-10 codes are assigned. These cases are then reviewed 12 and 24 months after initial processing so that any change in information regarding the deceased's intention to die can be updated. For the 2019 ABS Causes of Death release, 2018 and 2017 data are considered 'preliminary', 2016 data are 'revised' and 2009–2015 data are 'final'. Although many of the statistics presented here are preliminary, the observed patterns of distribution (for example, age and sex) described in this article are consistent with those observed for finalised deaths by suicide from 2009 to 2015.

How common is suicide?

In 2018, 3,046 deaths by suicide were registered in Australia—an average of about 8 deaths per day—more than two and a half times that of the national road toll in the same year (1,135 road deaths) (BITRE 2019).

Suicide was the leading cause of death among people aged 15–44 in 2016–2018. See Causes of death. To some extent, this is due to the sound physical health of people in these age groups, with chronic diseases only beginning to feature more prominently among people aged over 45 (AIHW 2019).

Nonetheless, deaths by suicide are statistically rare events, with an age-standardised suicide rate of 12.1 deaths per 100,000 population in 2018.

Major cause of premature death

Suicide and self-inflicted injuries was the third leading cause of premature death from injury or disease in 2015 (Figure 1), accounting for an estimated 5.7% of the total fatal burden of disease in Australia. The total years of life lost (YLL) due to suicide and self-inflicted injuries was estimated to be 134,100 years, behind coronary heart disease

(262,000) and lung cancer (154,400) (AIHW 2019). Males experienced almost 3 times the fatal burden from suicide and self-inflicted injuries that females did (100,300 versus 33,800 YLL) (AIHW 2019).

How fatal burden is calculated

Fatal burden is a measure of the years of life lost in the population due to dying from injury or disease. The YLL associated with each death is based on 2 factors: the age at which death occurs and the life expectancy (according to an aspirational life table), which is the number of remaining years that a person would, on average, expect to live from that age. The YLL is calculated by adding the number of deaths at each age, multiplied by the remaining life expectancy for each age of death.

Injuries or diseases that usually cause deaths at younger ages (for example, suicide and self-inflicted injuries) have a much higher average YLL per death than those that tend to cause deaths at older ages (for example, stroke and chronic kidney disease). Therefore, similar amounts of fatal burden can result from a small number of deaths occurring at young ages and a large number of deaths occurring at older ages.

Figure 1: Years of life lost (YLL) for 10 leading causes of fatal burden, 2015
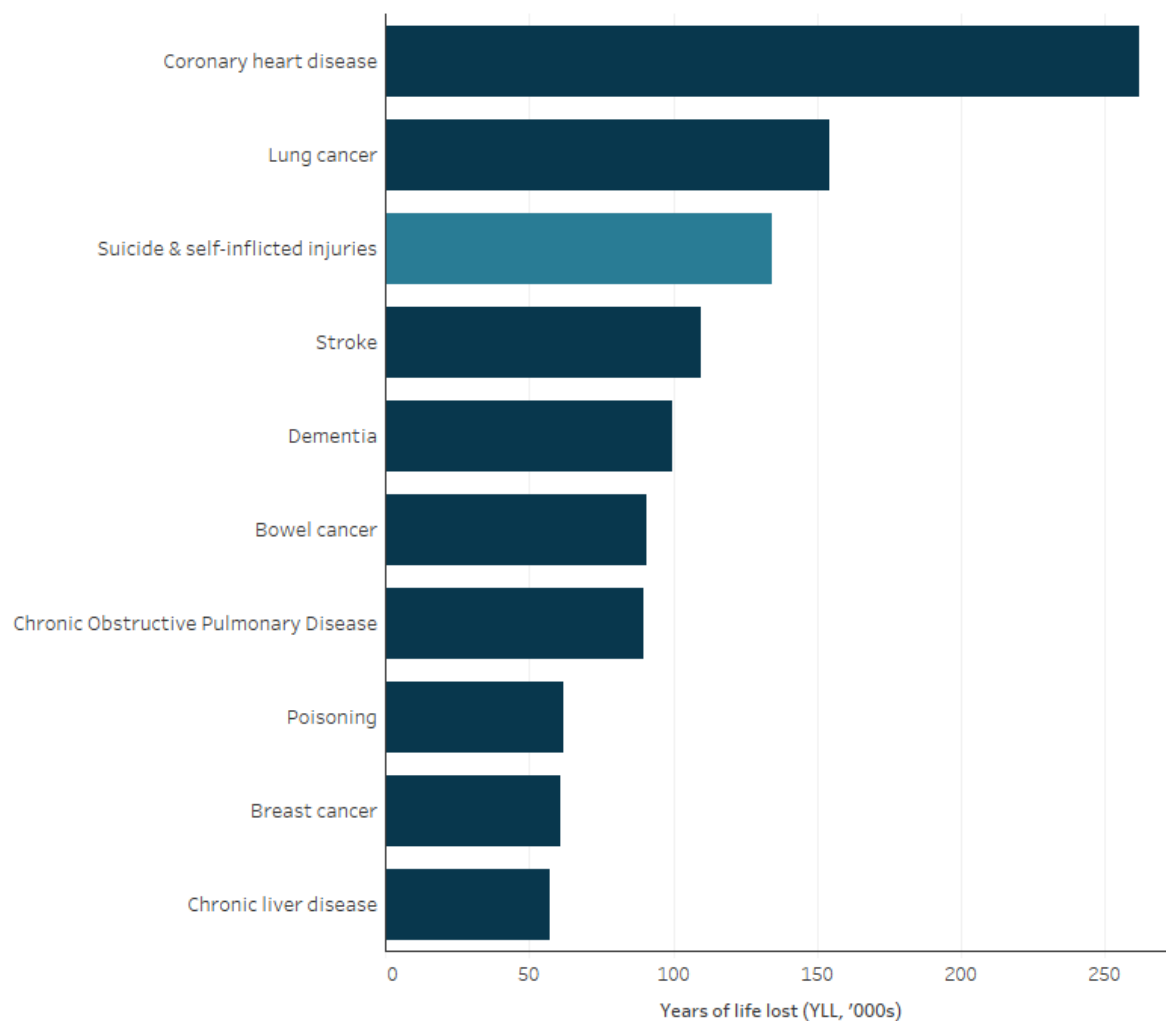
Cause	
Coronary heart disease	(bar ~262)
Lung cancer	(bar ~155)
Suicide & self-inflicted injuries	(bar ~133)
Stroke	(bar ~110)
Dementia	(bar ~99)
Bowel cancer	(bar ~90)
Chronic Obstructive Pulmonary Disease	(bar ~89)
Poisoning	(bar ~62)
Breast cancer	(bar ~61)
Chronic liver disease	(bar ~57)

Years of life lost (YLL, '000s)

Note: YLL measures 'years of life lost' due to premature death according to a standard 'ideal' life expectancy.
Source: AIHW 2019.
http://www.aihw.gov.au

Trends over time

Trends may be presented by year of occurrence of death or year of registration of death. Using year of occurrence of death is common when the exact time period of the death is important; however, the latest data available may underestimate the occurrence of recent deaths, especially those in the later months of the year, due to a lag in registration. For this reason, year of registration of death is reported to allow the latest year of data to be compared with previous years.

Age-standardised death rates enable the comparison of death rates over time and take into account population increases and the different age structures of populations.

Although the number of deaths by suicide varies each year, the age-standardised suicide rate in Australia has increased from 10.7 per 100,000 population in 2009 to 12.1 deaths

per 100,000 population in 2018—a 13% increase. The rate increased by 13% in males from 2009 to 2018 and 14% in females (Figure 2).

Figure 1: Years of life lost (YLL) for 10 leading causes of fatal burden, 2015

Note: YLL measures 'years of life lost' due to premature death according to a standard 'ideal' life expectancy.
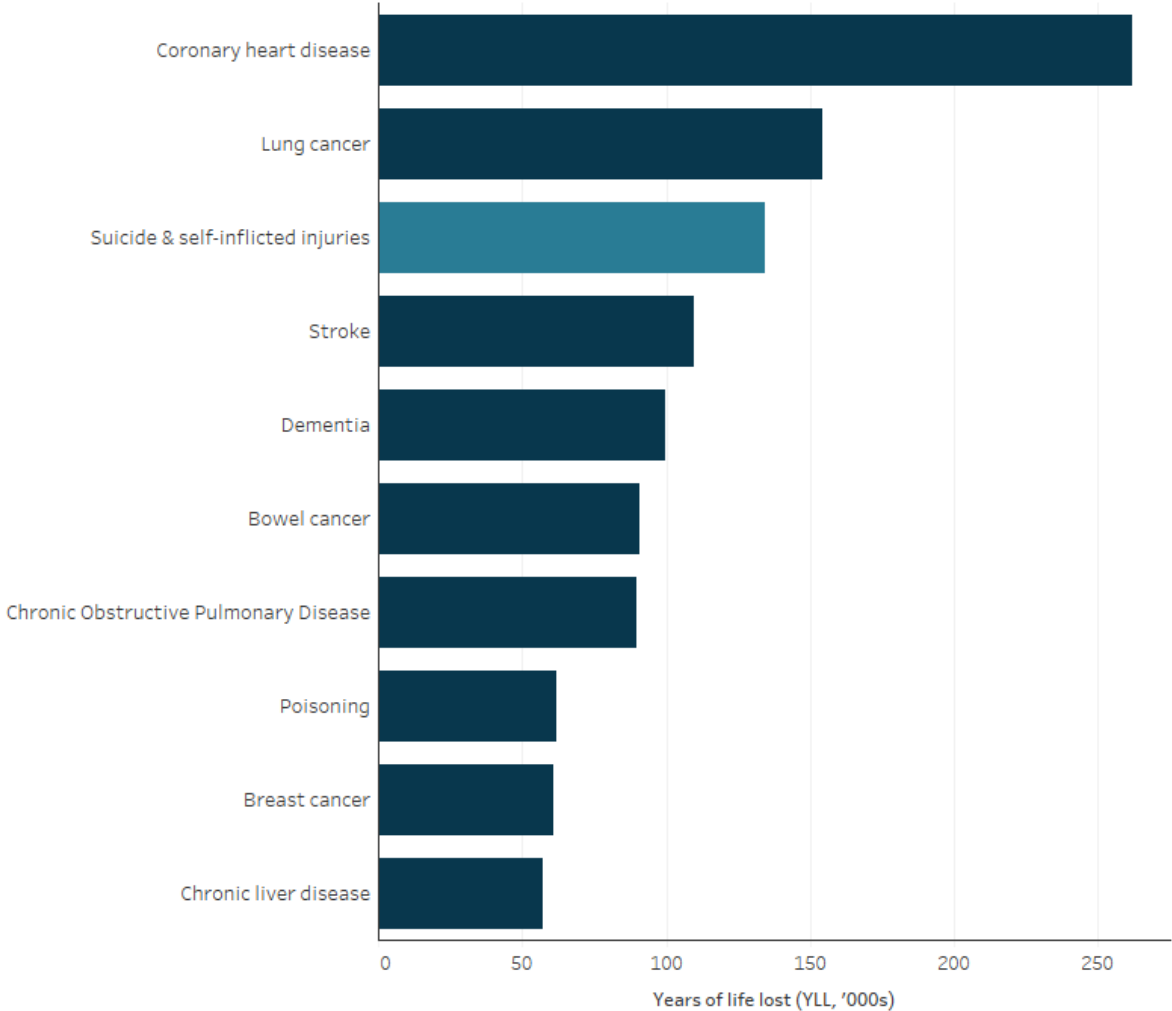Source: AIHW 2019.
http://www.aihw.gov.au

Over the last century in Australia, suicide rates for males have fluctuated above and below a rate of about 20 deaths per 100,000 population per year, with a peak of almost 30 deaths per 100,000 in 1930. Rates for females were about 5 deaths per 100,000 population per year throughout most of this period, with a marked rise in female suicide rates to more than 10 deaths per 100,000 for most of the 1960s (AIHW: Harrison & Henley 2014).

Sex differences

More than three-quarters of the 3,046 registered deaths by suicide in 2018 (76%) occurred in males. In all age groups, the number of deaths by suicide was markedly higher for males than females in 2018 (Figure 3). Over the decade to 2018 the age-

standardised suicide rate for males has been approximately 3 times that of females (Figure 2).

In 2018, the age distribution of deaths by suicide (the proportion of suicides that occurred within each 5-year age group) was similar for males and females—despite there being considerable difference in the number of suicide deaths for each sex (Figure 3).

Figure 3: Age-specific suicide rate, by sex and age, 2018

View by
Age-specific rate (per 100,000 population)
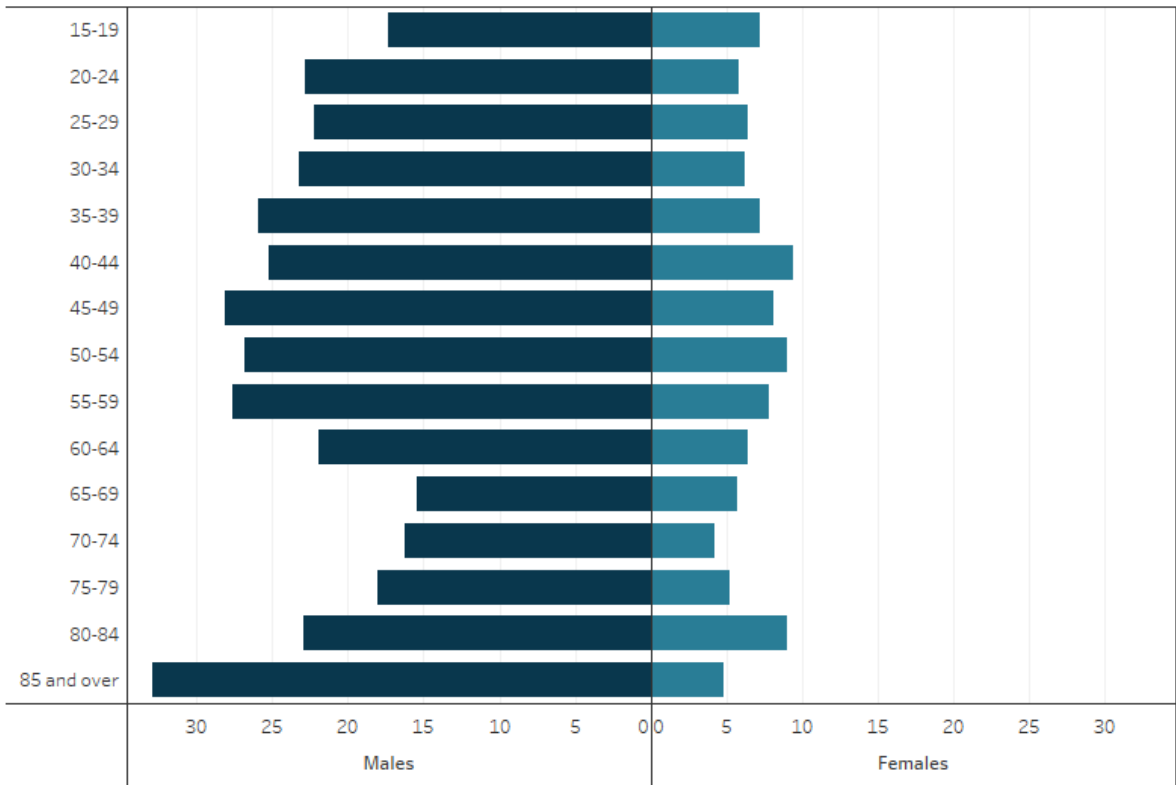
Notes
1. Deaths registered in 2018 are based on preliminary data and are subject to further revisions by the Australian Bureau of Statistics.
2. Deaths by suicide in the 0–14 age group have been excluded because of the small number of deaths that occur within this age group.
3. For more information see Intentional self-harm, key characteristics and the explanatory notes from the data source.
Source: ABS 2019.
https://www.aihw.gov.au

Age groups most at risk

Suicide affects people of all ages, except young children. The highest proportion of deaths by suicide occurs among young and middle-aged people, and the proportion decreases in progressively older age groups (Figure 3). In 2018, the median age at death

for suicide was 44, which was considerably lower than the median age for all deaths (82 years).

Age-specific death rates show how suicide manifests across age groups by relating the number of deaths to the size and structure of the underlying population. Age-specific suicide rates for males are consistently higher than those for females and reflect the higher number of deaths by suicide that occur among males in each age group (Figure 3).

Middle-aged

Age-specific death rates are high between the ages of 35 and 59 for both males and females. More than half of all deaths by suicide in 2018 (55%) occurred in people aged 30–59 (1,669 deaths). Males aged 45–49 accounted for the highest proportion of male deaths by suicide (10%, or 230 of 2,320 deaths). For females the highest proportion of deaths by suicide occurred in the 40–44 age group (10%, or 75 of 726 deaths).

Children and adolescents

Deaths of children by suicide is a sensitive issue. The number of deaths of children attributed to suicide may be influenced by coronial processes and considerations as to whether the deceased had the developmental maturity to understand the consequences of their actions or to form an intent to die (AIHW: Harrison & Henley 2014). Deaths by suicide are reported only for 5–17 year olds; there have not been any deaths by suicide recorded in children aged under 5.

In 2018, suicide was the leading cause of death among Australian children and adolescents aged 5–17. This is in part explained by low rates of other causes of death, reflecting Australia's high standard of living and high life expectancy. Deaths by suicide among children and adolescents (aged 5–17) are rare (100 deaths in 2018) with the majority occurring in those aged 15–17 (78% in 2018).

See Health of children and Health of young people.

Older Australians

While males aged 85 and over accounted for 2.7% of male deaths by suicide, they had the highest age-specific rate of suicide (32.9 per 100,000 population). The age-specific rate for females aged 80–84 was 9.0 per 100,000 population—the second highest age-specific suicide rate behind those aged 40–44 and equal with females aged 50–54. This indicates that deaths by suicide have a significant impact on these older age groups.

See Health of older people.

Regional variation

The number and rate of deaths by suicide differs between states and territories and across different regions of Australia.

State and territory

In 2018, the age-standardised suicide rate ranged from 9.1 per 100,000 population in Victoria to 19.5 per 100,000 in the Northern Territory (Figure 4). In all states and territories where male and female age-standardised suicide rates were reported, male rates were higher than female rates. New South Wales and Queensland recorded the most deaths by suicide (899 and 786, respectively) while the Northern Territory and the Australian Capital Territory had the lowest number of deaths by suicide (47 each).

Figure 4: Age-standardised suicide rates, by sex, by state and territory, 2018

View by
Age-standardised rate (per 100,000 population)
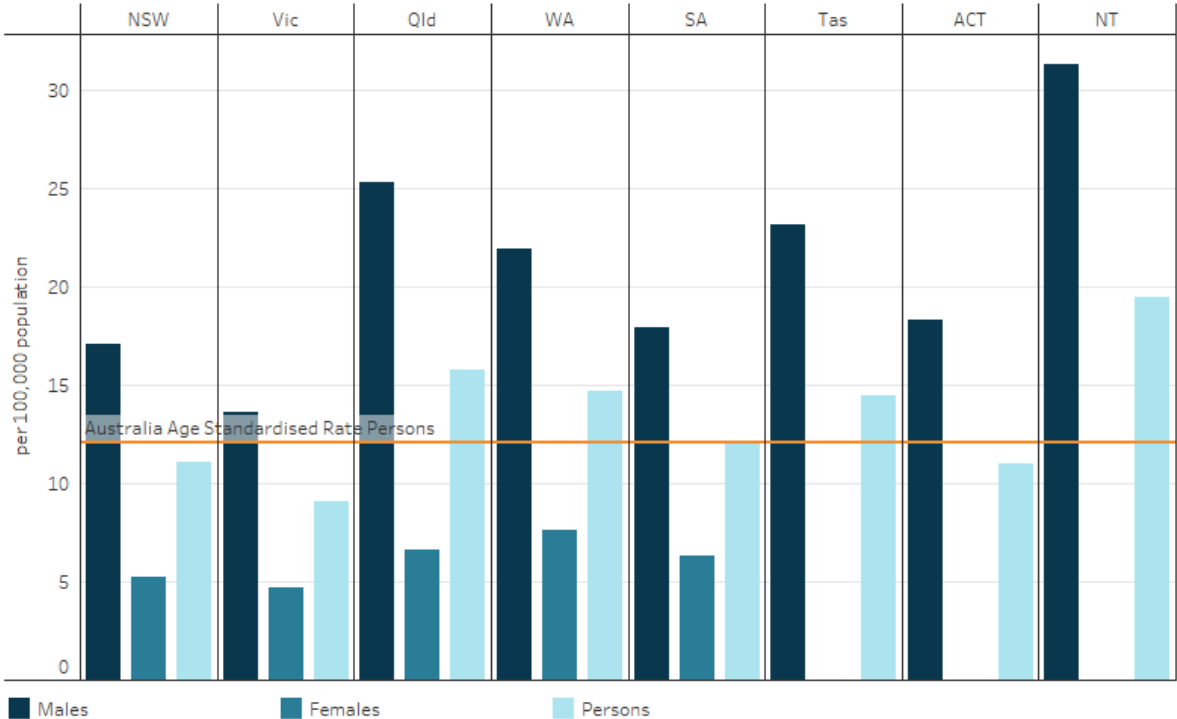
Notes
1. Causes of death statistics for states and territories are reported based on the state or territory of usual residence of the deceased, regardless of where in Australia the death occurred and was registered. Deaths of persons usually resident overseas which occur in Australia are included in the state or territory in which their death was registered.
2. Age-standardised rates for females in Tasmania, the Australian Capital Territory and the Northern Territory are not available for publication because they cannot be presented for counts of less than 20.
3. Care needs to be taken when interpreting data derived from Victorian coroner-referred deaths including suicide.
4. For more information see Intentional self-harm, key characteristics and the explanatory notes from the data source.
Source: ABS 2019.
https://www.aihw.gov.au

Region

The ABS Causes of Death data set releases data based on Greater Capital City Statistical Areas. These include the population within the urban area of the city, as well as those who regularly socialise, shop or work within the city, but live in small towns and rural

areas surrounding the city. Within each state and territory (except the Australian Capital Territory), the area not defined as being part of the Greater Capital City is represented by a Rest of State/Territory region.

In 2018, the age-standardised suicide rate was higher in all Rest of State/Territory areas than in the corresponding Greater Capital City. The Rest of Northern Territory area recorded the highest age-standardised rate at 27.1 per 100,000 population. This was followed by Rest of State areas in Western Australia (20.1), Queensland (17.6) and Tasmania (16.4). The highest rate for Greater Capital Cities was 14.2 per 100,000 population in Greater Darwin, followed by Greater Brisbane (13.8).

Aboriginal and Torres Strait Islander people

In 2018, 169 Aboriginal and Torres Strait Islander people died by suicide. Age-standardised rates of Indigenous deaths by suicide have increased over time, from 20.2 per 100,000 persons in 2009–2013 to 23.7 per 100,000 persons in 2014–2018—almost double the rate for non-Indigenous Australians in 2014–18 (12.3 per 100,000 persons). Suicide is also a pronounced issue for Indigenous youth—in the 5 years from 2014 to 2018, suicide rates were highest for those aged 25–34 (47.1 per 100,000) and 15–24 (40.5 per 100,000).

Suicide method

Restricting access to methods of suicide is a key element of suicide prevention; therefore, a detailed understanding of the methods of suicide used in the community is required (WHO 2014). The information presented here is intended to provide an understanding of the methods of suicide used by males and females in Australia. This information may be distressing for some people.

In 2018, both males and females were most likely to die of suicide by *hanging, strangulation or suffocation* (63% of male and 49% of female suicide deaths). *Poisoning by drugs* was more common among females than males, accounting for almost a third (29%) of female deaths by suicide and 8.2% of male suicide deaths.

Hospitalisations for intentional self-harm

There were an estimated 33,100 cases of hospitalised injury due to intentional self-harm in 2016–17, making up 7% of all hospitalised injury cases (AIHW: Pointer 2019). See Injury and Hospital care.

About hospital data

Hospital data on admitted patients can provide limited information on suicide attempts and intentional self-harm (where people have intentionally hurt themselves but not necessarily with the intention of dying). Currently, admitted patient care data does not effectively

distinguish between acts of self-harm with no intention of suicide (for example, self-mutilation) and acts of self-harm with suicidal intent (AIHW: Pointer 2019).

Sex and age differences

While males are more likely than females to die by suicide, females are more likely to be hospitalised for intentional self-harm (1.75 times); in 2016–17 females made up almost two-thirds (64%) of intentional self-harm hospitalisation cases (AIHW: Pointer 2019).

In 2016–17, the age-specific rates of hospitalised injury cases for intentional self-harm peaked among females aged 15–19 at 686 cases per 100,000—nearly 4 times the rate for males in the same age group (180 per 100,000). The age-specific rates for females aged 0–14 and 15–24 rose markedly between 2007–08 and 2016–17, from 19 and 317 cases per 100,000 respectively in 2007–08 to 49 and 512 cases per 100,000 in 2016–17 (Figure 5).

Type of injury

The information presented here is intended to provide an understanding of the methods of intentional self-harm used by males and females in Australia. This information may be distressing for some people.

In 2016–17, *Intentional self-poisoning* was the most common cause of intentional self-harm requiring hospitalisation, accounting for 86% of female cases and 77% of male cases (AIHW: Pointer 2019). *Intentional self-harm by sharp object* was the second most common cause of intentional self-harm injury resulting in hospitalisation, for both males (13%) and females (10%) (AIHW: Pointer 2019).

Suicidal ideation, plans and attempts

The National Survey of Mental Health and Wellbeing (2007) estimated that, at some point in their lives, 1 in 8 (13%) Australians aged 16–85 had had serious thoughts about taking their own life; 1 in 25 (4.0%) made a suicide plan, and 1 in 33 (3.3%) had attempted suicide. This is equivalent to more than 2.1 million Australians having thought about taking their own life, more than 600,000 making a suicide plan and more than 500,000 making a suicide attempt during their lifetime (Slade et al. 2009).

The second Australian Child and Adolescent Survey of Mental Health and Wellbeing, conducted between 2013 and 2014, captured information about self-harming activity from young people aged 12–17 (Lawrence et al. 2015). Around 1 in 10 young people aged 12–17 reported having ever self-harmed (10.9%, equivalent to 186,000 young people) and about three-quarters (73.5%) of these had harmed themselves in the previous 12 months. Around 1 in 13 young people aged 12–17 had seriously considered attempting suicide in the previous 12 months (7.5%, equivalent to 128,000 young people).

Both of these national surveys relied on self-reported responses, and therefore should be interpreted with caution as respondents may not feel comfortable commenting on suicidal behaviours.

It is important to remember that although suicidal thoughts are relatively common, the majority of people who experience suicidal ideation do not go on to take their lives.

If you, or someone you know, is struggling with thoughts of suicide or suicide-related behaviour, help is available.

Where do I go for more information?

If this report has raised any issues for you, these services can help:

- Lifeline 13 11 14
- Suicide Call Back Service 1300 659 467
- Kids Helpline 1800 55 1800
- MensLine Australia 1300 78 99 78
- Beyond Blue 1300 22 4636.

Crisis support services can be reached 24 hours a day.

For more statistical information on suicide and intentional self-harm, see:

- General Record of Incidence of Mortality (GRIM) data
- Mortality over regions and time (MORT) books
- Suicide and hospitalised self-harm in Australia: trends and analysis
- Admitted patient care 2017–18
- Trends in hospitalised injury, Australia 2007–08 to 2016–17

Visit Suicide and intentional self-harm for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019. Causes of death, Australia, 2018. ABS cat. no. 3303.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare): Harrison JE & Henley G 2014. Suicide and hospitalised self-harm in Australia: trends and analysis. Injury research and statistics series no. 93. Cat. no. INJCAT 169. Canberra: AIHW.

AIHW 2019. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease Study series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW: Pointer SC 2019. Trends in hospitalised injury, Australia 2007–08 to 2016–17. Injury research and statistics series no. 124. Cat. no. INJCAT 204. Canberra: AIHW.

BITRE (Bureau of Infrastructure, Transport and Regional Economics) 2019. Australian Road Deaths database. Canberra: Department of Infrastructure, Transport, Cities and Regional Development.

Lawrence D, Johnson S, Hafekost J, Boterhoven de Haan K, Sawyer M, Ainley J et al. 2015. The mental health of children and adolescents: report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. Canberra: Department of Health.

Slade T, Johnston A, Teesson M, Whiteford H, Burgess P, Pirkis J et al. 2009. The mental health of Australians 2: report on the 2007 National Survey of Mental Health and Wellbeing. Canberra: Department of Health and Ageing.

WHO (World Health Organization) 2014. Preventing suicide: a global imperative. Geneva, Switzerland.

What is health?

Health can be viewed as the presence or absence of disease or medically measured risk factors in an individual. However, more broadly, health is 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO 1946). Health reflects the complex interactions of a person's genetics, lifestyle and environment. Generally, a person's health depends on 2 things: determinants (factors that influence health) and interventions (actions taken to improve health, and the resources required for those interventions).

Health is fundamental to an individual's wellbeing. It reflects a person's relative ability to effectively engage with society—improved health outcomes support better economic (WHO 2019a), educational (Suhrcke & Nieves 2011) and social (Burton 2010) outcomes and conditions (see Social determinants of health and Health and welfare links).

Australians are generally seen to enjoy good health and to have an effective health system. How do we know this? We compare Australia with other OECD countries and we use the Australian Health Performance Framework to assess the health of our population and health system. It outlines health indicators that describe specific elements of our health or aspects of our health system's performance; it also compares data for different population groups, different geographic regions, and internationally. The Framework includes the domains of health status, determinants of health, and the health system (see also the Health system domain in Australia's health snapshots).

Measuring health

Many measures can be used to describe the health of an individual or a population. Some commonly used measures are listed in Table 1 below and presented in How healthy are Australians?.

Table 1: Common measures of health status

Life expectancy	The number of years of life, on average, remaining for an individual at a particular age if death rates do not change. The most commonly used measure is life expectancy at birth.
Mortality	The number of deaths in a population in a given period.
Morbidity	Ill health in an individual and levels of ill health within a population (often expressed through incidence, prevalence and comorbidity measures—see Glossary).
Disability-adjusted life year (DALY)	One year of healthy life lost due to illness and/or death. DALYs are calculated as the sum of the years of life lost due to premature death and the years lived with disability due to disease or injury.
Health-adjusted life expectancy	The average length of time an individual at a specific age can expect to live in full health; that is, time lived without the health consequences of disease or injury.
Self-assessed health status	An individual's own opinion about how they feel about their health, their state of mind and their life in general.

These measures are useful to observe trends over time, compare different population groups and geographic regions, and monitor certain health conditions. Health measures allow differences in outcomes to be identified. These measures are discussed in more detail in the Health status and Health of population groups domains in Australia's health snapshots.

What influences health?

'Health determinants' are the many risk and protective factors that influence an individual's health. Figure 1 divides determinants into 4 groups, where the main direction of influence is from contextual factors (broad features of society and

environmental factors) through to more direct influences (such as blood pressure and body weight).

Health outcomes affect and are affected by the social determinants of health, a term that encompasses not only social but economic, political, cultural and environmental determinants. Essentially, these are the conditions into which people are born, grow, live, work and age (WHO 2019b).

All of these social determinants interact with the physical and psychological make-up of individuals. Additionally, the factors within each box in Figure 1 can interact and are closely related to each other. See the Determinants of health domain in Australia's health snapshots for more information.

Figure 1: Framework for determinants of health
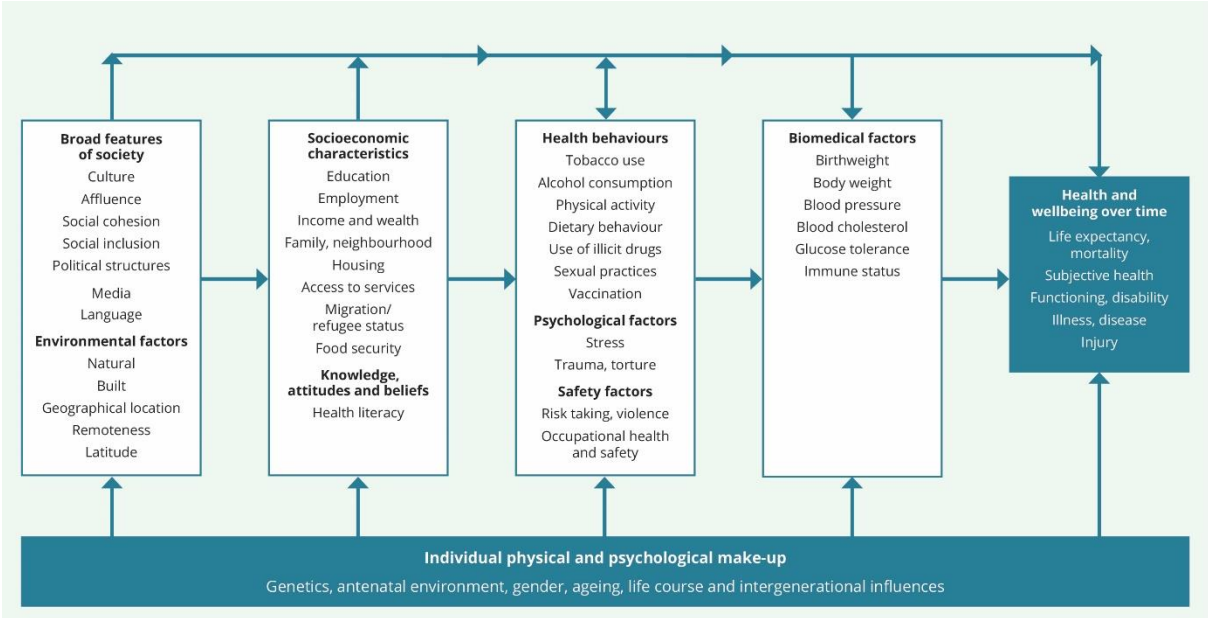
Health system interventions

The health system supports the health of the nation by treating illness, preventing disease and maintaining people's health. Health system overview describes how Australia's health system works. A functioning health system ensures that people remain as healthy as possible for as long as possible. Australia's health system facilitates this by providing services such as hospital care and primary health care and access to preventative measures such as immunisation and vaccination. Medical research and health promotion are also crucial parts of the system which supports people's health. See also the Health system domain in Australia's health snapshots.

Australian Charter of Healthcare Rights

The [Australian Charter of Healthcare Rights](#) (ACSQHC 2017) describes the 7 key rights of patients and consumers who seek or receive health care:

- Access—the right to access health care services and treatment that meet their needs

- Safety—the right to safe and high-quality health care in a safe environment

- Respect—the right to be treated as an individual, with dignity and respect, and to have culture, identity, beliefs and choices recognised and respected

- Partnership—the right to be involved in open and honest communication, make decisions with health care providers, and to choose who to include in planning and decision making

- Information—the right to clear information about conditions and services, and to assistance when needed to understand health information

- Privacy—the right to privacy and confidentiality of personal information

- Give feedback—the right to comment on care, to have concerns dealt with transparently and in a timely manner, and to share experiences and participate to improve quality of care and health services (ACSQHC 2017).

The application of the Charter to the health system is informed by 3 guiding principles: the right of everyone to access health care; the commitment of the Australian Government to international agreements recognising the right to health; and the acknowledgement of and respect for the different cultures and ways of life in Australian society.

Where do I go for more information?

For more information on health definitions see:

- [World Health Organization](#)

References

ACSQHC (Australian Commission on Safety and Quality in Health Care) 2017. [Australian Charter of Healthcare Rights](#). Sydney: ACSQHC. Viewed 15 November 2019.

Burton J 2010. [WHO healthy workplace framework and model: background and supporting literature and practice](#). Geneva: WHO. Viewed 18 November 2019.

Suhrcke M & Nieves C 2011. [The impact of health and health behaviours on educational outcomes in high-income countries](#): a review of the evidence. Geneva: WHO. Viewed 18 November 2019.

WHO (World Health Organization) 1946. Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19–22 June, 1946. New York: WHO.

WHO 2019a. Health and development. Geneva: WHO. Viewed 18 September 2019.

WHO 2019b. Social determinants of health. Geneva: WHO. Viewed 18 September 2019.

Determinants of health

A person's health is closely linked to the conditions in which they live and work. Factors such as socioeconomic position, educational attainment and lifestyle behaviours can affect the health of individuals and communities.

Alcohol risk and harm

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/alcohol-risk-and-harm

Alcohol has a complex role in society. Consumption patterns reflect different attitudes towards alcohol. Harmful levels of consumption are a major health issue, associated with increased risk of chronic disease, injury and premature death. Most Australians drink alcohol at levels that cause few harmful effects. However, those who do drink at risky levels increase the risk of harm to themselves, their families, bystanders and the broader community (NHMRC 2009).

How many people consume alcohol?

The 2019 National Drug Strategy Household Survey (NDSHS) reported an estimated 4 in 5 (79%) people aged 18 and over had consumed alcohol in the previous 12 months; this is a decline from 81% reported in 2016 (AIHW 2017; AIHW 2020b). Similarly, results from the National Health Survey (NHS) 2017–18 showed that an estimated 4 in 5 (79%) Australians aged 18 and over had consumed alcohol in the previous 12 months (ABS 2019b).

Data sources

A number of nationally representative data sources are available to analyse recent trends in alcohol consumption. The NDSHS and NHS both collected data on alcohol consumption among individuals. The ABS (Australian Bureau of Statistics) also provides estimates of apparent consumption of alcohol based on availability of alcoholic beverages in Australia, but does not account for factors such as storage or waste (ABS 2019a). Data presented on this page on alcohol consumption among individuals are from the 2019 NDSHS and 2017–18 NHS, as these were the latest available data.

Comparisons of data from the NDSHS and NHS show variations in estimates for alcohol consumption but similar trends.

For more information on the consumption of alcohol from the 2019 NDSHS, including drinking behaviours, see National Drug Strategy Household Survey 2019.

Trends in alcohol consumption

The overall volume of alcohol available for consumption in Australia in 2017–18 was 191 million litres of pure alcohol—the equivalent of 9.51 litres per person aged 15 and over. This was a slight increase on the 9.48 litres available in the previous year, but the overall

per capita trend over the last decade shows a decline of around 1.1% per year (10.8 litres per person in 2007–08). Over the last 50 years, the levels of apparent consumption of different alcoholic beverages have changed substantially, with a decrease in the proportion of beer and total alcohol consumed (per capita), and an increase in wine and spirits (Figure 1) (ABS 2019a).

Figure 1: Apparent consumption of pure alcohol, per capita, year ended 30 June 1968 to 2018
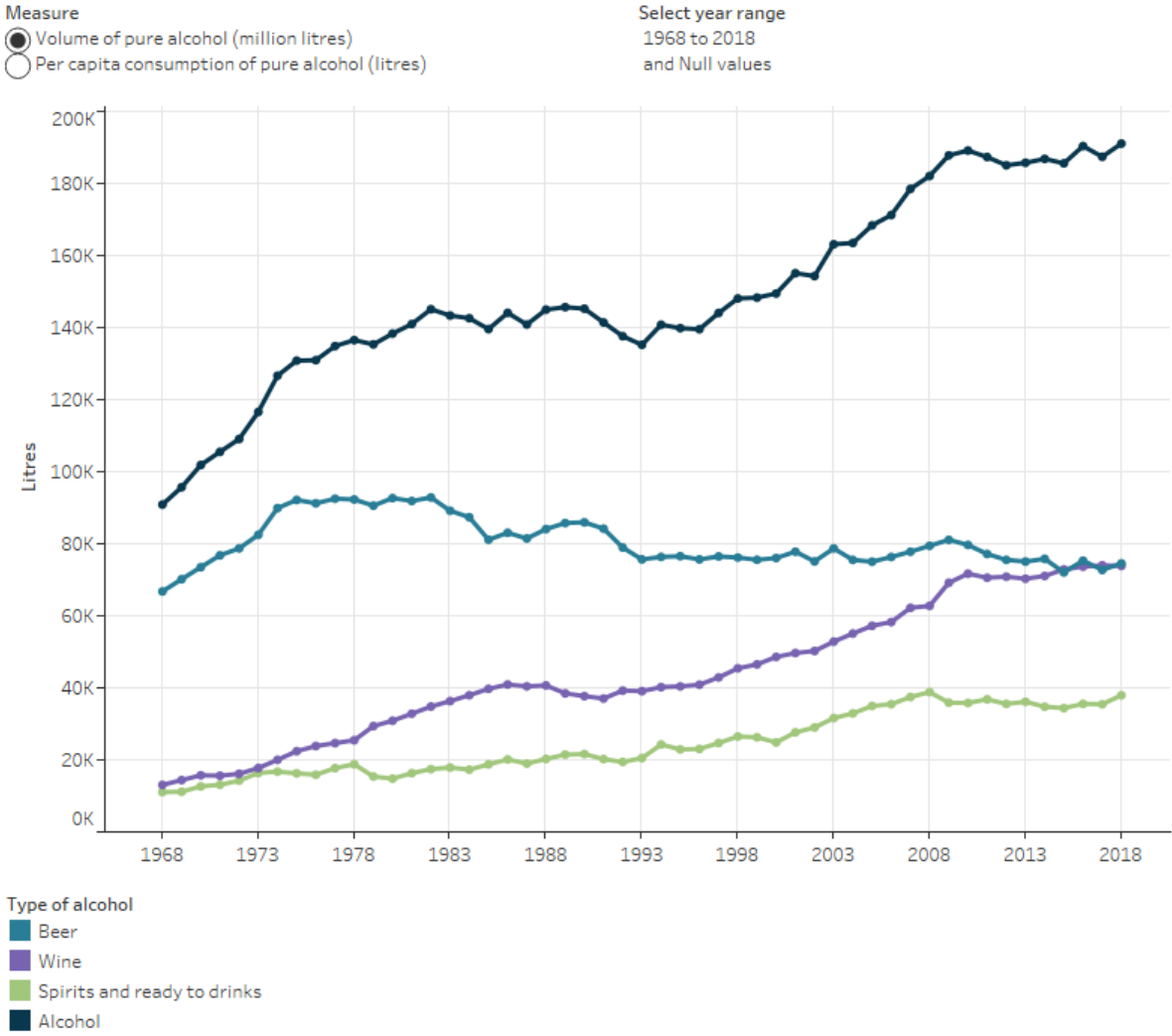
Source: ABS 2019a.
http://www.aihw.gov.au/

Drinking behaviours

The NDSHS reported changes in drinking patterns between 2001 and 2019 including that:

- the proportion of adults abstaining from alcohol (not consuming alcohol in the previous 12 months) increased from 15.5% in 2001 to 19.5% in 2016 and rose to 21% in 2019 (Figure 2a)

- in 2019, just under 3 in 4 people aged 14–17 abstained from drinking alcohol—more than double the proportion in 2001 (32% in 2001, 73% in 2019) (Figure 2a). A similar pattern was seen for people in their 20s with the proportion of abstainers also more than doubling, from 8.9% in 2001 to 22% in 2019. In contrast, for people aged 70 and over, the proportion abstaining has declined (from 32% in 2001 to 28% in 2019)
- the proportion of adults aged 18 and over exceeding the lifetime risk guidelines declined from 21% in 2001 to 17.6% in 2019. The proportion exceeding the single occasion risk guidelines (at least once in the past year) also declined from 43% in 2001 to 38% in 2019. There was little change in the proportions exceeding either guideline between 2016 and 2019 (AIHW 2020b).

Similar changes to drinking patterns were reported by the NHS between 2014–15 and 2017–18 including that:

- fewer young people aged 15–17 were drinking alcohol and the proportion abstaining had increased, but this change was not statistically significant (66% in 2014–15 and 71% in 2017–18) (Figure 2b)
- the proportion of adults aged 18 and over abstaining from alcohol has remained relatively stable (11% in 2014–15 and 12% in 2017–18 after adjusting for age) (Figure 2b) (ABS 2019c).

Figure 2a: National Drug Strategy Household Survey, proportion of people aged 14–17 and 18 and over who abstained from drinking alcohol and the proportion aged 18 and over who exceeded lifetime and single occasion (at least yearly) alcohol risk guidelines, 2001 to 2019

Click to view National Health Survey data

Alcohol risk
- Exceeded lifetime risk guidelines (aged 18 and over)
- Exceeded single occasion risk guidelines (aged 18 and over) (at least yearly)
- Abstained from drinking alcohol (aged 18 and over)
- Abstained from drinking alcohol (aged 14–17)
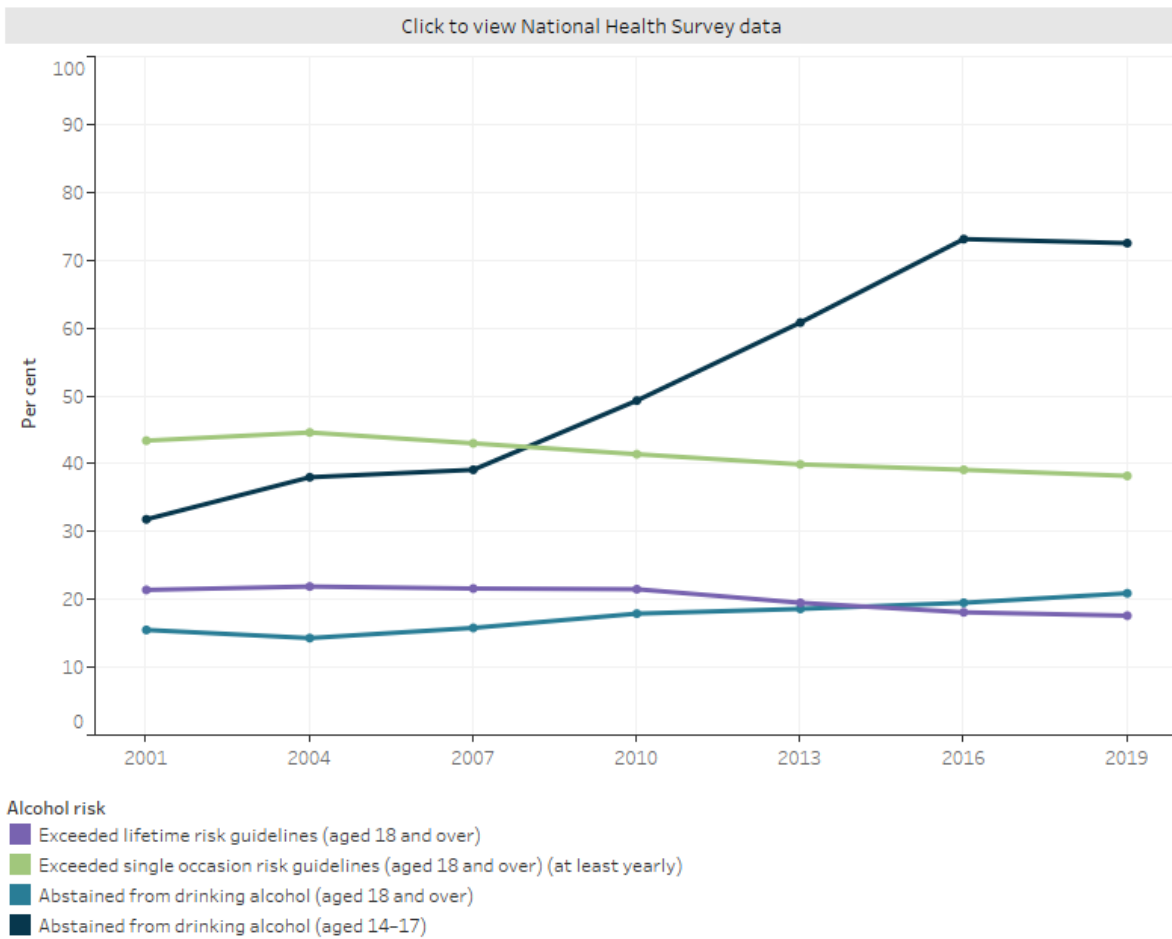
[Notes]

Source: NDSHS 2019.
http://www.aihw.gov.au/

In 2019, men aged 18 and over were at higher risk of alcohol-related harm than women from drinking at levels that exceed the lifetime risk guidelines (26% of men compared with 9.9% women)—this was similar to 2016 (26% and 10.4%, respectively). Men aged 18 and over were also at higher risk of injury than women from drinking at levels that exceed the single occasion risk guidelines at least once in the past year (48% of men compared with 29% of women)—this was similar to 2016 (49% and 29%, respectively) (AIHW 2020b).

Results from the 2017–18 NHS similarly show that men were more likely than women to exceed the lifetime risky drinking guidelines (24% and 8.8%, respectively) and the single occasion risky drinking guidelines in the previous 12 months (54% and 31%, respectively) (ABS 2019b). These results were similar to those from the 2014–15 NHS (ABS 2018b).

In 2019, 15.6% of people aged 18 and over reported drinking 11 or more drinks on 1 occasion at least once a year—this was similar to 16.2% in 2016 (AIHW 2020b). Similarly,

based on data from the 2017–18 NHS, an estimated 19% of people aged 18 and over consumed 11 or more drinks on at least 1 occasion in the last 12 months (ABS 2019b).

Australian Guidelines to Reduce Health Risks from Drinking Alcohol

The [National Health and Medical Research Council (NHMRC)](#) publishes 4 guidelines for reducing the health risks of drinking alcohol. The data for alcohol risks on this page are reported against the following 2 guidelines:

- Guideline 1 (lifetime risk): For healthy men and women, drinking no more than two standard drinks on any day reduces the risk of alcohol-related harm (such as chronic disease or injury over a lifetime

- Guideline 2 (single occasion risk): For healthy men and women, drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion (NHMRC 2009).

- The data presented on this page are based on the 2009 Australian guidelines to reduce health risks from drinking alcohol. In December 2019, the NHMRC released revised draft guidelines which are expected to be finalised in the third quarter of 2020. The 2009 Alcohol Guidelines remain NHMRC's current advice until the review of the guidelines is finalised.

Age

Since 2001, trends in single occasion risky drinking (at least once a month) have followed a similar pattern to lifetime risk, with risky drinking declining among younger age groups (18–39) but increasing among older age groups (40 and over). The proportion of people exceeding the lifetime risk guidelines has remained stable for older age groups since 2001, while for younger age groups, it has declined (Figure 3) (AIHW 2020b).

In 2019, young people aged 18–24 remained the group most likely to consume alcohol at levels which exceed single occasion risk guidelines at least once a month (41%). However, they were one of the least likely groups to drink at levels which exceed lifetime risk guidelines—this was highest among adults aged 40–49 and 50–59 (both 21%) (Figure 3) (AIHW 2020b).

Figure 3: National Drug Strategy Household Survey, proportion of people who exceeded lifetime and single occasion (at least monthly) alcohol risk guidelines, by age group, 2001, 2016 and 2019
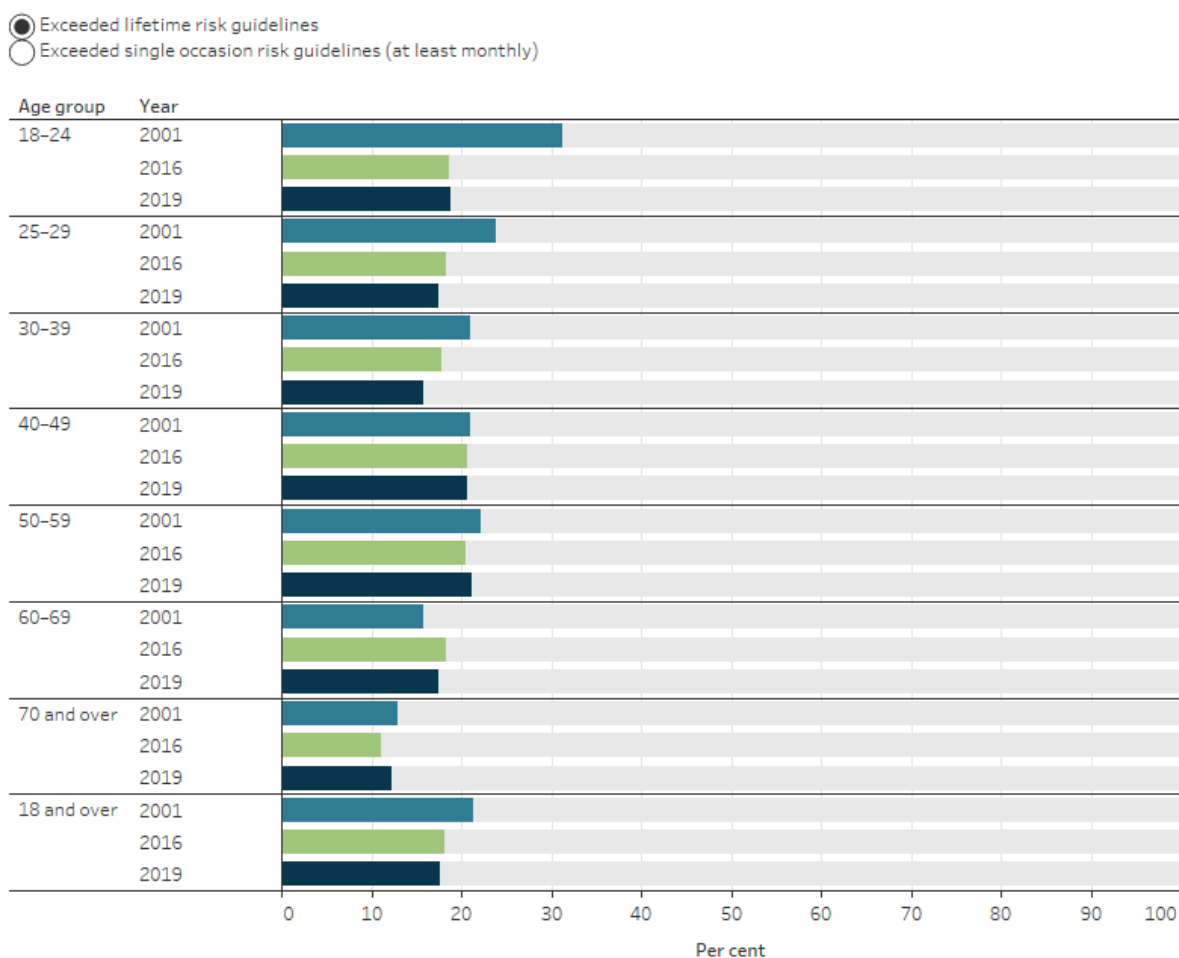
⬤ Exceeded lifetime risk guidelines
◯ Exceeded single occasion risk guidelines (at least monthly)

[Notes]

Source: NDSHS 2019.
http://www.aihw.gov.au/

Variation between population groups

See Health risk factors among Indigenous Australians for information on alcohol risk and harm among Aboriginal and Torres Strait Islander Australians.

Although there has been some reduction in risky drinking behaviour by some people, the harmful consumption of alcohol is more common in certain subsets of the population.

Some population groups drink alcohol in quantities that put them at risk of single occasion or lifetime harm more often than others. For example, analysis of the 2019 NDSHS showed that exceeding lifetime risk guidelines was more commonly reported by people living in *Outer regional* and *Remote and very remote* areas, people whose main language spoken at home is English, people living in the highest socioeconomic area and

people who are employed (Figure 4). See also Health across socioeconomic groups and Rural and remote health.

Figure 4: Proportion of people who exceeded single occasion (at least monthly) and lifetime risk guidelines, aged 18 and over, by selected demographic characteristics, 2019
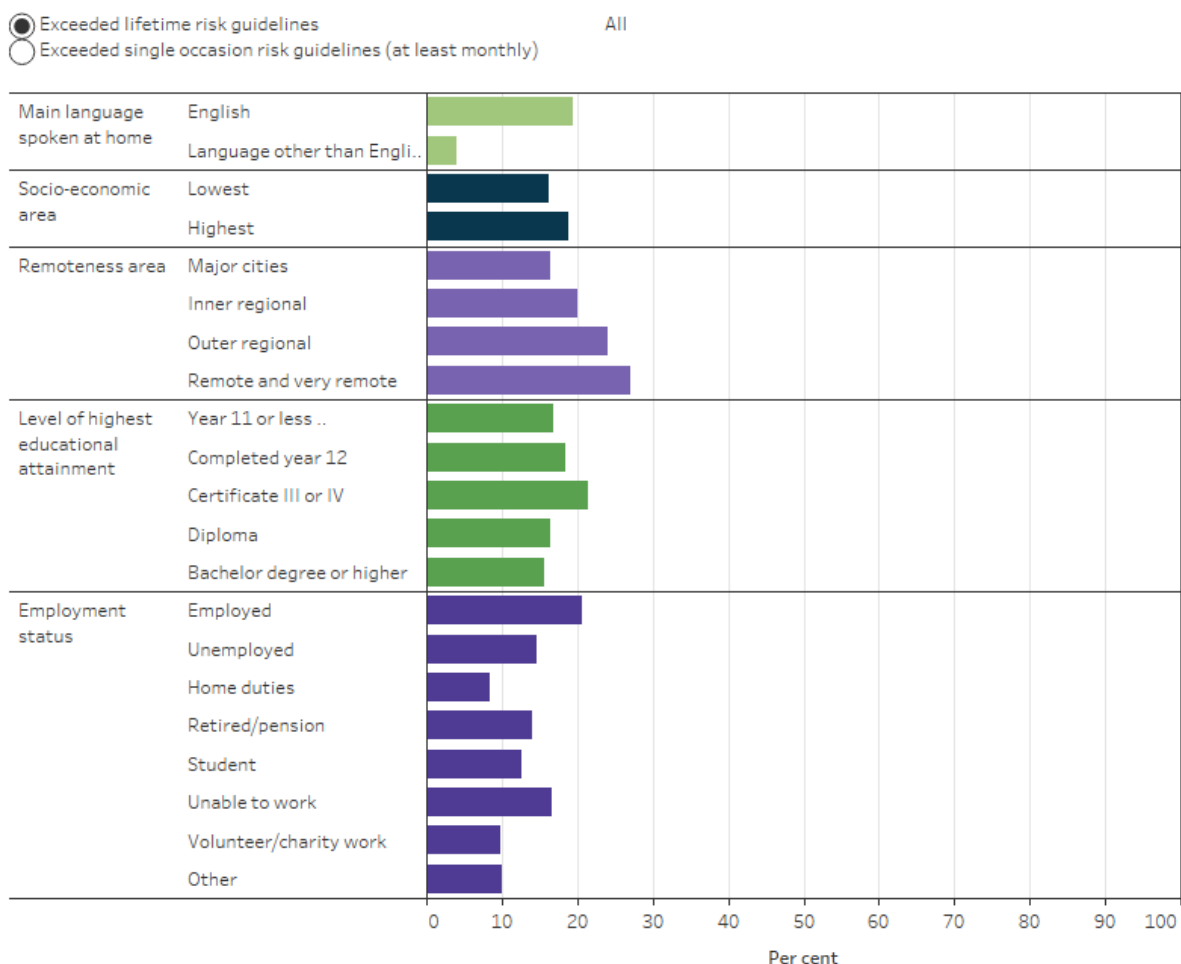
[Notes]

Source: NDSHS 2019.
http://www.aihw.gov.au/

Health impact

Deaths

Alcohol-induced deaths are defined as those that can be directly attributed to alcohol use, as determined by toxicology and pathology reports (ABS 2018a).

In 2017, the alcohol-induced death rate was 5.1 per 100,000 population (1,366 deaths) and it has remained stable since a low of 4.5 deaths per 100,000 in 2012. In 2017, alcohol was mentioned as a contributory cause in an additional 2,820 deaths. This

demonstrates that people were twice as likely to have alcohol certified at death as a contributory factor rather than to have died from an alcohol-induced death (ABS 2018a).

Burden of disease

Alcohol was the fifth-highest risk factor contributing to disease burden in Australia in 2015. Alcohol use was estimated to be responsible for 4.5% of the total burden of disease and injury, based on estimates from the Australian Burden of Disease Study 2015.

For adolescents and young adults, non-fatal burden was the main contributor to alcohol attributed burden, while for those aged 55 and over fatal burden was the main contributor.

The burden from alcohol disorders was higher in males (2.0%) than females, ranking 13th in total male burden and outside the top 20 for females. Alcohol use was the leading risk factor contributing to disease burden for males aged 15–24 (13%) and 25–44 (12%) (AIHW 2019a). See Burden of disease.

Hospitalisations

The number of hospitalisations in Australia with a drug-related principal diagnosis of alcohol use increased from 64,200 hospitalisations in 2013–14 to 72,300 in 2017–18 (or from 275.8 to 291.9 hospitalisations per 100,000 population). As a proportion this equates to a decline from 55% of drug-related hospitalisations in 2013–14 to 53% in 2017–18 (AIHW 2019b). The decrease in proportion of alcohol-related hospitalisations is due to an increase in non-alcohol drug-related hospitalisations in 2017–18.

See Illicit drug use for information on drug-related hospitalisations where alcohol was not the drug.

Treatment

The number of closed treatment episodes provided in publicly funded alcohol and other drug treatment agencies across Australia for a person's own drug use (where alcohol was the principal drug of concern) fell between 2012–13 and 2016–17 (from 63,800 to 62,400) but increased between 2017–18 and 2018–19 (from 70,900 to 74,700). As a proportion this equates to a decline from 41% of total episodes of treatment in 2012–13 to 36% in 2018–19 (AIHW 2020a). See Alcohol and other drug treatment services.

Social impact

Alcohol misuse was estimated to cost Australia around $14 billion in 2010 ($6.0 billion in lost productivity), followed by traffic accidents ($3.7 billion), the criminal justice system ($2.9 billion) and costs to the health system ($1.7 billion) (Manning et al. 2013). However, these costs do not include the negative impacts on others associated with someone

else's drinking (such as violence, poor productivity, disturbing the peace), estimated at $6.8 billion in 2008 (Laslett et al. 2010).

Where do I go for more information?

For more information on alcohol risk and harm, see:

* [Alcohol, tobacco & other drugs in Australia](#)
* [National Drug Strategy Household Survey 2019](#)
* [Alcohol and other drug treatment services in Australia 2018–19](#)
* [Australian Burden of Disease Study 2015: Interactive data on risk factor burden](#)
* Australian Bureau of Statistics [National Health Survey: First Results, 2017–18](#)

Visit [Alcohol](#) for more on this topic

References

ABS (Australian Bureau of Statistics) 2018a. [Causes of death, Australia, 2017](#). ABS cat. no. 3303.0. Canberra: ABS.

ABS 2018b. [National Health Survey: First Results, 2014–15](#). ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019a. [Apparent consumption of alcohol, Australia, 2017−18](#). ABS cat. no. 4307.0.55.001. Canberra: ABS.

ABS 2019b. [National Health Survey: First Results, 2017–18](#). ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019c. National Health Survey, 2017–18. Customised report. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2017. [National drug strategy household survey 2016: Detailed findings](#). Drug statistics series no. 31. Cat. no. PHE 214. Canberra: AIHW.

AIHW 2019a. [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015](#). Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. [Alcohol, tobacco and other drugs in Australia report](#). Web Report. Cat no. PHE 221. Canberra: AIHW.

AIHW 2020a. [Alcohol and other drug treatment services in Australia 2018–19](#). Web report. Cat. No. HSE 243. Canberra: AIHW.

AIHW 2020b. [National drug strategy household survey 2019](#). Drug statistics series no. 32. Cat. no. PHE 270. Canberra: AIHW.

Laslett A, Catalano P, Chikritzhs T, Dale C, Doran C, Ferris J et al. 2010. The range and magnitude of alcohol's harm to others. Fitzroy, Victoria: AER Centre for Alcohol Policy Research, Turning Point Alcohol and Drug Centre, Eastern Health.

Manning M, Smith C & Mazerolle P 2013. [The societal costs of alcohol misuse in Australia](). Trends & issues in crime and criminal justice no. 454. Canberra: Australian Institute of Criminology.

NHMRC (National Health and Medical Research Council) 2009. [Australian Guidelines to Reduce Health Risks from Drinking Alcohol](). Canberra: NHMRC.

Biomedical risk factors

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/biomedical-risk-factors

Biomedical risk factors are bodily states that have an impact on a person's risk of disease. This page focuses on 3 biomedical risk factors: blood pressure, blood lipids and blood glucose—elevated levels of which have been directly linked to specific health outcomes such as cardiovascular disease, including coronary heart disease and stroke, chronic kidney disease and diabetes. Obesity, which is also a biomedical risk factor, is discussed in Overweight and obesity. The information on this page is based mostly on the Australian Bureau of Statistics (ABS) 2011–12 Australian Health Survey, 2014–15 National Health Survey and 2017–18 National Health Survey.

The most recent national data on blood lipid and blood glucose levels were collected in 2011–12, and subsequent national health surveys have relied on self-reported data. More surveys are needed to continue to monitor the levels of these risk factors in the Australian population over time. The (ABS) is commencing in 2021 a new Intergenerational Health and Mental Health Survey which will include measurement of biomedical risk factors.

High blood pressure

High blood pressure—also known as hypertension—is a risk factor for chronic conditions, including heart failure, chronic kidney disease and stroke. In 2015, it was estimated that high blood pressure contributed 65% of hypertensive heart disease burden, 43% of coronary heart disease burden, 41% of stroke burden, 38% of chronic kidney disease burden, and 32% of atrial fibrillation and flutter burden (AIHW 2019).

High blood pressure contributed 5.8% of the total burden of disease in Australia in 2015 and 21% of high blood pressure burden is due to a diet high in sodium (AIHW 2019). See Burden of disease.

In 2017−18, an estimated 34% of adults had high blood pressure. This included 23% who had uncontrolled high blood pressure, and 11% whose blood pressure was controlled with medication (ABS 2019). The proportion of Australian adults with high blood pressure has remained stable since 2011–12.

Abnormal blood lipids

Abnormal levels of blood lipids, such as cholesterol and triglycerides—also known as dyslipidaemia—can lead to the build-up of fatty deposits in the blood vessels and

contribute to the risk of cardiovascular disease. In 2015, it was estimated that high cholesterol contributed 37% of coronary heart disease burden and 15% of stroke burden. High cholesterol levels contributed 3.0% of the total burden of disease in Australia in 2015 (AIHW 2019). See Burden of disease.

Based on self-reported data from the National Health Survey in 2017–18, an estimated 1.5 million adults (7.8%) reported that they had high blood cholesterol levels (ABS 2019). This was lower than the self-reported prevalence in 2014–15, where 9.1% of adults (1.6 million) reported high blood cholesterol levels (ABS 2017).

Self-reported data underestimates the true impact of abnormal blood lipids in the population, as many people are unaware they have abnormal levels. In 2011–12, blood cholesterol levels were measured, via a blood test, to ascertain the prevalence of abnormal blood lipids in the Australian population. Based on these data, an estimated 2 in 3 (65%, or 8.4 million) Australian adults had abnormal blood lipid levels. This included 59% with uncontrolled blood lipids and 6.7% with normal blood lipid levels who were taking lipid-modifying medication (ABS 2014).

Impaired glucose regulation

Impaired glucose regulation is a condition where blood glucose levels are higher than normal, but not high enough to be regarded as type 2 diabetes. People with impaired glucose regulation are at increased risk of diabetes and cardiovascular disease. High blood plasma glucose was responsible for the entire burden of each type of diabetes, 60% of chronic kidney disease burden and 6.7% of coronary heart disease burden. High blood plasma glucose (including intermediate hyperglycaemia and diabetes) contributed 4.7% of the disease burden in Australia in 2015 (AIHW 2019). See Burden of disease.

Based on self-reported data from the National Health Survey in 2017–18, an estimated 99,700 adults reported that they had high sugar levels measured in their blood or urine. This was around 0.5% of the adult population. This was consistent with results reported in 2014–15.

As for other biomedical risk factors, self-reported data underestimate the true impact of impaired glucose regulation in the population, as many people are unaware they have impaired regulation. In the 2011–12 Australian Health Survey, impaired glucose regulation was assessed via measurement of blood glucose levels after fasting. Based on these results, 3.1% (416,000) of Australian adults were estimated to have impaired glucose regulation.

Multiple biomedical risk factors

Biomedical risk factors can have an interactive or cumulative effect on disease risk. Multiple risk factors can increase the risk of disease, lead to earlier disease onset, increase severity and complicate treatment.

The development of 1 risk factor can lead to the occurrence of another, or they may have shared causes. For example, high blood pressure and abnormal blood lipids are often related to poor diet and being overweight.

In 2011–12, an estimated 1 in 4 (25%) Australian adults had both high blood pressure and abnormal blood lipids. This includes people with measured high blood pressure and abnormal blood lipids, and those who take medication to control these conditions. This increased with age, from 4.3% in people aged 18–34 to 65% in people aged 75 and over. Just over 7 in 10 (71%) adults had either high blood pressure, abnormal blood lipids or both risk factors. This was highest in people aged 75 and over (96%) (ABS 2014).

Managing risk factors

Treating or managing biomedical risk factors includes changes in lifestyle (such as dietary modifications or increased physical activity), use of medications, and surgery. Improving biomedical risk factors can prevent disease, delay disease progression and improve treatment outcomes, and have the potential to enhance the health of the population.

- In 2017–18, hypertension was the most commonly reported chronic condition at general practice encounters, and abnormal blood lipids was the fourth most commonly reported chronic condition (NPS MedicineWise 2019).

- In 2017–18, an estimated 23% of adults had measured high blood pressure but were not taking any blood pressure medication. There has been no change in the prevalence of uncontrolled high blood pressure since 2011–12 (ABS 2019).

- In 2011–12, 87% of people with measured abnormal blood lipids were not using lipid modifying medications. This reflects current guidelines, which state that prescription of lipid modifying medications is not based on abnormal blood lipids alone, but on the absolute risk of cardiovascular disease (RACGP 2018). The absolute risk of cardiovascular disease considers risk factors, such as blood pressure and cholesterol levels, in combination (ABS 2014).

- In 2011–12, a total of 7.7% of people were identified as having abnormal blood lipids, despite reporting using lipid lowering medications. Poorly controlled blood lipids, despite the use of medication, was highest in people aged 65–74 (20%) (ABS 2014).

Where do I go for more information?

For more information on biomedical risk factors, see:

- Cardiovascular disease, diabetes and chronic kidney disease—risk factors
- Australian Burden of Disease Study 2015: Interactive data on risk factor burden
- Australian Bureau of Statistics (ABS) Australian Health Survey: biomedical results for chronic diseases, 2011–12
- ABS National Health Survey: first results, 2017–18

Visit [Risk factors](#) for more on this topic.

References

ABS (Australian Bureau of Statistics) 2013. [Australian Health Survey: users' guide, 2011–13](#). ABS cat. no. 4363.0.55.001. Canberra: ABS.

ABS 2014. Microdata: Australian Health Survey, core content—risk factors and selected health conditions, 2011–12. ABS cat. no. 4324.0.55.003. AIHW analysis of Expanded Confidentialised Unit Record File. Canberra: ABS.

ABS 2016. Microdata: National Health Survey, 2014–15. ABS cat. no. 4324.0.55.001. AIHW analysis of Expanded Confidentialised Unit Record File. Canberra: ABS.

ABS 2017. [National Health Survey: users' guide, 2014–15](#). ABS cat. no. 4363.0. Canberra: ABS.

ABS 2019. Microdata: [National Health Survey, 2017–18](#). ABS cat. no. 4324.0.55.001. Findings based on Detailed Microdata analysis. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019. [Australian Burden of Disease Study 2015: Interactive data on risk factor burden](#). Australian Burden of Disease series Cat. no. BOD 25. Canberra: AIHW.

NPS MedicineWise 2019. [General practice insights report July 2017–June 2018.](#) Sydney: NPS MedicineWise, 2019.

RACGP (The Royal Australian College of General Practitioners) 2018. [Guidelines for preventive activities in general practice 9th edn updated](#). East Melbourne, Victoria: RACGP.

Built environment and health

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/built-environment-and-health

The built environment influences our health in many ways, including activity levels, access to nutritious food, the houses we live in, where we work, contact with nature and the spaces we have for social interactions. It also affects the air we breathe and the water we drink, and shelters us from the weather.

What is the built environment?

The built environment refers to the human-made surroundings where people live, work and recreate. It includes buildings and parks as well as supporting infrastructure such as transport, water and energy networks (Coleman 2017).

The built environment affects the natural environment through its use of land, water and energy resources, and the waste and emissions produced. Conversely, extreme weather events such as floods, cyclones, bushfires and heatwaves are considered the largest risk to the built environment and people who live in it. See Natural environment and health.

Urban form

The shape, size, population density and layout of a city is known as the urban form. In 2018, over 90% of the Australian population lived in *Major cities* and *Inner regional* areas (ABS 2019). Australian cities have unusually low population densities compared with cities in other developed countries with similar population sizes (Coleman 2017). Australia's cities are also characterised by:

- small, dense cores with large, low population density outer suburbs
- segregated land use that separates where people live from where they work, often by great distances (Coleman 2017).

Urban form and population density may play a role in the spread and transmission of communicable diseases, such as COVID-19, as it may be easier for people to maintain physical distance from one another in areas of low population density. However, there are many other environmental, social and economic impacts from this type of urban form, with flow-on effects to human health, including:

- increased car use, which decreases physical activity and increases the risk of chronic disease and its risk factors including obesity and hypertension, as well as increasing the risk of injury from accidents (Chandrabose et al. 2019). Road transport also

increases the level of greenhouse gas emissions, reducing air quality in built-up areas

- loss of agricultural land and green spaces, which reduces areas for food production, recreation, exercise and community gathering, and affects biodiversity. The loss of green spaces, particularly tree canopy coverage, can also increase temperatures in urban areas (Government of South Australia 2019)

- socioeconomic inequality, as more affordable housing is often found further away from city centres and employment areas, which requires longer travel times, increased travel costs, and reduced time available to engage in healthy behaviours such as physical activity (Christian 2012; Daley et al. 2018; Trubka et al. 2010).

Walkability

Neighbourhood walkability (how conducive an area is to walking) affects health through its impact on physical activity and social capital (Giles-Corti et al. 2010). People are more likely to walk for recreation or exercise if they live in neighbourhoods that are within a walkable distance of destinations (including public transport services), have well connected streets and higher residential densities (Gebel et al. 2009; Kamruzzaman et al. 2014). Participating in 30 minutes of walking on average a day can lower the risk of heart disease, stroke, and diabetes by 30–40% (National Heart Foundation 2019).

A 'walkability index' has been created by the Centre for Urban Research, which combines dwelling density, daily living destinations and street connectivity (Arundel et al. 2017). Using this index, only a minority of Australians living in cities live in walkable communities, and these are generally concentrated in the inner (and some middle) suburbs. However, there are some exceptions where the implementation of policies has resulted in highly walkable outer suburbs, such as in Perth and Canberra (Arundel et al. 2017). The Liveable Neighbourhoods operational policy created by The Western Australian Planning Commission in 1997 provides guidance and requirements for the design of urban areas (WAPC 2015). A study by Bull and others (2015) found that for every 10% increase in compliance with the policy, participants were:

- 53% more likely to walk within their neighbourhood

- 40% less likely to feel unsafe

- 14% more likely to have better mental health.

The study also found that:

- people living within 1.6 km of a convenience store, shopping centre or newsagent were 2 times more likely to walk regularly

- people with access to parks and well-connected footpaths were 2.5 times more likely to walk for more than 1 hour each week

- children living closer to school and having highly connected street networks and low traffic volumes were nearly 4 times more likely to walk or cycle to school.

Green and public open spaces

Green and public spaces are areas of public and private land such as nature reserves, public parks, residential gardens, sporting facilities, beachfronts and waterways. They are important for both physical and mental health (Sugiyama et al. 2008; WHO 2019). Spending 2 hours or more in natural environments over the week is associated with higher levels of self-reported good health and wellbeing compared with those who spend no time in them (White et al. 2019).

Australian studies show that:

- people were 3 times more likely to do any moderate or vigorous physical activity if they lived within 400 metres of a park (Mavoa et al. 2016)
- access to a larger park within 1.6 km of home increased the likelihood of walking for 150 minutes or more in a week (equivalent to Australia's Physical Activity and Sedentary Behaviour Guidelines for adults) (Sugiyama et al. 2010).

Green spaces also provide places for social interaction, both planned and incidental, and facilitate community connections and wellbeing (Infrastructure Australia 2019). This is important for feelings of safety, neighbourhood satisfaction and positive mental health, and can help to reduce social isolation (Giles-Corti et al. 2010; Mahmoudi Farahani 2016).

Well-planned green spaces support biodiversity, improve air quality, and reduce noise pollution and temperatures in urban areas (Kent & Thompson 2019). Contact with the natural environment may also benefit our immune system (WHO & SCBD 2015).

Transport

An effective transport system is an essential part of a healthy built environment. It provides access to the resources and facilities people need for a healthy life, such as employment, health care and nutritious food. Transport systems can positively influence health by promoting active travel, or negatively influence health through car dependence, traffic accidents and sedentary behaviour. Transport systems can also affect greenhouse gas emissions and climate change, air pollutants, environmental noise, and lead to the reduction of natural space (Kent & Thompson 2019).

How do Australians commute to work?

On the day of the 2016 Census of Population and Housing (Census), 9.2 million people travelled an average of 16.5 km to their workplace:

- 79% travelled by private vehicle
- 14% took public transport
- 5.2% either cycled or walked.

The average distance travelled was shortest for those living in the Greater Darwin area (13 km), and greatest for those living in regional areas of Western Australia (21 km) (ABS 2018a).

Car dependence

The great majority of Australians depend on their cars for transport. Car-dependent suburbs tend to have poor access to public transport, employment services and shops. Car dependence increases traffic congestion, commuting times and air and noise pollution. It can also lead to an increase in traffic accidents and affect respiratory and cardiovascular health, as well as mental health and life satisfaction (BITRE 2016; Giles-Corti et al. 2016). It contributes to sedentary lifestyles and growing rates of overweight and obesity (AIHW 2011).

Poor air quality due to traffic emissions can be harmful to both human health and the ecosystem, and tends to concentrate around major road corridors (Infrastructure Australia 2019). Car dependence can have a larger effect on those from lower socioeconomic areas, who often have less choice in housing location and may have to live in outer suburbs due to housing affordability. This results in a higher proportion of their household income being spent on car-related expenses (and less available for health needs), and increased vulnerability to changes in fuel prices and mortgage stress (Dodson & Sipe 2008; Dodson et al. 2004; Infrastructure Australia 2019).

Traffic accidents

Traffic-related accidents are a major public health issue and can result in injury, disability or death. In Australia, there were 1,145 deaths due to road traffic crashes in 2018. The number and rate of road deaths decreased over the decade from 2009 to 2018 (by 23% and 33% respectively). Comparable data for road crash hospitalisations are available only for the period 2013–2016, and show the number and rate of hospitalised injuries has increased (by 11% and 6.2% respectively) (BITRE 2019).

Active travel

Active travel is the process of being physically active (usually walking or cycling) while moving from one place to another, and can include multiple modes of transport in 1 trip. The health benefits of active travel include:

- increased physical activity
- social and psychological benefits from incidental interactions with other people
- reductions in greenhouse gas emissions and traffic congestion and less noise and air pollution.

Living in close proximity (400–800 m) to a mix of destinations is associated with higher levels of active transport across all age groups (Boulange et al. 2017; McCormack et al.

2008; Sallis et al. 2012). Other factors associated with increased active travel include safety from traffic, well-lit streets and footpaths (Sallis et al. 2012).

On Census night in 2016, of those who commuted to work 5.2% walked or cycled (ABS 2018a). People who walked or cycled to work generally had the shortest commuting distance.

Food environments

The built environment influences food choices, either by enabling healthy food options or by providing exposure to unhealthy options. Diet is a modifiable risk factor for many chronic conditions as well as overweight and obesity. See [Diet](#) and [Overweight and obesity](#).

Some evidence links an increased density of fast food outlets with overweight and obesity in people and conversely, closer proximity to supermarkets with a higher intake of fruit and vegetables and a higher quality of diet (Allender et al. 2012; Levy 2012). The density of alcohol outlets has also been associated with alcohol-related harm in Australia and internationally (Livingston et al. 2015).

In Australia, the Australian Bureau of Statistics (ABS) National Health Survey 2017–18 included information about the proximity of major supermarket and fast food chain outlets to survey participants (ABS 2018c). Just over half (56%) of Australians lived within 1,500 m of a supermarket, and less than half (44%) within 1,500 m of a fast food outlet. However, the estimates showed no difference for adults in consumption of sweetened drinks, fruit or vegetables by proximity to supermarkets or fast food outlets. This was despite a greater proportion of people from areas of relatively greater disadvantage living within 1,500 m of a supermarket or fast food outlet.

Access to urban agriculture and community gardens is associated with greater consumption of fruit and vegetables. Other health benefits include more active lifestyles, and the mental health and social capital benefits of engagement with other people in natural spaces (Townshend et al. 2015).

More research is needed to better understand the relationship between availability of food, individual food choice and health outcomes in Australia.

Housing

Housing is a very important influence on health and wellbeing. It provides shelter, safety, security and privacy. The availability of affordable, sustainable and appropriate housing enables people to better participate in the social, economic and community aspects of their lives. Housing construction and design and the social and neighbourhood environment can affect various aspects of physical and mental health and quality of life of the inhabitants (Giles-Corti et al. 2012).

In Australia, building design codes regulate the insulation, ventilation, room sizes, ceiling heights and access to sunlight of dwellings. However, the built environment is slow to

adapt to increases in extreme heat events, and heat-related deaths are expected to increase over time (Coleman 2017).

It has been estimated that almost 1,000,000 Australians live in housing regarded as being in poor condition (Baker et al. 2016). Poor-quality housing is associated with greater psychological distress (Giles-Corti et al. 2012) and lower self-assessed general and physical health (Baker et al. 2016).

Frequent moves, renting, and being in financial housing stress are associated with negative children's physical health outcomes (Dockery et al. 2013).

In cities, housing affordability and homelessness are major challenges. On Census night in 2016, an estimated 116,000 people were homeless (ABS 2018b), and in 2017–18 more than 1 million low-income households were in financial housing stress (AIHW 2019b). See Health of people experiencing homelessness.

In remote areas, inadequate supply and poor conditions of social housing can lead to housing overcrowding, particularly for Aboriginal and Torres Strait Islander people (AIHW 2019a)—see Social determinants and Indigenous health. Overcrowding can affect health and education outcomes, and reduce employment opportunities (Infrastructure Australia 2019).

Water resources

Reliable and safe drinking water and wastewater services are vital for the wellbeing and long-term sustainability of communities. In metropolitan areas, water infrastructure includes drinkable supply and wastewater services; many rural and remote areas rely on small, localised or onsite systems (Infrastructure Australia 2019).

Water quality in urban areas of Australia is generally good, however some parts of regional Australia do not meet drinking water standards (Coleman 2017). In some remote communities, water and wastewater infrastructures are poorly maintained, routinely fail, or fail to provide services to their designed standard (Infrastructure Australia 2019).

With the increasing population, and longer and more severe droughts expected, maintaining water supply and quality will become increasingly challenging (Coleman 2017).

Where do I go for more information?

For more information on the built environment and health, see:

* Health and the environment: a compilation of the evidence
* Department of the Environment and Energy Australia: state of the environment 2016: built environment
* Infrastructure Australia Australian Infrastructure Audit 2019: social infrastructure
* Heart Foundation Blueprint for an Active Australia

References

ABS (Australian Bureau of Statistics) 2018a. Census of population and housing: commuting to work—more stories from the Census, 2016. ABS cat. no. 2071.0.55.001. Canberra: ABS.

ABS 2018b. Census of Population and Housing: estimating homelessness 2016. ABS cat. no. 2049.0. Canberra: ABS.

ABS 2018c. National Health Survey: First Results, 2017–18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019. Regional population growth, Australia, 2017–18. ABS cat no. 3218.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2011. Health and the environment: a compilation of the evidence. Cat. no. PHE 136. Canberra: AIHW.

AIHW 2019a. Aboriginal and Torres Strait Islander people: a focus report on housing and homelessness. Cat. no. HOU 301. Canberra: AIHW.

AIHW 2019b. Australia's welfare. Cat. no. AUS 226. Canberra: AIHW.

Allender S, Gleeson E, Crammond B, Sacks G, Lawrence M, Peeters A et al. 2012. Policy change to supportive environments for physical activity and healthy eating: which options are the most realistic for local government? Health Promotion International 27(2):261–74.

Arundel J, Lowe M, Hooper P, Roberts R, Rozek J, Higgs C et al. 2017. Creating liveable cities in Australia: mapping urban policy implementation and evidence-based national liveability indicators. Melbourne: Centre for Urban Research RMIT University.

Baker E, Lester LH, Bentley R & Beer A 2016. Poor housing quality: prevalence and health effects. Journal of Prevention and Intervention in the Community 44(4):219–32.

BITRE (Bureau of Infrastructure, Transport and Regional Economics) 2016. Lengthy commutes in Australia. Canberra: BITRE. Viewed 10 October 2019.

BITRE 2019. Road trauma Australia—annual summaries. Canberra: BITRE. Viewed 10 October 2019.

Boulange C, Gunn L, Giles-Corti B, Mavoa S, Pettit C & Badland H 2017. Examining associations between urban design attributes and transport mode choice for walking, cycling, public transport and private motor vehicle trips. Journal of Transport and Health 6:155–66.

Bull F, Hooper P, Foster S and Giles-Corti B 2015. Living liveable. The impact of Liveable Neighbourhoods Policy on the health and wellbeing or Perth residents. Perth: The University of Western Australia. Viewed 20 December 2019.

Chandrabose M, Rachele JN, Gunn L, Kavanagh A, Owen N, Turrell G et al. 2019. Built environment and cardio-metabolic health: systematic review and meta-analysis of longitudinal studies. Obesity Reviews 20:41–54.

Christian TJ 2012. Trade-offs between commuting time and health-related activities. Journal of Urban Health 89(5):746–57.

Coleman S 2017. Australia: state of the environment report 2016: built environment. Canberra: Department of Environment and Energy. Viewed 9 October 2019.

Daley J, Coates B & Wiltshire T 2018. Housing affordability: re-imagining the Australian dream. Grattan Institute. Viewed 9 October 2019.

Dockery AM, Ong R, Colquhoun S, Li J & Kendall G 2013. Housing and children's development and wellbeing: evidence from Australian data. AHURI final report no. 201. Melbourne: Australian Housing and Urban Research Institute. Viewed 2 January 2020.

Dodson J, Gleeson B & Sipe N 2004. Transport disadvantage and social status: a review of the literature and methods. Urban Policy Program Griffith University. Viewed 9 October 2019.

Dodson J & Sipe N 2008. Shocking the suburbs: urban location, homeownership and oil vulnerability in the Australian city. Housing Studies 23(2008):377–401.

Gebel K, Bauman A, Owen N, Foster S & Giles-Corti B 2009. Position statement: the built environment and walking. National Heart Foundation of Australia. Viewed 10 November 2019.

Giles-Corti B, Foster S, Shilton T & Falconer R 2010. The co-benefits for health of investing in active transportation. NSW Public Health Bulletin 21(6):122–27

Giles-Corti B, Ryan K & Foster S 2012. Increasing density in Australia: maximising the health benefits and minimising the harm, report to the National Heart Foundation of Australia. Melbourne: National Heart Foundation.

Giles-Corti B, Vernez-Moudon A, Reis R, Turrell G, Dannenberg AL, Badland H et al. 2016. City planning and population health: a global challenge. The Lancet 388:2912–24.

Government of South Australia 2019. Creating greener places for healthy and sustainable communities: ideas for quality green public space in South Australia. Viewed 10 January 2020.

Infrastructure Australia 2019. An assessment of Australia's future infrastructure needs: the Australian infrastructure audit 2019. Viewed 3 January 2020.

Kamruzzaman MD, Washington S, Baker D, Brown W, Giles-Corti B & Turrell G 2014. Built environment impacts on walking for transport in Brisbane, Australia. Transportation 2016 (43):53–77.

Kent JL & Thompson S 2019. Planning Australia's healthy built environments. New York: Routledge.

Levy G 2012. The supermarket as an environment for facilitating dietary behaviour change. Heart Foundation. Viewed 9 October 2019.

Livingston M, Wilkinson C & Room R 2015. Community impact of liquor licences: an evidence check rapid review. Sydney: Sax Institute.

Mahmoudi Farahani L 2016. The value of a sense of community and neighbouring. Housing Theory and Society 33(3):357–76.

Mavoa S, Badland H, Learnihan V, Boruff B, Pettit C, Astell-Burt T et al. 2016. The Australian National Liveability Study final report: developing of policy-relevant liveability indicators relating to health and wellbeing and recommendations for their dissemination. The University of Melbourne. Viewed 10 November 2019.

McCormack GR, Giles-Corti B & Bulsara M 2008. The relationship between destination proximity, destination mix and physical activity behaviors. Preventive Medicine 46(1):33–40.

National Heart Foundation of Australia 2019. Why walking? The Heart Foundation call for a walking strategy. Viewed 10 November 2019.

Sallis JF, Floyd MF, Rodriguez DA & Saelens BE 2012. Role of built environments in physical activity, obesity, and cardiovascular disease. Circulation 125:729–37.

Sugiyama T, Leslie E, Giles-Corti B & Owen N 2008. Associations of neighbourhood greenness with physical and mental health: do walking, social coherence and local social interaction explain the relationships? Journal of Epidemiology and Community Health 62(5).

Sugiyama T, Francis J, Middleton NJ, Owen N & Giles-Corti B 2010. Associations between recreational walking and attractiveness, size, and proximity of neighborhood open spaces. American Journal of Public Health 100(9).

Townshend T, Gallo R & Lake AA 2015. Obesogenic built environment: concepts and complexities. In: Barton H, Thompson S, Burgess S & Grant M (eds). The Routledge handbook of planning for health and wellbeing: shaping a sustainable and healthy future. Abingdon: Routledge, 199–210.

Trubka R, Newman P & Bilsborough D 2010. The costs of urban sprawl— infrastructure and transportation. Environment design guide. Viewed 12 October 2019.

WAPC (Western Australian Planning Commission) 2015. Background information: review of Liveable Neighbourhoods (2015). Perth: Department of Planning. Viewed 8 January 2020.

White MP, Alcock I, Grellier J, Wheeler BW, Hartig T, Warber AL et al. 2019. Spending at least 120 minutes a week in nature is associated with good health and wellbeing. Scientific Reports 9(1):7730.

WHO (World Health Organization) and SCBD (Secretariat of the Convention on Biological Diversity) 2015. Connecting global priorities: biodiversity and human health: a state of the knowledge review. Geneva: WHO.

WHO 2019. Health and sustainable development urban green spaces. WHO. Viewed 7 October 2019.

Diet

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The food and beverages people consume (our diet) play an important role in their overall health and wellbeing. Food provides energy, nutrients and other components that, if consumed in insufficient or excess amounts, can result in ill health. A healthy diet helps to prevent and manage health risk factors such as overweight and obesity, high blood pressure and high blood cholesterol, as well as associated chronic conditions, including type 2 diabetes, cardiovascular disease and some forms of cancer (NHMRC 2013). Diet-related chronic conditions are among the leading causes of death and disability in Australia.

Australian Dietary Guidelines

The Australian Dietary Guidelines provide advice on healthy eating habits to promote overall health and wellbeing, reduce the risk of diet-related disease and protect against chronic conditions (NHMRC 2013). They recommend that Australians eat a wide variety of nutritious foods from the 5 food groups every day:

- vegetables and legumes/beans

- fruit

- grain (cereal) foods

- lean meat and poultry, fish, eggs, nuts and seeds and legumes/beans

- milk, yoghurt, cheese and dairy alternatives.

Discretionary foods are foods and drinks that aren't needed for a healthy diet and don't fit into the 5 food groups. They are high in energy, saturated fat, added sugars, added salt and/or alcohol and low in fibre and the Australian Dietary Guidelines recommend that their consumption should be limited.

The Australian Dietary Guidelines also provide advice on the number of serves of each food group that Australians should eat each day. Different amounts are recommended for people of different ages, sex, life stages, height and physical activity level.

See Australian Dietary Guidelines.

This page includes dietary information about the Australian population from 2 surveys:

- In the National Nutrition and Physical Activity Survey 2011–12, participants were asked about all the foods and drinks they consumed in the day before they were surveyed, using a method known as 24-hour dietary recall (ABS 2013).

- In the National Health Survey 2017–18, participants were asked about their fruit and vegetable consumption and their sugar-sweetened drink consumption using short questions, such as, 'How many serves of fruit do you usually eat each day?' (ABS 2019b).

There are strengths of, and limitations to, the information from each survey—while the 2011–12 information is more comprehensive, the 2017–18 information is more recent. Because of this, information from both surveys is included on this page. However, because of the different methods used in the surveys, the results from the 2 surveys should not be compared with each other.

Data from both 24-hour dietary recalls and short survey questions are also subject to various biases. For example, data collected from nutrition surveys are subject to potential under-reporting of food intake, due to:

- actual changes in diet that participants may make when they know they will be surveyed
- misrepresentation (whether deliberate, unconscious or accidental) to make diets appear healthier or to make diets quicker to report (ABS 2014).

How common are poor diets?

The 5 food groups

In 2011–12, most Australians didn't consume the recommended number of serves from the 5 food groups (ABS 2017; Table 1).

Table 1: Proportion of Australians who do not eat the recommended serves of the 5 food groups[b] (per cent), 2011–12

Food group	Males (Aged 2–18)	Females (Aged 2–18)	Men (Aged 19+)	Women (Aged 19+)
Vegetables and legumes/beans	99.6	99.7	96.5	94.8
Fruit[a]	53.5	54.0	70.7	77.0
Grain (cereal) foods	60.5	73.7	66.6	75.6
Lean meat and poultry, fish, eggs, nuts and seeds and legumes/beans	92.4	98.7	79.1	87.0

Milk, yoghurt, cheese and alternatives	80.4	79.8	89.9	96.5

(a) Includes dried fruit, fresh or canned fruit and fruit juice.

(b) The recommended number of serves can differ by age and sex and provide the total daily amount of food required each day. See the Australian Dietary Guidelines recommended serves for adults and recommended serves for children and adolescents for further details.

Source: ABS 2017.

In 2017–18, most Australians didn't consume the recommended number of serves of vegetables (ABS 2018). The proportion not meeting the recommendation was similar for boys (95%) and girls (93%) aged 2–17, and higher for men (96%) than for women (89%).

However, the proportion of Australians consuming the recommended number of serves of fruit in 2017–18 (ABS 2018) was higher than the proportion meeting the recommendation for vegetables. The proportion not meeting the recommendation was higher for boys (30%) than for girls (24%) aged 2–17, and higher for men (53%) than for women (44%).

Discretionary foods

More than one-third (35%) of total energy consumed in 2011–12 was from discretionary foods (ABS 2014). The percentage of total energy consumed from discretionary foods was:

- similar for males (39%) and females (38%) aged 2–18

- slightly higher for men (36%) than for women (33%) aged 19 and over.

Sugar-sweetened drinks are a discretionary food. They include soft drink, cordials, sports drinks, and caffeinated energy drinks. In 2017–18:

- 7.1% of children and adolescents aged 2–17 and 9.1% of those aged 18 and over consumed sugar-sweetened drinks daily

- men were almost twice as likely (12%) as women (6.4%) to consume sugar-sweetened drinks daily (ABS 2018).

Trends

Before 2011–12, the last national nutrition survey of children and adults was conducted in 1995. Under-reporting of food intake is estimated to have increased from 1995 to 2011–12, so comparisons between the 2 surveys are based on serves per 10,000 kilojoules rather than reported daily intake (ABS 2017).

Between 1995 and 2011–12, the estimated number of serves per 10,000 kilojoules consumed:

- increased for lean meat and poultry, fish, eggs, nuts and seeds and legumes/beans
- remained similar for fruit; grain (cereal) foods; and milk, yoghurt, cheese and alternatives
- decreased for vegetables and legumes/beans, and discretionary foods.

Health impact

Burden of disease analysis estimates the contribution of various risk factors to disease burden. In 2015, 7.3% of the burden of disease was attributable to dietary risks (such as a diet low in wholegrains and fruit) (AIHW 2019a). Dietary risks were the third leading risk factor contributing to the burden of disease, after tobacco use and overweight and obesity.

More than 40% of cardiovascular disease burden and 34% of endocrine disease burden was attributable to dietary risks. See Burden of disease.

Variation between population groups

See Health risk factors among Indigenous Australians for information on diet among Aboriginal and Torres Strait Islander Australians.

Remoteness area

In 2017–18, after adjusting for age, Australians aged 18 and over living in *Outer regional and remote* areas (53%) were less likely to meet the fruit recommendation than those living in *Major cities* (48%) (Figure 1). The proportions not eating the vegetable recommendation were similar for adults living in *Outer regional and remote* areas (92%) and those living in *Major cities* (93%) (AIHW 2019b).

In 2017–18, after adjusting for age, Australians aged 18 and over living in *Outer regional and remote* areas were more likely to consume sugar-sweetened drinks daily (14%) than those living in *Major cities* (8.3%) (ABS 2019a).

Socioeconomic area

In 2017–18, after adjusting for age, Australians aged 18 and over living in the lowest socioeconomic areas were less likely to meet the fruit and vegetable recommendations than those living in the highest socioeconomic areas, although the differences were not large:

- 53% of those living in the lowest socioeconomic areas didn't meet the fruit recommendation, compared with 46% in the highest
- 94% of those living in the lowest socioeconomic areas didn't meet the vegetable recommendation, compared with 92% in the highest (AIHW 2019b).

Australian adults living in the lowest socioeconomic areas were 3 times as likely to drink sugar-sweetened drinks daily (15%) than those living in the highest socioeconomic areas (4.4%) in 2017–18, after adjusting for age (ABS 2019a).

Figure 1: Prevalence of poor diet among adults, by selected population characteristics, 2017–18

Dietary intake
- Inadequate vegetable consumption
- Inadequate fruit consumption
- Daily sugar sweetened drink consumption
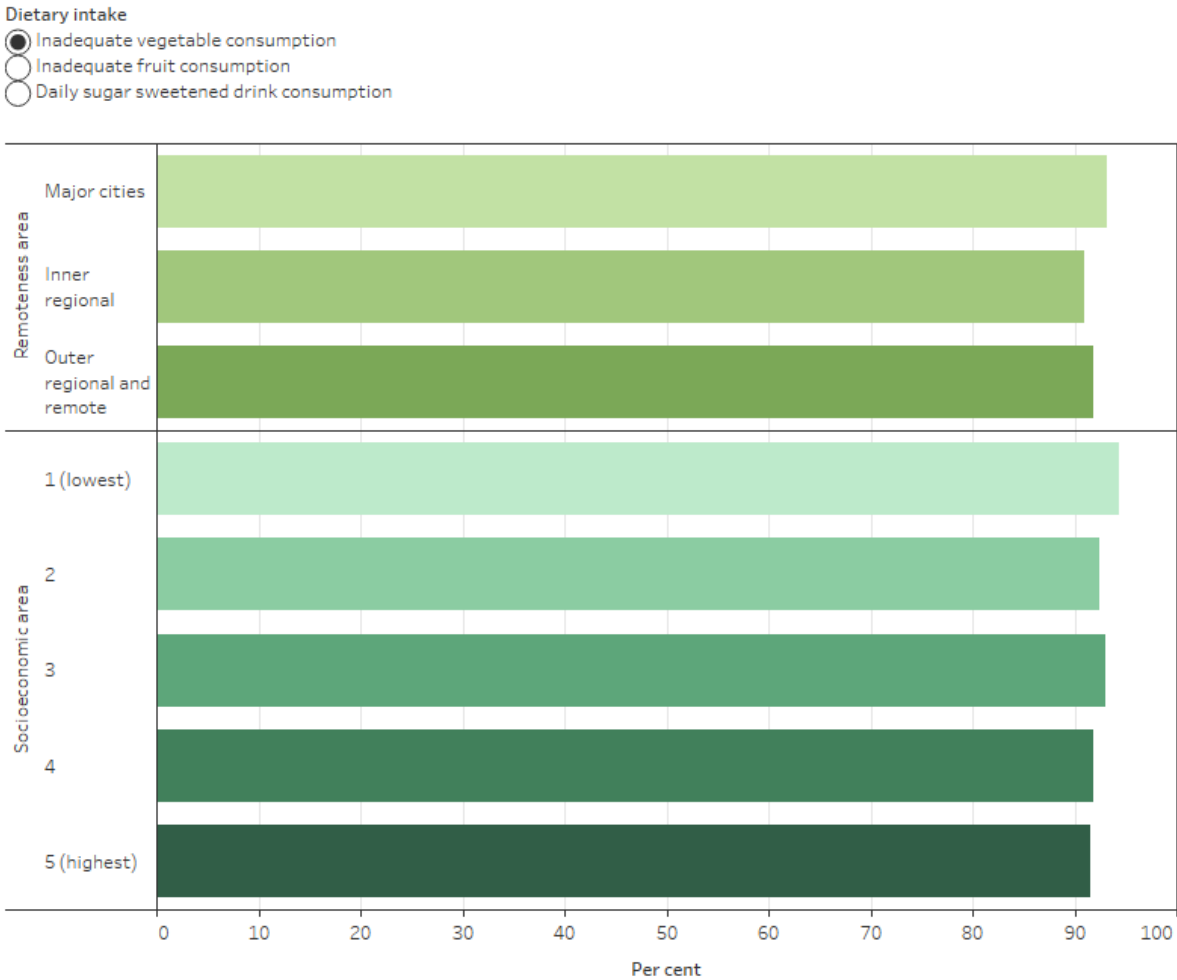
Note: Rates are age-standardised to the 2001 Australian population.
Source: ABS 2019a; AIHW 2019b.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on diet, see:

- Poor diet
- Nutrition across the life stages
- Australian Burden of Disease Study 2015: Interactive data on risk factor burden
- Australian Bureau of Statistics (ABS) Australian Health Survey: nutrition first results—foods and nutrients, 2011–12

- ABS [Australian Health Survey: consumption of food groups from the Australian Dietary Guidelines, 2011–12](#)
- ABS [National Health Survey: first results, 2017–18](#)

Visit [Food & nutrition](#) for more on this topic.

References

ABS (Australian Bureau of Statistics) 2013. [Australian Health Survey: users' guide, 2011–13](#). ABS cat. no. 4363.0.55.001. Canberra: ABS.

ABS 2014. [Australian Health Survey: nutrition first results—foods and nutrients, 2011–12](#). ABS cat. no. 4364.0.55.007. Canberra: ABS.

ABS 2017. [Australian Health Survey: consumption of food groups from the Australian Dietary Guidelines, 2011–12](#). ABS cat. no. 4364.0.55.012. Canberra: ABS.

ABS 2018. [National Health Survey: first results, 2017–18](#). ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019a. [Microdata: National Health Survey, 2017–18](#). ABS cat. no. 4324.0.55.001. Findings based on Detailed Microdata analysis. Canberra: ABS.

ABS 2019b. [National Health Survey: users' guide, 2017–18](#). ABS cat. no. 4363.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019a. [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015](#). Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. [Poor diet](#). Cat. no. PHE 249. Canberra: AIHW.

NHMRC (National Health and Medical Research Council) 2013. [Australian Dietary Guidelines](#). Canberra: NHMRC.

Health literacy

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Health literacy relates to how people access, understand and use health information in ways that benefit their health. People with low health literacy are at higher risk of worse health outcomes and poorer health behaviours.

The idea of health literacy is dynamic and evolving. While there are many published definitions, there is no consensus on its meaning (Sørensen et al. 2012). Health literacy initially focused on the ability of individuals to read and understand medical information, however the way information is delivered by health care professionals and organisations is equally important. Therefore, health literacy has 2 main components:

- Individual health literacy—these are individual skills, such as the ability to find, understand and use health information; for example, to complete health care forms or understand and use the health care system.

- The health literacy environment—these are the health system-based elements, such as policies, processes, and materials, which affect the way the individual engages with the health system (ACSQHC 2014a).

Why is health literacy important?

People with low health literacy are more likely to have worse health outcomes overall (Berkman et al. 2011) and adverse health behaviours, such as:

- lower engagement with health services, including preventive services such as cancer screening (Kobayashi et al. 2014)

- higher hospital re-admission rates (Mitchell et al. 2012)

- poorer understanding of medication instructions (for example, non-adherence, improper usage) (Marvanova et al. 2011; Miller 2016)

- lower ability to self-manage care (Geboers et al. 2016).

In contrast, better levels of health literacy are associated with increased patient involvement in shared decision making (de Oliveira et al. 2018; Seo et al. 2016), which is important in patient-centred care. Improving health literacy is therefore a key element in allowing people to partner with health professionals for better health.

At the population level, low health literacy may be a contributing factor to health inequalities among certain groups (Kickbusch et al. 2006). There is a strong association between some social determinants of health, such as lower levels of education and socioeconomic status, older age, and being from a culturally and linguistically diverse

background, and low health literacy (Adams et al. 2009; Heijmans et al. 2015; Rowlands et al. 2015). Targeting health literacy programs at these groups has the potential to reduce health inequalities.

The COVID-19 pandemic highlights the importance of health literacy in the wider community, as whole populations are asked to understand and rapidly digest complex health concepts relating to infection, immunity and use of the health care system—for example, 'flattening the curve'—to produce a coordinated response to try and slow the spread of disease. Understanding health literacy levels among the population (and vulnerable sub-populations) helps the development and delivery of consumable and effective population health messages during such large-scale outbreaks.

See Health promotion.

Measuring health literacy

Data generated by measuring health literacy can inform policy decisions and assist health organisations to tailor services appropriately to particular groups of people. The Organisation for Economic Co-operation and Development (OECD) identified that addressing gaps in health literacy measurement is an important way to remove barriers to health literacy (Moreira 2018). However, the ability to measure health literacy is hampered by the broad range of definitions, a lack of consensus on what to measure, and the multiple approaches to measuring it (Osborne et al. 2013; Poureslami et al. 2017). This makes it difficult to provide comparable reporting on health literacy over time.

Health Literacy Survey

In 2018, the Australian Bureau of Statistics (ABS) conducted the Health Literacy Survey (ABS 2019), using the Health Literacy Questionnaire (HLQ) (Osborne et al. 2013). The HLQ is a validated tool that has been used in a range of settings, in Australia and abroad (ABS 2019; Bo et al. 2014; NZ Ministry of Health 2018).

The benefits of the Health Literacy Survey data are that they report a larger range of health literacy characteristics and can therefore be used to improve health service provision. The HLQ does not give a total score of health literacy, nor does it state whether health literacy levels are high or low. Rather, it assesses health literacy across 9 domains that encompass both individual and health environment measures and so provides information about gaps or strengths in the health literacy of the population (Beauchamp et al. 2017).

Selected estimates from the ABS Health Literacy Survey are:

• the majority of people (97%) agreed or strongly agreed that they have sufficient information to manage their health (Figure 1a)

• the majority of people (96%) felt that they are understood and supported by health care providers (Figure 1a)

- the majority of people (92%) agreed or strongly agreed that they are actively managing their health (Figure 1a)

- while the majority of people (83%) felt they are able to appraise health information, as many as 1 in 6 (17%) people disagreed or strongly disagreed that they are able to do so (Figure 1a)

- almost 2 in 5 people (39%) find it always easy to understand health information well enough to know what to do, with a further 54% stating that they usually find this easy (Figure 1b).

Figure 1a: Health Literacy Survey 2018—summary results, for persons aged 18 and over

Health literacy domain
Domain 1: Feeling understood and supported by health care providers

Category: ▇ Strongly disagreed/disagreed ▇ Agreed ▇ Strongly agreed
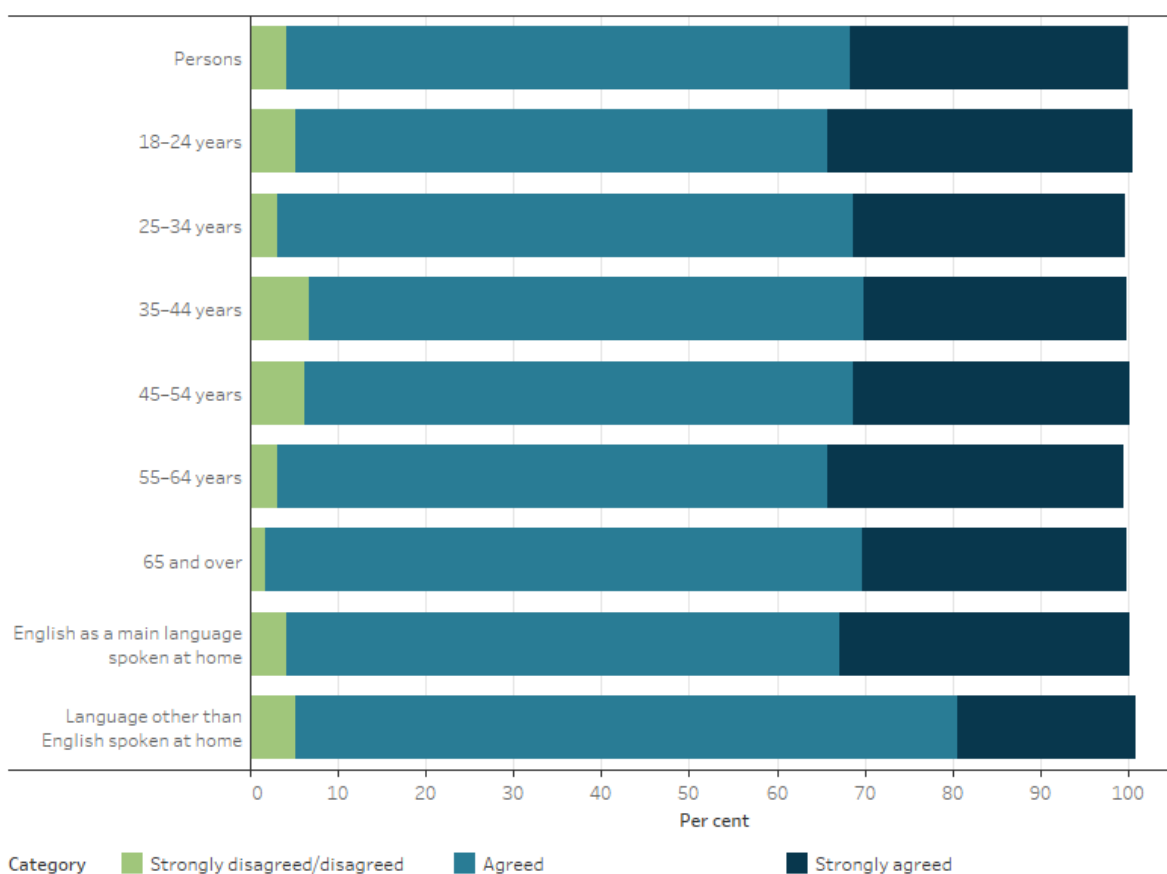
\# proportion has a high margin of error and shold be used with caution
Note: Proportions may not add up to 100% as data have been randomly adjusted to avoid the release of confidential data.
Source: ABS 2019.
http://www.aihw.gov.au/

Australia's health snapshots 2020

Figure 1b: Health Literacy Survey 2018—summary results, for persons aged 18 and over

Health literacy domain
Domain 6: Ability to engage with health care providers

Notes:
1. 'Difficult' comprises 'cannot do or always difficult', 'usually difficult' and 'sometimes difficult'.
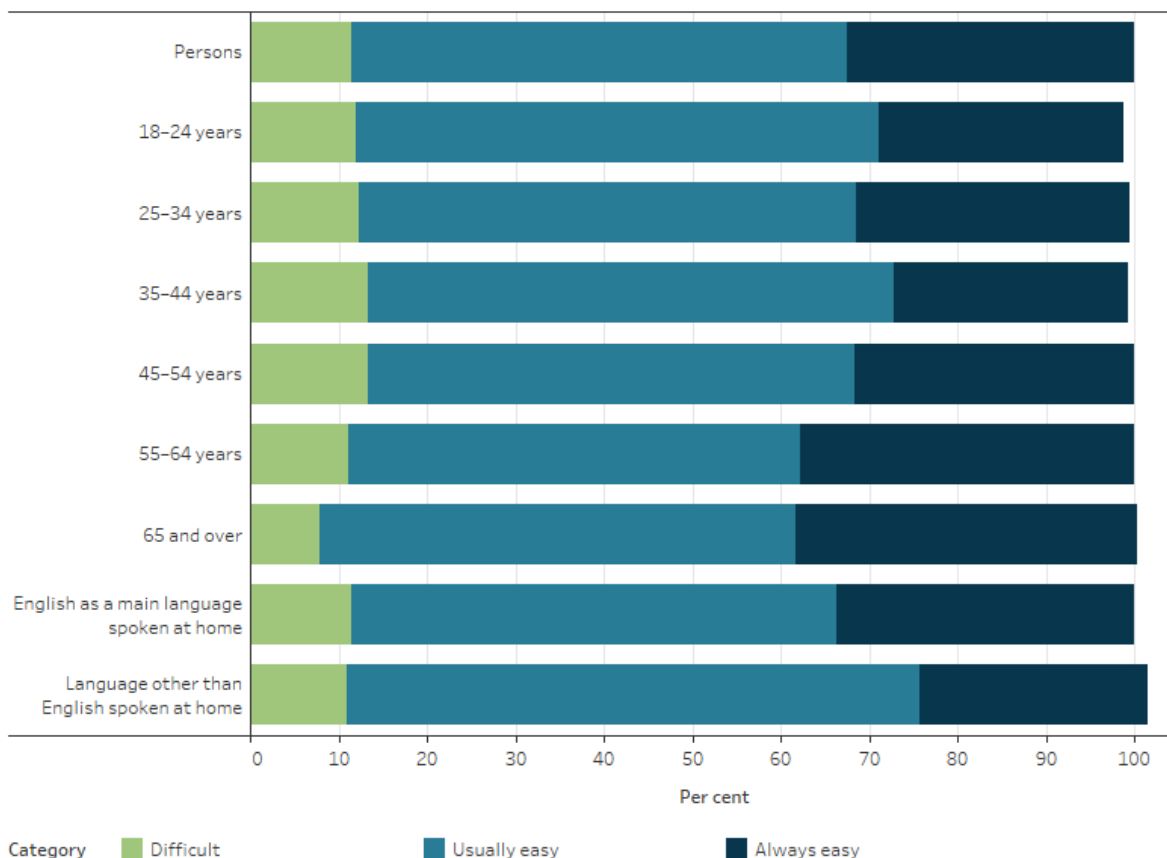2. Proportions may not add up to 100% as data have been randomly adjusted to avoid the release of confidential data.
Source: ABS 2019.
http://www.aihw.gov.au/

The findings from the ABS Health Literacy Survey also showed that for some domains there was variation by age group. Younger people aged 18–24 were almost twice as likely to strongly agree that they have access to social support compared with older people aged 65 and over (39% compared with 20%). In contrast, navigating the health care system appears to be more difficult for younger age groups. Nearly 1 in 5 (19%) people aged 18–24 stated that they found navigating the health care system difficult, and this decreased to 7.9% for those aged 65 and over.

There was also some variation in the results according to main language spoken in the home (figures 1a and 1b). Overall, the proportion of people who disagreed or strongly disagreed that they feel understood and supported by health care providers was similar for people who spoke English in the home (4.2%) and those who did not (5.2%). However, a higher proportion of people who spoke English in the home strongly agreed

they feel understood and supported by health care providers (33%) than those who did not speak English in the home (20%).

Additionally, those who spoke English in the home were more likely to always find it easy to actively engage with health care providers (34%) than those who spoke a language other than English in the home (26%).

How can health literacy be improved?

The National Statement on Health Literacy (ACSQHC 2014b) acknowledges the importance of health literacy in enabling effective partnerships in health, and proposes actions that can be implemented within the health system to improve health literacy levels. This has been a driver for health literacy at the local level, with Local Health Networks, Primary Health Networks and community organisations designing and implementing locally appropriate health literacy interventions.

Some examples of activities being undertaken at the national and community levels to improve health literacy are provided below.

National initiatives

The National Strategic Framework for Chronic Conditions (Australian Health Ministers' Advisory Council 2017) and the National Safety and Quality Health Service Standards (ACSQHC 2017) are 2 national initiatives that acknowledge and integrate health literacy as an important component of the health system.

Community initiatives

The Centre for Culture, Ethnicity and Health works closely with community, government and health professionals to represent people from culturally diverse backgrounds, particularly migrants and refugees. It provides a range of resources to address health literacy across all audiences, including:

- health literacy training courses—including the first health literacy course in Australia
- health translations directory—an online library of health information translated into more than 100 languages (in conjunction with the Victorian Government)
- Drop the Jargon day—a national day encouraging health professionals to think about using simple language with their clients, in place of medical terms and acronyms.

Where do I go for more information?

For more information on health literacy, see:

- Australian Bureau of Statistics National Health Survey: Health Literacy, 2018
- Australian Commission on Safety and Quality in Health Care National Statement on Health Literacy—Taking action to improve safety and quality

- Centre for Culture, Ethnicity and Health Resources in Health literacy

References

ABS (Australian Bureau of Statistics) 2019. National Health Survey: health literacy, 2018. ABS cat. no. 4364.0.55.014. Canberra: ABS.

ACSQHC (Australian Commission on Safety and Quality in Health Care) 2014a. Health literacy: taking action to improve safety and quality. Sydney: ACSQHC.

ACSQHC 2014b. National statement on health literacy. Sydney: ACSQHC.

ACSQHC 2017. National safety and quality health service standards. 2nd edn. Sydney: ACSQHC.

Adams RJ, Appleton SL, Hill CL, Dodd M, Findlay C & Wilson DH 2009. Risks associated with low functional health literacy in an Australian population. Medical Journal of Australia 191(10):530−534.

Australian Health Ministers' Advisory Council 2017. National Strategic Framework for Chronic Conditions. Canberra: Australian Government.

Beauchamp A, Batterham RW, Dodson S, Astbury B, Elsworth GR, McPhee C et al. 2017. Systematic development and implementation of interventions to optimise health literacy and access (Ophelia). BMC Public Health 17:230

Berkman ND, Sheridan SL, Donahue KE, Halpern DJ & Crotty K 2011. Low health literacy and health outcomes: an updated systematic review. Annals of Internal Medicine 155(2):97−107.

Bo A, Friis K, Osborne RH & Maindal HT 2014. National indicators of health literacy: ability to understand health information and to engage actively with healthcare providers—a population-based survey among Danish adults. BMC Public Health 14:1095.

De Oliveira GS, Errea M, Bialek J, Kendall MC & McCarthy RJ 2018. The impact of health literacy on shared decision making before elective surgery: a propensity matched case control analysis. BMC Health Services Research 18:958.

Geboers B, de Winter AF, Spoorenberg SLW, Wynia K & Reijneveld SA 2016. The association between health literacy and self-management abilities in adults aged 75 and older, and its moderators. Quality of Life Research 25(11):2869−2877.

Heijmans M, Waverijn G, Rademakers J, van der Vaart R & Rijken M 2015. Functional, communicative and critical health literacy of chronic disease patients and their importance for self-management. Patient Education and Counseling 98(1):41−48.

Kickbusch I, Wait S & Maag D 2006. Navigating health: the role of health literacy. London: Alliance for Health and the Future, International Longevity Centre UK (United Kingdom).

Kobayashi LC, Wardle J & von Wagner C 2014. Limited health literacy is a barrier to colorectal cancer screening in England: evidence from the English Longitudinal Study of Ageing. Preventative Medicine 61:100−105.

Marvanova M, Roumie CL, Eden SK, Cawthon C, Schnipper JL & Kripalani S 2011. Health literacy and medication understanding among hospitalized adults. Journal of Hospital Medicine 6(9):488–493.

Miller TA 2016. Health literacy and adherence to medical treatment in chronic and acute illness: a meta-analysis. Patient Education and Counseling 99(7):1079–1086.

Mitchell SE, Sadikova E, Jack BW & Paasche-Orlow MK 2012. Health literacy and 30-day postdischarge hospital utilization. Journal of Health Communication 17 (Supplement 3):S325–338.

Moreira L 2018. Health literacy for people-centred care. Where do OECD countries stand? OECD Health Working Papers no. 107. Paris:OECD Publishing.

NZ (New Zealand) Ministry of Health 2018. Content Guide 2017/18: New Zealand health survey. Wellington: NZ Ministry of Health.

Osborne RH, Batterham RW, Elsworth GR, Hawkins M & Buchbinder R 2013. The grounded psychometric development and initial validation of the Health Literacy Questionnaire (HLQ). BMC Public Health 13:658.

Poureslami I, Nimmon L, Rootman I & Fitzgerald MJ 2017. Priorities for Action: recommendations from an international roundtable on health literacy and chronic disease management. Health Promotion International 32:743–754.

Rowlands G, Protheroe J, Winkley J, Richardson M, Seed PT & Rudd R 2015. A mismatch between population health literacy and the complexity of health information: an observational study. British Journal of General Practice 65:e379–e386.

Seo J, Goodman MS, Politi M, Blanchard M & Kaphingst KA 2016. Effect of health literacy on decision-making preferences among medically underserved patients. Medical Decision Making 36(4):550–556.

Sørensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, et al. 2012. Health literacy and public health: a systematic review and integration of definitions and models. BMC Public Health 12:80.

Illicit drug use

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https://www.aihw.gov.au/reports/australias-health/illicit-drug-use

Illicit drug use affects individuals, families and the broader Australian community. These harms are numerous and include:

- health impacts such as burden of disease, death, overdose and hospitalisation

- social impacts such as violence, crime and trauma

- economic impacts such as the cost of health care and law enforcement

- some specific population groups are at greater risk of experiencing disproportionate harms associated with illicit drug use, including young people, people with mental health conditions and people identifying as gay, lesbian, bisexual, transgender or intersex (Department of Health 2017).

Definition of illicit drug use

'Illicit use of drugs' covers the use of a broad range of substances, including:

- illegal drugs—drugs prohibited from manufacture, sale or possession in Australia, including cannabis, cocaine, heroin and amphetamine-type stimulants

- pharmaceuticals—drugs available from a pharmacy, over-the-counter or by prescription, which may be subject to misuse (when used for purposes, or in quantities, other than for the medical purposes for which they were prescribed). Examples include opioid-based pain relief medications, opioid substitution therapies, benzodiazepines, steroids, and over-the-counter codeine (not available since 1 February 2018)

- other psychoactive substances—legal or illegal, used in a potentially harmful way—for example, kava; synthetic cannabis and other synthetic drugs; inhalants such as petrol, paint or glue (Department of Health 2017).

Each data collection cited on this page uses a slightly different definition of illicit drug use; see the relevant report for information.

How common is illicit drug use?

According to the 2019 National Drug Strategy Household Survey (NDSHS), an estimated 9.0 million (43%) people aged 14 and over in Australia had illicitly used a drug at some point in their lifetime (including the non-medical use of pharmaceuticals) and an estimated 3.4 million (16.4%) had used an illicit drug in the previous 12 months. This was

similar to proportions in 2016 (43% and 15.6%, respectively) but has increased since 2007 (38% and 13.4%, respectively) (Figure 1).

In 2019, the most common illicit drugs used in the previous 12 months was cannabis (11.6%), followed by cocaine (4.2%) and ecstasy (3.0%) (Figure 1). A number of changes were reported in the recent use of illicit drugs between 2016 and 2019, including increases in the use of:

- cannabis (from 10.4% to 11.6%)

- cocaine (from 2.5% to 4.2%)

- ecstasy (from 2.2% to 3.0%)

- hallucinogens (from 1.0 % to 1.6%)

- inhalants (from 1.0% to 1.4%)

- ketamine (from 0.4% to 0.9%) (Figure 1) (AIHW 2020b).

Overall, in 2019, an estimated 900,000 people (4.2%) aged 14 and over used a pharmaceutical drug for non-medical purposes in the previous 12 months, a decline from 4.8% (an estimated 1 million people) in 2016 (AIHW 2020b). Between 2016 and 2019, the proportion of people using 'pain-killers and opioids' for non-medical purposes declined from 3.6% to 2.7%. This decline is likely to be due to a reclassification of medications containing codeine that was implemented in 2018. Under the change, drugs with codeine (including some painkillers) can no longer be bought from a pharmacy without a prescription. The proportion of people using codeine for non-medical purposes has halved since 2016, from 3.0% to 1.5% in 2019.

In 2016, pain-killers and opioids used for non-medical purposes were the second most commonly used illicit drug in the previous 12 months after cannabis, but in 2019, they were fourth, after cannabis, cocaine and ecstasy (AIHW 2020b).

Due to the changes in recent use of a number of illicit drugs between 2016 and 2019, meth/amphetamines are no longer in the top 5 illicit drugs most likely to be used in the previous 12 months. Meth/amphetamine use has been declining since it peaked at 3.4% in 2001 and stabilised in 2019 (1.4% in 2016 and 1.3% between 2016 and 2019).

To better understand illicit drug use in Australia, it is important to consider the frequency of drug use and not just the proportion of people that have used a drug in the previous 12 months. Some drugs are used more often than others, and the health risks of illicit drug use increase with the frequency, type, and quantity of drugs used (Degenhardt et al. 2013). While cocaine and ecstasy were used by more people in the previous 12 months, most people used these drugs infrequently with 57% of people who used cocaine and 51% of people who used ecstasy reporting they only used the drug once or twice a year in the 2019 NDSHS. Conversely, monthly or more frequent drug use was more commonly reported among people who had used cannabis (50%) or meth/amphetamines (33%).

Figure 1: Proportion of people aged 14 and over who recently used selected illicit drugs, 2001 to 2019
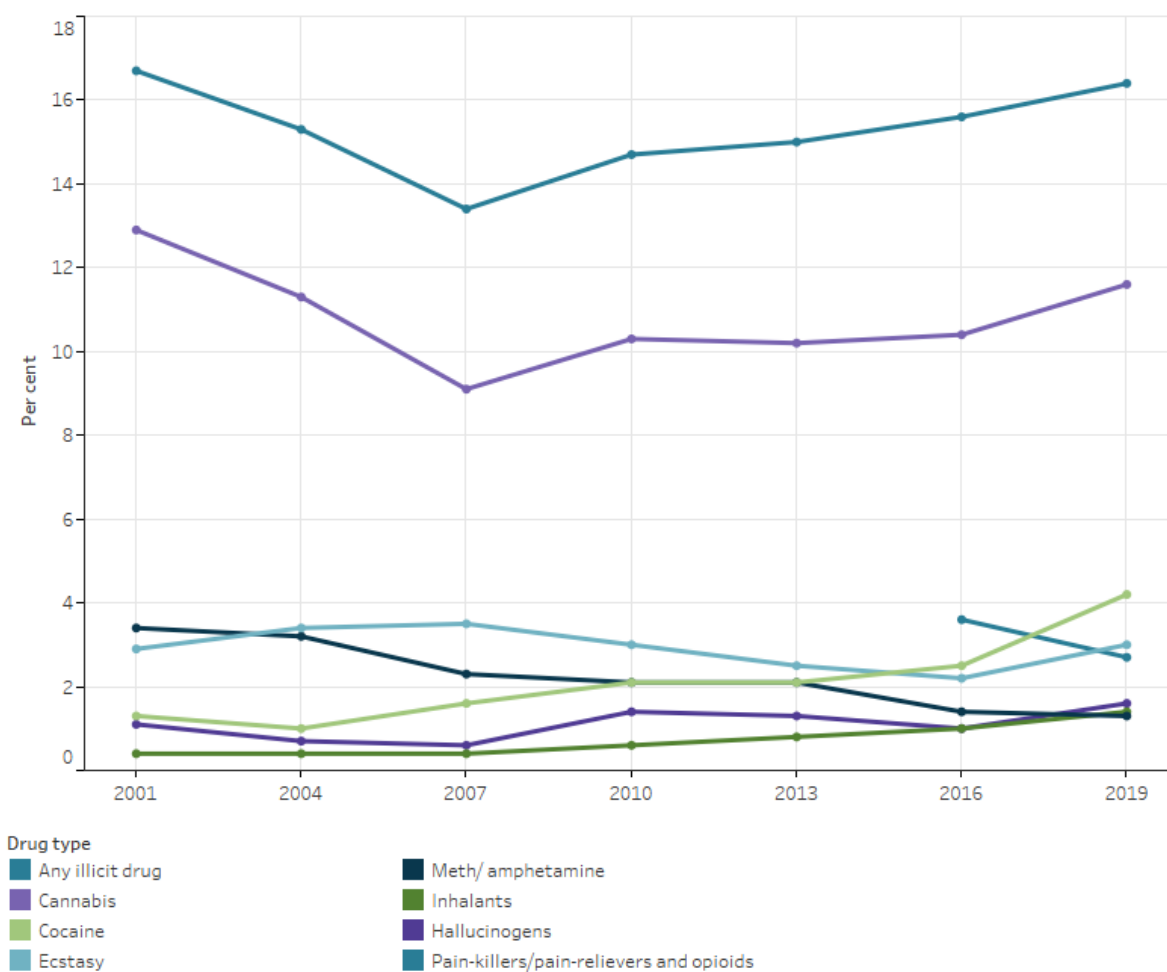
[Notes]

Source: NDSHS 2019.
http://www.aihw.gov.au/

Health impact

Deaths

Drug-induced deaths are defined as those that can be directly attributable to drug use, as determined by toxicology and pathology reports (see 'Glossary' for more information).

Analysis of the National Mortality Database showed that:

- in 2018, 1,740 deaths were drug-induced (7.0 per 100,000 population, age-standardised)—one of the highest rates on record, but still lower than in 1999 (9.1 deaths per 100,000 population, age-standardised) (Figure 2)

- opioids was the most common drug class present in drug-induced deaths over the past decade (4.6 per 100,000 in 2018, age-standardised). Opioids include the use of a number of drug types, including heroin, opiate-based analgesics (such as codeine and oxycodone) and synthetic opioid prescriptions (such as tramadol and fentanyl) (Figure 2)

- in 2018, benzodiazepines were the most common single drug type present in drug-induced deaths (3.6 per 100,000, age-standardised) (benzodiazepines are included in the drug class 'depressants') (Figure 2)

- over the past decade, drug-induced deaths were more likely to be due to prescription drugs than illegal drugs, and there has been a substantial rise in the number of deaths with a prescription drug present (AIHW 2017).

Figure 2: Drug-induced deaths, by selected drug type and drug class, number and rate, 1997 to 2018

Drug-induced deaths
○ Number
● Rate per 100,000

Selected drug class or type
● Selected drug class
○ Selected drug type

Selected drugs
- All antidepressants
- All antipsychotics
- All depressants
- All drugs
- Non-opioid analgesics
- Opioids
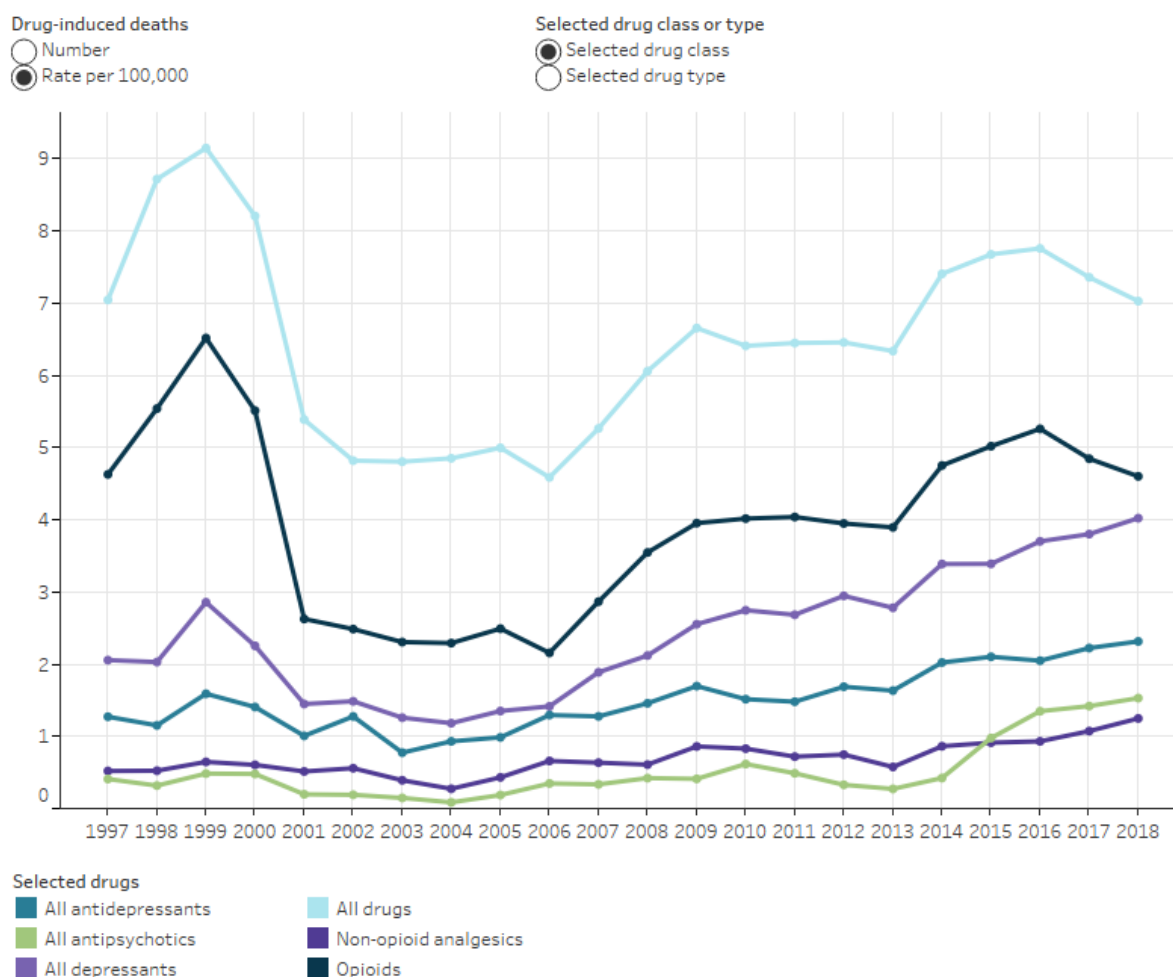
[Notes]

Source: AIHW analysis of the National Mortality Database 1997–2018.
http://www.aihw.gov.au/

Burden of disease

According to the Australian Burden of Disease Study 2015, illicit drug use contributed to 2.7% of the total burden of disease and injury in 2015 (AIHW 2019b). This included the impact of opioids, amphetamines, cocaine, cannabis, and other illicit drug use, as well as unsafe injecting practices. The rate of total burden of disease and injury attributable to illicit drug use increased 18% between 2003 and 2015 (AIHW 2019b).

Opioid use accounted for the largest proportion (37%) of the illicit drug use burden, followed by amphetamine (21%), cocaine (11.4%) and cannabis (8.3%) use. An estimated 27% of the burden was from poisoning and 18.2% was from diseases contracted through unsafe injecting practices (AIHW 2019b). See Burden of disease.

Hospitalisations

The National Hospital Morbidity Database contains information on drug-related hospitalisations (see Glossary for more information).

In 2017–18, 63,800 of the 11.3 million hospitalisations in Australia's public and private hospitals had a drug-related (excluding alcohol) principal diagnosis (0.6% of all hospitalisations).

The total number and rate of drug-related (excluding alcohol) hospitalisations has risen from around 52,500 in 2013–14 to 63,800 in 2017–18 (from 225.5 to 257.7 per 100,000 population). The rise in drug-related (excluding alcohol) hospitalisations has largely been driven by increases associated with:

- methamphetamines (15.3 hospitalisations per 100,000 population in 2013–14 to 42.0 hospitalisations per 100,000 population in 2017–18)
- cannabinoids (21.4 to 26.1 hospitalisations per 100,000 population) (Figure 3) (AIHW 2019a).

In 2017–18, rates of drug-related hospitalisations per 100,000 population for methamphetamine (42.0 per 100,000), opioids (including heroin, opium, morphine and methadone) (35.4 per 100,000), antidepressants and antipsychotics (34.6 per 100,000), and non-opioid analgesics (31.6 per 100,000) remained high (Figure 3) (AIHW 2019a).

See Alcohol risk and harm for information on drug-related hospitalisations where alcohol was the drug.

Figure 3: Hospitalisations by selected drug-related principal diagnosis, number and rate, 2013–14 to 2017–18
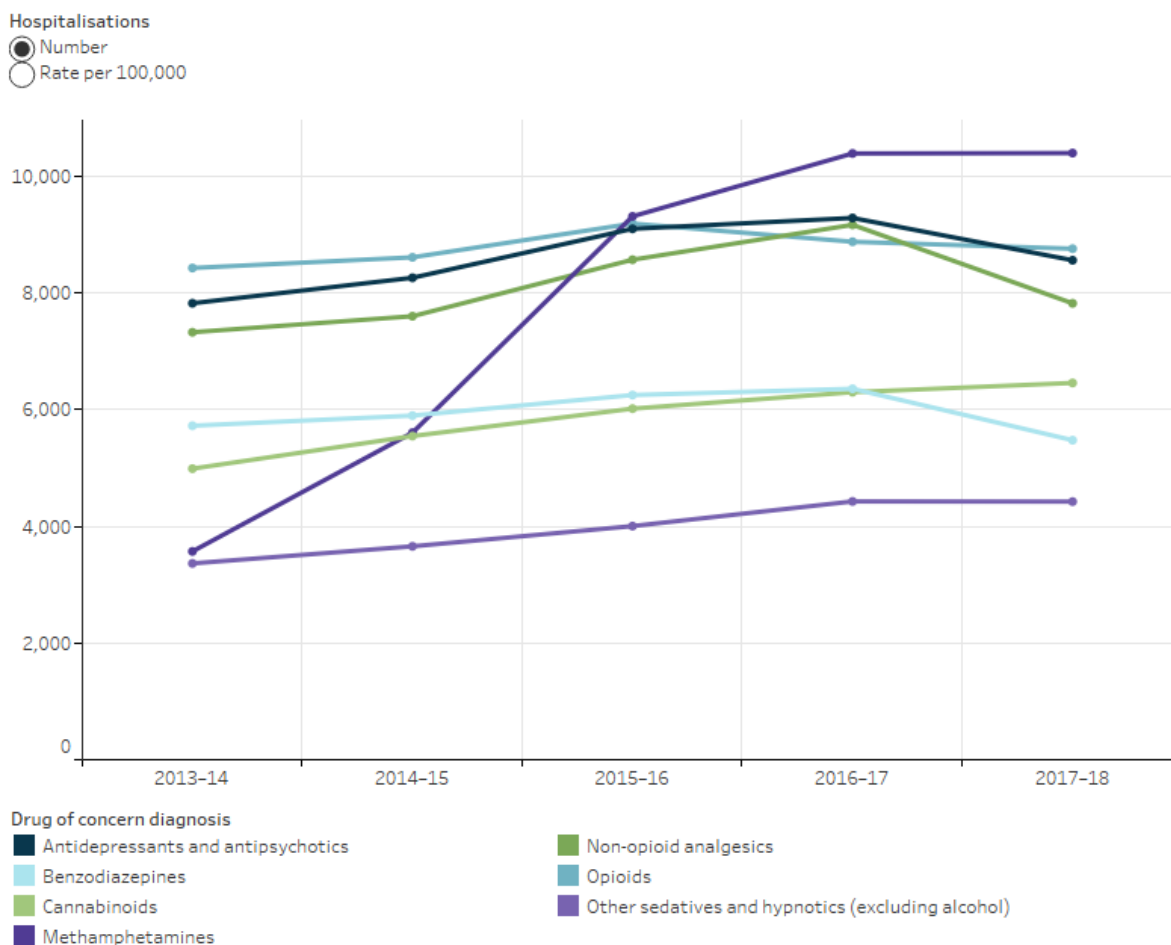
Hospitalisations
- Number
- Rate per 100,000

Drug of concern diagnosis
- Antidepressants and antipsychotics
- Benzodiazepines
- Cannabinoids
- Methamphetamines
- Non-opioid analgesics
- Opioids
- Other sedatives and hypnotics (excluding alcohol)

[Notes]

Source: AIHW analysis of the National Hospital Morbidity Database.
http://www.aihw.gov.au/

Non-fatal overdose

Data from the 2019 Illicit Drugs Reporting System (IDRS) and Ecstasy and related Drugs Reporting System (EDRS) include rates of self-reported overdose:

- of 2019 IDRS participants, 12% reported a heroin overdose in the past 12 months (Peacock et al. 2019b)

- of 2019 EDRS participants, 22% reported having ever experienced a non-fatal stimulant overdose in the past 12 months (Peacock et al. 2019a).

Treatment

The Alcohol and Other Drug Treatment Services National Minimum Data Set reported a total of 130,000 treatment episodes in 2018–19 (63%) where the principal drug of

concern (PDOC) was an illicit drug (this includes episodes where prescription drugs and volatile solvents were the PDOC) (AIHW 2020a).

Amphetamines were the most common principal illicit drug of concern in 2018–19, having surpassed cannabis for the first time in 2015–16. Between 2009–10 and 2018–19, closed treatment episodes for amphetamines as a principal drug of concern increased nearly 6-fold from 10,000 to 58,200 and increased for cannabis episodes from 31,500 to 41,200 (AIHW 2020a). See Alcohol and other drug treatment services.

Social impact

The social impacts of illicit drug use are pervasive and include criminal activity, engagement with the criminal justice system and victimisation. For example:

- more than 2 in 5 participants of the 2019 IDRS (45%) and EDRS (45%) reported participating in criminal activities, most commonly property crime and selling and/or dealing of drugs (Peacock et al. 2019b; Peacock et al. 2019a)
- in 2019, 1 in 10 (10.5%) people aged 14 and over had been a victim of an illicit drug-related incident (experiencing verbal abuse, physical abuse or being put in fear) in the previous 12 months, an increase from 9.2% in 2016 (AIHW 2020b)
- in 2015–16, less than 3 in 10 (28%) of victims and 16% of offenders had consumed illicit drugs before a homicide incident (Bricknell 2019).

Priority populations

The National Drug Strategy 2017–2026 specifies priority populations who have a high risk of experiencing direct and indirect harm as a result of drug use, including young people, people with mental health conditions and people identifying as gay, lesbian, bisexual, transgender or intersex (Department of Health 2017).

Young people

Young people are susceptible to permanent damage from alcohol and other drug use as their brains are still developing, which makes them a vulnerable population (Department of Health 2017).

Young people (aged 14–29) in 2019 were less likely to have used an illicit drug in the previous 12 months than young people in 2001—with a particularly large difference seen among teenagers and people in their 20s. For example, in 2001, 28% of 14–19 year olds had used an illicit drug in previous 12 months, but by 2019, this was 16%.

In 2019, people aged 20–29 were the most likely to have used an illicit drug in the previous 12 months (31%), a similar proportion to 2016 (28%). There have been significant changes in the types of drugs used by people in their 20s. Ecstasy use among people in their 20s declined from 12.0% in 2004 to 7.0% in 2016 then rose again to 9.8% in 2019. This was the first time an increase was reported in ecstasy use for people in this

age group in over a decade, with use returning to a similar level reported in 2001 (10.4%) (Figure 4). Cocaine use among people in their 20s was at its highest level in 2019. Much of the rise in cocaine use among people in this age group occurred between 2016 and 2019—from 4.3% in 2001 to 6.9% in 2016 and up to 12.0% in 2019. On the other hand, use of methamphetamines among people in their 20s is at its lowest level since 2001 (declined from 11.2% in 2001 to 2.4% in 2019).

See Health of young people.

Figure 4: Proportion of people aged 20–29 who recently used ecstasy, cocaine, and meth/amphetamine, 2001 to 2019
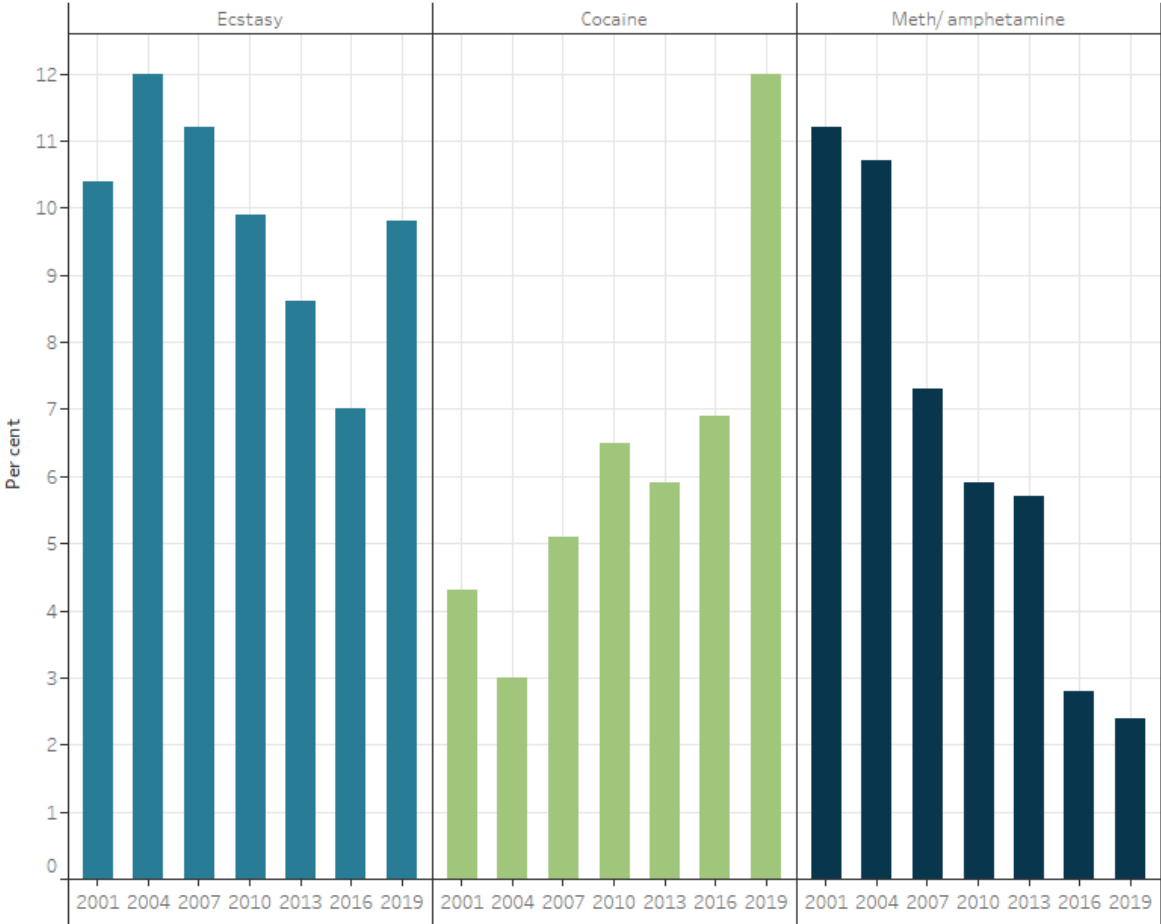
Notes:
1. Recent use defined as use in the previous 12 months.
2. Ecstasy includes 'designer drugs' before 2004.
3. Meth/amphetamine defined as use in the previous 12 months for non medical purposes.
Source: NDSHS 2019.
http://www.aihw.gov.au/

People with mental health conditions

There is a complex relationship between illicit drug use and mental health conditions. However, it is difficult to determine to what extent drug use causes mental health problems, and to what degree mental health problems give rise to drug use (Loxley et al. 2004).

In 2019, the NDSHS showed that the proportion of self-reported mental health conditions was higher among people aged 18 and over who reported the use of illicit drugs in the previous 12 months (26%) than those who had not used an illicit drug over this period (15.2%) (AIHW 2020b). For example, mental conditions were reported by:

- 31% of people who recently used meth/amphetamine (compared with 16.6% of non-users)
- 27% of people who recently used cannabis (compared with 15.4% of non-users)
- 22% of people who recently used ecstasy (compared with 16.7% of non-users)
- 22% of people who recently used cocaine (compared with 16.6% of non-users) (AIHW 2020b).

The EDRS reported an increase in self-reported mental health conditions between 2014 and 2019 (from 28% to 57%) (Peacock et al. 2019a). See Physical health of people with mental illness.

People identifying as gay, lesbian or bisexual

People who identify as gay, lesbian, bisexual, transgender or intersex can be at an increased risk of licit and illicit drug use. These risks can be increased by a number of issues such as stigma and discrimination, familial issues, fear of discrimination and fear of identification (Department of Health 2017). There is limited data available on substance use by people identifying as gay, lesbian, bisexual, transgender, intersex or queer. The NDSHS provides substance use estimates by sexual identity for people identifying as gay, lesbian or bisexual, however it does not include estimates for people identifying as transgender or intersex (NDSHS 2020b).

The NDSHS has consistently shown that the proportion of people reporting illicit drug use has been higher among people who identify as gay, lesbian or bisexual than among heterosexual people—40% compared with 15.4% had used an illicit drug in the previous 12 months in 2019. After adjusting for differences in age, in comparison to heterosexual people, gay, lesbian or bisexual people were:

- 9.0 times as likely to use inhalants in the previous 12 months
- 3.9 times as likely to have used meth/amphetamines in the previous 12 months
- 2.6 times as likely to have used ecstasy in the previous 12 months (NDSHS 2020b).

The types of illicit drugs people had used in the last 12 months varied quite considerably by a person's sexual orientation and it is important to note that there are differences in substance use between people who identified as gay or lesbian and people who identified as bisexual (NDSHS 2020b).

Where do I go for more information?

For more information on illicit drug use, see:

- Alcohol, tobacco & other drugs in Australia

- [National Drug Strategy Household Survey 2019](#)

- [Alcohol and other drug treatment services in Australia 2018–19](#)

- [Australian Burden of Disease Study 2015: interactive data on risk factor burden](#)

- [National Drug and Alcohol Research Centre](#)

Visit [Illicit use of drugs](#) for more on this topic.

References

AIHW (Australian Institute of Health and Welfare) 2017. [Non-medical use of pharmaceuticals: trends, harms and treatment 2006–07 to 2015–16](#). Drug treatment series no. 30. Cat. no. HSE 195. Canberra: AIHW.

AIHW 2019a. [Alcohol, tobacco and other drugs in Australia report](#). Web report. Cat no. PHE 221. Canberra: AIHW.

AIHW 2019b. [Australian Burden of Disease Study 2015: interactive data on risk factor burden](#). Web report. Canberra: AIHW.

AIHW 2020a. [Alcohol and other drug treatment services in Australia 2018–19](#). Web report. Cat. no. HSE 243. Canberra: AIHW.

AIHW 2020b. [National Drug Strategy Household Survey 2019](#). Drug statistics series no. 32. Cat. no. PHE 270. Canberra: AIHW.

Bricknell S 2019. [Homicide in Australia 2015–16: National Homicide Monitoring Program report.](#) Canberra: Australian Institute of Criminology.

Degenhardt L, Whiteford HA, Ferrari AJ, Baxter AJ, Charlson FJ et al. 2013. Global burden of disease attributable to illicit drug use and dependence: findings from the Global Burden of Disease Study 2010. The Lancet 382(9904):1564–74.

Loxley W, Toumbourou J, Stockwell TR, Haines B, Scott K, Godfrey C et al. 2004. The prevention of substance use, risk and harm in Australia: a review of the evidence. Canberra: The National Drug Research Institute and the Centre for Adolescent Health.

Department of Health 2017. [National Drug Strategy 2017–2026](#). Canberra: Department of Health. Viewed 13 October 2019.

Peacock A, Karlsson A, Uporova J, Gibbs D, Swanton R, Kelly G et al. 2019a. [Australian drug trends 2019: key findings from the National Ecstasy and Related Drugs Reporting System interviews](#). Sydney: National Drug and Alcohol Research Centre (NDARC), UNSW Sydney.

Peacock A, Uporova J, Karlsson A, Gibbs D, Swanton R, Kelly G, et al. 2019b. [Australian drug trends 2019: key findings from the National Illicit Drug Reporting System interviews.](#) Sydney: NDARC, UNSW Sydney.

Insufficient physical activity

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Physical activity is any body movement produced by skeletal muscles that uses energy (WHO 2018). Low levels of physical activity are a major risk factor for chronic conditions. People who are not active enough have a greater risk of developing cardiovascular disease, type 2 diabetes, osteoporosis and dementia. Being physically active improves the immune system and mental and musculoskeletal health, and reduces other risk factors such as overweight and obesity, high blood pressure and high blood cholesterol. Physical activity can also improve symptoms and/or delay or halt the progression of a number of conditions or the onset of associated diseases and complications (Pedersen & Saltin 2015).

Being physically active is important across all ages and contributes to healthy growth and development in children and adolescents (WHO 2018). Australia's Physical Activity and Sedentary Behaviour Guidelines and the Australian 24-hour Movement Guidelines are evidence-based recommendations that outline the minimum amount of physical activity required for health benefits (Department of Health 2019). The Guidelines recognise that different amounts and types of physical activity are required across the life span for optimal health.

This page focuses on the physical activity component of the Guidelines measurable through national health surveys.

Physical activity guidelines for adults

Physical activity can include:

- going for a walk, jog or bike ride

- playing a sport, like tennis, soccer or basketball

- going swimming, or taking a class at the gym.

Adults aged 18–64 should be active on most (preferably all) days, accumulating at least 150 minutes of moderate intensity physical activity or 75 minutes of vigorous intensity physical activity each week (or an equivalent combination of both).

People aged 65 and over should accumulate at least 30 minutes of moderate intensity physical activity on most, preferably all days (Department of Health 2019).

See Australia's Physical Activity and Sedentary Behaviour Guidelines for Adults (18–64 years) and Physical Activity Recommendations for Older Australians (65 years and older)

Information on physical activity for adults is based on self-reported data from the Australian Bureau of Statistics (ABS) 2017–18 National Health Survey. The survey relies on people accurately remembering their physical activity levels, which can introduce recall bias and lead to over- or underestimations of the amount of physical activity completed.

Insufficient physical activity is captured here as:

- for adults aged 18–64: not completing 150 minutes of moderate to vigorous activity (where time spent on vigorous activity is multiplied by 2) across 5 or more days a week
- for adults aged 65 and over: not completing 30 minutes or more of physical activity on at least 5 days each week.

How common is insufficient physical activity?

Adults

Based on self-reported data from the 2017–18 National Health Survey, more than half of adults (55%) didn't participate in sufficient physical activity (AIHW 2019b). Women were more likely than men to be insufficiently active (59% compared with 50%).

The rate of insufficient physical activity generally increases with age—less than half of those aged 18–24 were insufficiently active (41% of men and 48% of women) compared with more than two-thirds of those aged 65 and over (69% of men and 75% of women) (Figure 1).

Figure 1: Prevalence of insufficient physical activity among adults, by age and sex, 2017–18

☑ Females
☑ Males
☐ Persons
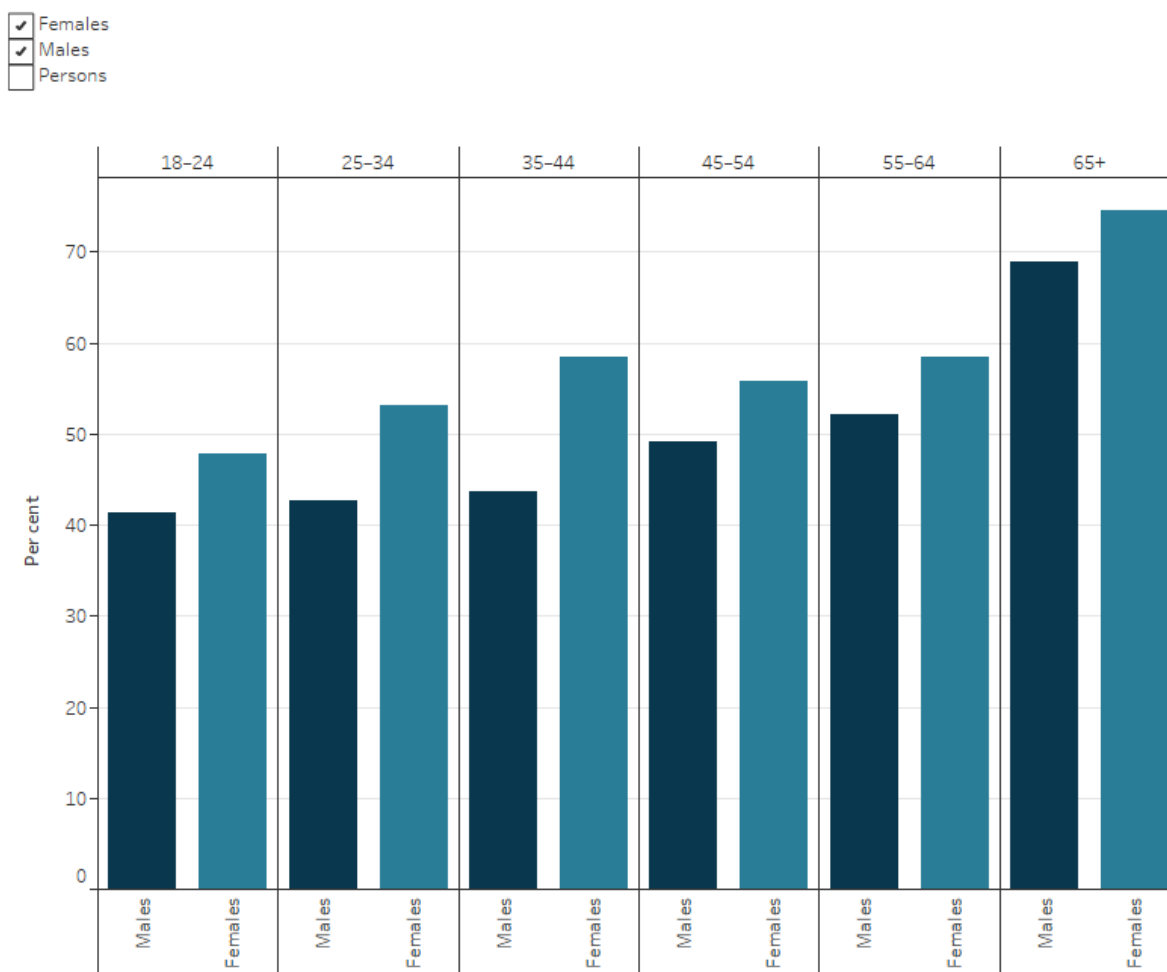
Note: Physical Activity includes physical activity at work, walking for fitness, recreation, or sport; walking to get to or from places; moderate exercise; and vigorous exercise (multiplied by 2) in the week prior to interview. Data does not include people for whom this measure was not known or not applicable.
Source: AIHW 2019a.
http://www.aihw.gov.au/

Trends

There was a slight decrease in the percentage of adults who were insufficiently active between 2007–08 and 2017–18, after adjusting for age—from 69% to 65% (AIHW 2019b). However, rates did not change significantly between 2014–15 and 2017–18. These data exclude workplace physical activity as information on this was collected in 2017–18 only.

Children and young people

Physical activity guidelines for children and young people

Physical activity for children includes:

- energetic play (such as climbing, running, jumping and dancing)

- going for a swim, walk, jog or bike ride

- playing a sport like tennis, soccer or basketball

Children aged 2–5 (who have not yet started full-time schooling) should spend at least 180 minutes a day on a variety of physical activities, including energetic play, with no more than 60 minutes of screen time per day.

Children and young people aged 5–17 should accumulate at least 60 minutes of moderate to vigorous activity per day, and no more than 120 minutes of recreational screen time per day (Department of Health 2019).

See Australian 24-Hour Movement Guidelines for the Early Years (Birth to 5 years) and Australian 24-Hour Movement Guidelines for Children and Young People (5–17 years).

The most recent data available on physical activity and sedentary screen time for children and young people aged 2 and over is from the ABS 2011–12 National Nutrition and Physical Activity Survey. However, under the Intergenerational Health and Mental Health Study, the ABS National Nutrition and Physical Activity Survey is scheduled to be conducted again in 2023.

In 2011–12, 83% of children aged 2–5, 88% of children aged 5–12, and 98% of young people aged 13–17 had not met the physical activity and sedentary behaviour guidelines on all 7 days in the previous week (AIHW 2018).

See Physical activity across the life stages for more information on the physical activity and sedentary behaviour of Australian children and young people.

Health impact

In 2015, 2.5% of the disease burden in Australia could have been avoided if all people in Australia were sufficiently active (as defined in the Australian Burden of Disease Study) (AIHW 2019a).

The burden due to insufficient physical activity for associated diseases was:

- 19% for type 2 diabetes

- 17% for bowel cancer

- 16% for uterine cancer

- 14% for dementia

- 12% for coronary heart disease

- 11% for breast cancer

- 10% for stroke.

See Burden of disease.

Variation between population groups

See Health risk factors among Indigenous Australians for information on insufficient physical activity among Aboriginal and Torres Strait Islander Australians.

There were no significant differences in the prevalence of insufficient physical activity between remoteness areas for adults in 2017–18, after adjusting for age (AIHW 2019b). However, there were differences between socioeconomic areas—63% of adults in the lowest socioeconomic areas were insufficiently active compared with 48% in the highest, after adjusting for age (Figure 2). See Rural and remote health and Health across socioeconomic groups.

Figure 2: Prevalence of insufficient physical activity among adults, by selected population characteristics, 2017–18
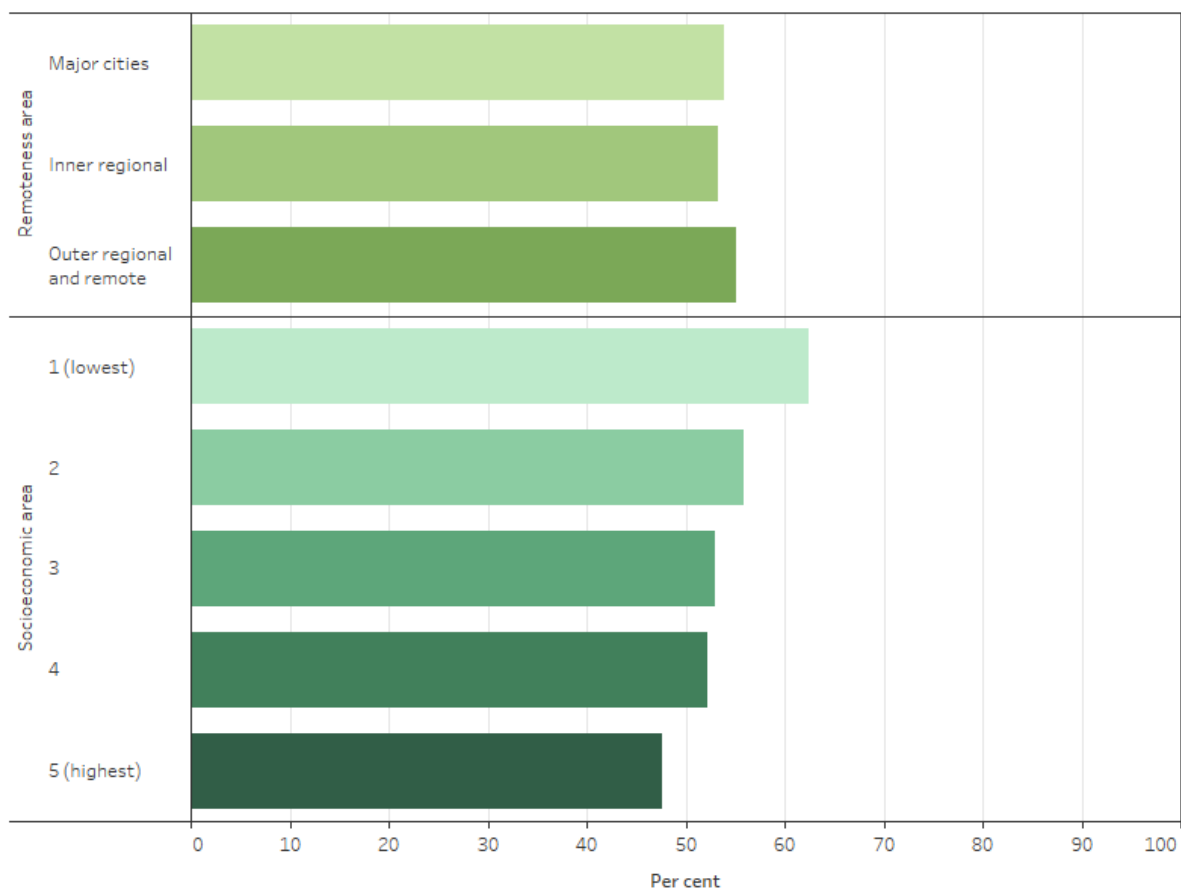
Notes:
1. Physical Activity includes physical activity at work, walking for fitness, recreation, or sport; walking to get to or from places; moderate exercise; and vigorous exercise in the week prior to interview. Data does not include people for whom this measure was not known or not applicable.
2. Rates are age-standardised to the 2001 Australian standard population.
Source: AIHW 2019a.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on insufficient physical activity, see:

- [Insufficient physical activity](#)
- [Physical activity across the life stages](#)
- [Australian Burden of Disease Study 2015: Interactive data on risk factor burden](#)
- [Physical activity during pregnancy 2011–12](#)

Visit [Physical activity](#) for more on this topic.

References

AIHW (Australian Institute of Health and Welfare) 2018. [Physical activity across the life stages](#). Cat. no. PHE 225. Canberra: AIHW.

AIHW 2019a. [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015](#). Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. [Insufficient physical activity](#). Cat. no. PHE 248. Canberra: AIHW.

Department of Health 2019. [Australia's Physical Activity and Sedentary Behaviour Guidelines and the Australian 24-Hour Movement Guidelines](#). Canberra: Department of Health. Viewed 18 September 2019.

Pedersen BK & Saltin B 2015. Exercise as medicine—evidence for prescribing exercise as therapy in 26 different chronic diseases. Scandinavian Journal of Medicine & Science in Sports 25(S3):1–72.

WHO (World Health Organization) 2018. Global action plan on physical activity 2018–2030: more active people for a healthier world. Geneva: WHO.

Natural environment and health

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/natural-environment-and-health

The natural environment comprises the atmosphere, land, water, oceans, and the diversity of living things (UN 2019). It provides essential resources for health and wellbeing including food, fresh water, wood and fibre, fuel and medicines. It also helps regulate weather, vegetation, soils, and the quality of water and air, and provides a range of aesthetic, cultural, recreational and spiritual services to people (Whitmee et al. 2015).

As a result of human pressure, the health of most or all of the planetary systems that provide these services is currently in decline, including some already considered irreversibly damaged (UN 2019).

This page presents a selection of evidence about the pressures on some of Australia's major environments and their direct and indirect impacts on human health. See Built environment and health for information on the health impacts of the human-made surroundings.

2019–20 bushfires

Accumulated Forest Fire Danger Index values for spring 2019 were the highest on record over large areas of Australia. Record high values were observed in areas of all states and territories. Rainfall across the country was 62% below average making it the driest spring on record and daytime temperatures were above average to highest on record over most of Australia (BOM 2019a).

The 2019–20 bushfires were unprecedented, with 21% of Australia's temperate forests burned compared with the 2% typical of previous major fire years (Boer et al. 2020). This page describes the health impacts of bushfires in general terms (see Bushfires); however the full health and related impacts of these bushfires won't be known for some time. The forthcoming release, *A burning issue: Short-term health impacts of the 2019–20 Australian bushfires* (AIHW forthcoming 2020) will describe some of the more immediate impacts of the 2019–20 bushfires on health and the health system.

Climate change and health

What is climate change?

Climate change refers to a change in the pattern of weather, which affects oceans, land surfaces and ice sheets, occurring over decades or longer (Australian Academy of Science 2019). Human activities, such as burning fossil fuels, agriculture and deforestation have resulted in an increase in atmospheric greenhouse gas (GHG) concentrations. These gases trap heat in the atmosphere, which heats the land and oceans and changes weather patterns (IPCC 2014).

Climate change affects environmental determinants of human health through a range of different pathways, from extreme weather events to infectious and communicable diseases, and availability of food and water (Ebi et al. 2018). This can result in health effects such as thermal stress, injury, vector-borne and other microbial diseases, food insecurity and poor mental health (McMichael et al. 2006). The social determinants of health are being affected by climate change (WHO 2018a).

Climate change affects some population groups more than others. Groups at greater risk include older people, children, people with chronic conditions and multimorbidity, outdoor workers, people living in rural and remote areas, those living in low-lying, flood or bushfire-prone areas, and socioeconomically disadvantaged groups.

Extreme weather events

The extreme weather events described here include heat waves, drought, bushfires, violent storms, heavy rainfall events and flooding.

Under climate change, the intensity and/or frequency of at least the first 2 of these extreme weather events and the number of days with fire weather conditions has increased, and is projected to continue increasing (BOM & CSIRO 2018). Without adaptation and mitigation, the health impacts of these events are also likely to increase (Beggs et al. 2019; WHO 2018b).

What are mitigation and adaptation?

Mitigation is action taken to reduce greenhouse gas emissions, such as replacing coal burning power stations with solar or wind power, and/or increasing the amount of greenhouse gases removed from the atmosphere by carbon sinks such as forests or soils (IPCC 2014).

Adaptation involves taking practical action to manage risks from climate impacts, protect communities and strengthen the economy, such as bushfire preparedness and heatwave response planning (Department of the Environment and Energy 2019; Zhang et al. 2018).

Heatwaves and very hot days

A heatwave is defined as 3 or more days of high maximum and minimum temperatures that are unusual for a location (BOM 2019b). Heatwaves are monitored by the Bureau of Meteorology (BOM 2019b).

Heatwaves are associated with heat-related conditions ranging from minor rashes and body cramps to more serious conditions such as heatstroke (severe hyperthermia). Excessive heat can also exacerbate existing health conditions such as heart disease, diabetes, and kidney disease; reduce productivity; and increase the geographic spread of vector-borne diseases and transmission of food-borne diseases such as gastroenteritis (AMA 2015).

Increases in hospitalisations and deaths in Australia have been observed during heatwaves. Consistent and significant increases in hospitalisations and emergency department presentations occurred on heatwave days compared with non-heatwave days across South Australia in 2000–2016 (Williams et al. 2018). In Victoria, there were 374 extra deaths (a 62% increase in all-cause mortality) during a heatwave from 26 January to 1 February 2009 (Department of Health and Human Services 2009).

Recent data from the Bureau of Meteorology show that 2019 was Australia's hottest year on record, with average temperatures 1.52 degrees Celsius above the long-term average (BOM 2020). The number of days over 35 degrees has increased (BOM & CSIRO 2018), increasing the probability of heatwaves. Very high monthly maximum temperatures that occurred around 2% of the time in the past (1951–1980) now occur around 12% of the time (2003–2017) (BOM & CSIRO 2018). This increase in the number of very hot days is projected to continue under climate change (BOM & CSIRO 2018).

Bushfires

Health impacts from bushfires include immediate effects of death and trauma from the fire, as well as longer-term effects.

In Australia, there were an average of 5.4 bushfire-related deaths per year between 1901 and 1964, and 10.5 per year between 1965 and 2011 (Blanchi et al. 2012)—a comparison which doesn't take population growth into account. A large proportion of these deaths occurred in 6 individual years, including 2009, when the Black Saturday bushfires killed 173 people (The 2009 Victorian Bushfires Royal Commission 2009). In addition, an average of 174 bushfire-related injuries are estimated each year for the period 1967–2013 (Geoscience Australia 2019).

Smoke generated by bushfires can affect respiratory health over large areas, as evidenced by increased respiratory hospital admissions during bushfire events (Chen et al. 2006; Johnston et al. 2002; Kolbe & Gilchrist 2009; Morgan et al. 2010; Tham et al. 2009). See the section on air pollution for more information on smoke-related air quality.

The longer-term effects of bushfires include deterioration of existing health conditions such as hypertension, gastrointestinal disorders, diabetes and mental illness (McFarlane

et al. 1997). The experience of bushfire may increase the occurrence of psychological and behavioural disorders such as anxiety, depression and substance misuse (AIHW 2011).

Based on estimates from a recent study of the impacts of the 2019–20 bushfire season, 10% of Australian adults considered their home or property was directly threatened, while over half (54%) experienced anxiety or worry due to the bushfires (Biddle et al. 2020). Reports of bushfire-associated anxiety or worry were more common in females, young people and people living in capital cities—but this last finding is thought to reflect under-reporting in rural and remote people due to cultural values of stoicism in the face of hardship (Biddle et al. 2020).

A follow-up study of psychological outcomes 5 years after the 2009 Black Saturday bushfires found that 22% of people who had been in communities highly affected by the fires were suffering probable post-traumatic stress disorder (PTSD), major depressive episode or severe distress, compared with 5.6% of people who had been in regions that were less affected by the fires. Levels of PTSD for those with any exposure to bushfires were markedly higher than for those measured in the general population (Bryant et al. 2018).

Drought

Australia is drought-prone and many areas have a dry climate. Long periods of below-average rainfall adversely affect the natural environment, and have flow-on effects for human health (AIHW 2011; Kalis et al. 2009).

Many health effects of drought have been documented globally, including malnutrition and mortality, water-related disease such as E. coli, airborne and dust-related disease, vector-borne diseases such as dengue fever, mental health effects and distress (Stanke et al. 2013).

The mental health effects of drought appear to be complex. Some studies have found associations between the health of men and drought, but women seem to be less affected. A longitudinal study (Powers et al. 2015) found that drought did not lead to poorer mental health among mid-aged Australian women.

From 2001−02 to 2007−08, people living in drought-affected areas in rural Australia had higher levels of distress than people living in urban areas (O'Brien et al. 2014). A 2012 study (Hanigan et al. 2012) found an increased risk of suicide among males aged 30−49 living in rural areas of Australia during periods of drought between 1970 and 2007.

Drought can also restrict physical and financial access to healthy foods. For example, drought was identified as the primary contributor to substantial increases in the price of fresh fruit (43% rise) and vegetables (33% rise) between 2005 and 2007 (Quiggin 2007).

Storms and floods

Health effects from storms and floods may be short-term (for example, physical trauma), medium-term (for example, the spread of vector-borne disease) or long-term (such as post-traumatic stress and depression) (Fewtrell & Kay 2008; Ivers & Ryan 2006).

A survey of the disaster-related trauma from the 2010–2011 Queensland floods and cyclones found that 14% of respondents felt terrified, helpless or hopeless following the events and 7.1% of respondents continued to experience distress months later (Clemens et al. 2013).

Like drought, storm and flood damage can also restrict food availability and increase food prices. These weather events may also have broader economic impacts. As an example, the reduced banana supply following Cyclone Yasi in 2011 resulted in a 0.7 percentage point increase in inflation (Debelle 2019) affecting the entire Australian economy.

Ultraviolet radiation

Ultraviolet radiation (UV) from the sun is essential for good health as it helps the body manufacture vitamin D (WHO 2019a). However, it is also known to cause a number of cancers, such as non-melanoma skin cancers (including basal and squamous cell carcinomas), melanoma (including melanoma in situ) and cancer of the eye. UV may be responsible for 20% of cataracts globally (WHO 2019b).

In 2015, UV exposure was responsible for 0.8% of the total burden of disease in Australia (AIHW 2019a).

In 2017–18, an estimated 410,800 Australians had cataracts (ABS 2018).

In 2019, an estimated 15,200 new cases of melanoma and 23,700 new cases of melanoma in situ of the skin were diagnosed in Australia, while 1,700 deaths were attributed to melanoma. This compares to 8,700 cases of and 970 deaths due to melanoma in 2000 (AIHW 2019b; AIHW 2020).

Exposure to UV can be moderated by protective behaviours. However, only 47% of adults and 33% of adolescents typically employ 2 or more of these (hat, sunscreen, shade, clothing) (Cancer Australia 2019).

Biodiversity

Biodiversity is fundamentally important for human health because 'it helps to regulate climate, filters air and water, enables soil formation and mitigates the impact of natural disasters. It also provides timber, fish, crops, pollination, ecotourism, medicines, and physical and mental health benefits' (UN 2019).

Contact with nature also has health benefits—increased attention, energy and tranquillity, and significantly decreased anxiety, anger, fatigue and sadness are all associated with exposure to natural environments (Bowler et al. 2010). Natural places

such as parks provide opportunities for outdoor recreation, spiritual and cultural heritage connection, physical, mental, and social health benefits and neighbourhood amenity (Parks Victoria 2015).

Planetary biodiversity (the range of living things) is declining rapidly (WWF & ZSL 2018) and the 'status of biodiversity in Australia is generally considered poor and worsening' (Cresswell & Murphy 2017), with about 1,800 species of plants and animals in Australia listed as threatened as a consequence of invasive species (particularly feral animals), habitat fragmentation and degradation, and the increasing impact of climate change (Cresswell & Murphy 2017).

Access to urban biodiversity is also becoming increasingly important to human health and wellbeing as cities continue to grow. See Built environment and health.

Air pollution

Air pollution, in particular fine airborne particles (particulate matter) known as PM2.5 can have both long-term and short-term adverse impacts on human health (AIHW 2011). These particulates can decrease lung function, increase respiratory symptoms, chronic obstructive pulmonary disease, cardiovascular and cardiopulmonary disease and mortality (Pope & Dockery 2006), and decrease life expectancy (Pope et al. 2009). In 2013, the International Agency for Research on Cancer classified outdoor air pollution as a human carcinogen (Jackson et al. 2016).

In 2015, nearly 2,600 (1.6%) deaths and 0.8% of the burden of disease in Australia was attributed to PM2.5 air pollution (AIHW 2019a).

People with an underlying health condition, such as asthma, chronic obstructive pulmonary disease, or cardiovascular disease, are particularly at risk from poor air quality (Jackson et al. 2016).

Thunderstorm asthma

Air pollution can sometimes result in major single health events. In 2016, a major thunderstorm asthma epidemic was triggered in Melbourne when very high pollen counts coincided with adverse meteorological conditions resulting in 3,365 people presenting at hospital emergency departments over 30 hours, and 10 deaths (Thien et al. 2018). See Chronic respiratory conditions.

Air quality is monitored at 75 locations across Australia and reported nationally by the Department of Environment and Energy (NEPC 2019). Air quality in Australian cities is generally good to very good in comparison with similar developed economies, but the majority of Australian cities exceeded the PM2.5 advisory standard ($25\mu g/m^3$) on at least 1 day each year during 2008–2014 (Keywood et al. 2016), due to extreme localised events (for example, bushfires and dust storms).

The air quality in New South Wales (NSW) and in the Australian Capital Territory (ACT) was greatly affected by the widespread bushfires burning in 2019–20. Figure 1 shows the daily average PM2.5 concentrations in Canberra and Sydney, January 2019 to January 2020. On January 1, 2020, a PM2.5 reading of 1197μg/m^3 was recorded at Monash in the ACT—a reading almost 48 times the PM2.5 advisory standard of 25μg/m^3.

Figure 1: Daily average PM2.5 concentrations in Canberra and Sydney, January 2019 to January 2020
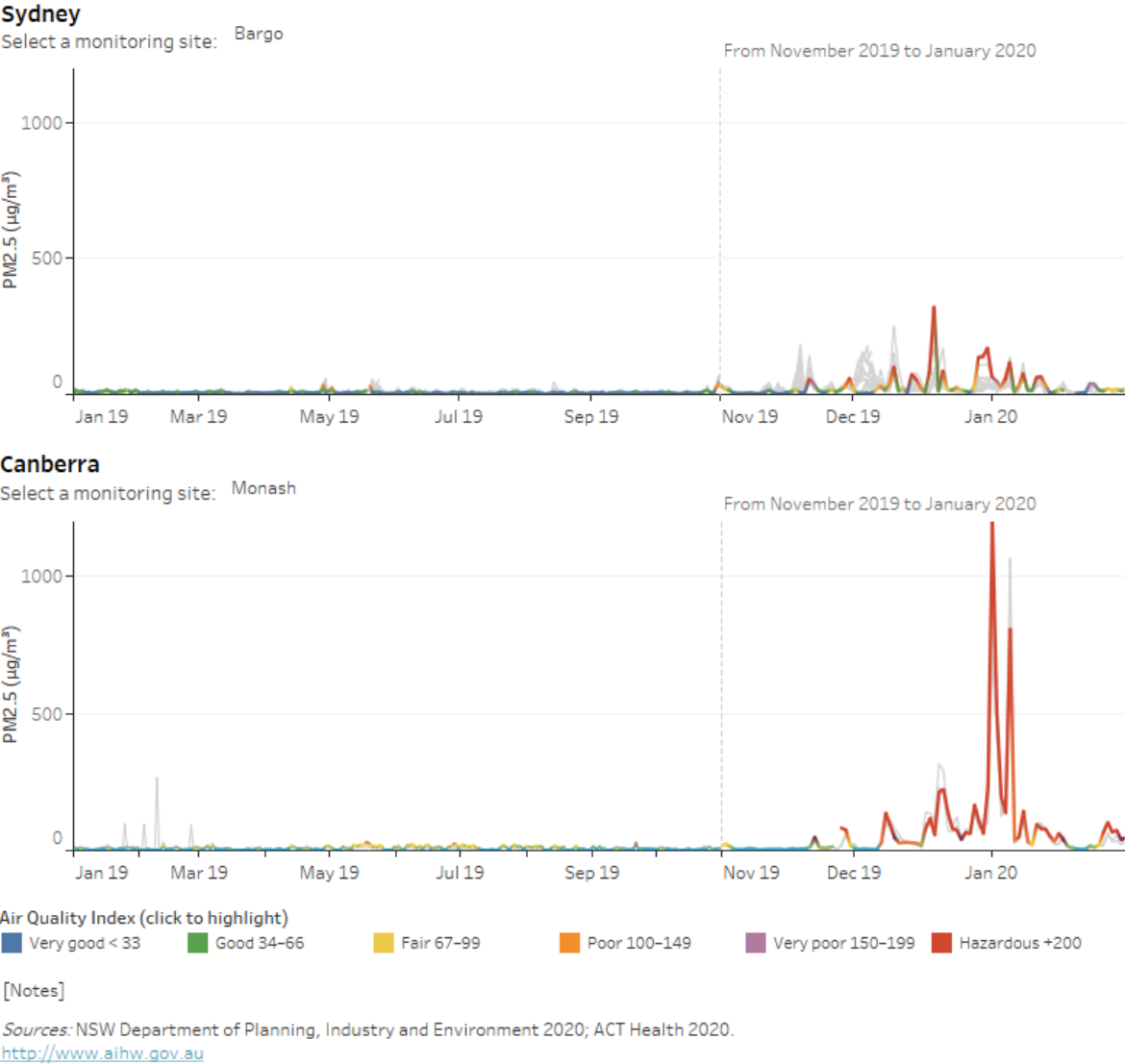
Although the AIHW will examine some of the more immediate impacts of the 2019–20 bushfire season on health for some fire-affected areas in a forthcoming release, data on the expected wide-ranging impacts are not available at the time of writing. However, modelled data from a range of sources estimates that, during the 19 weeks of continuous bushfire activity from September 2019 to February 2020, bushfire smoke was responsible for 417 excess deaths; 1,127 hospitalisations for cardiovascular problems; 2,027 hospitalisations for respiratory problems; and 1,305 presentations to emergency departments for asthma across NSW, Queensland, Victoria and the ACT

(Arriagada et al. 2020). The study was not able to consider the longer-term health effects of smoke inhalation over that period.

PM levels are expected to worsen with increased temperatures and greater frequency of events such as bushfires (Ebi & McGregor 2008; Jacob & Winner 2009; Spickett et al. 2011). Activities such as reduction in the use of wood for heating, uptake of electric cars and use of public transport may reduce urban air pollution (Keywood et al. 2016).

Vector-borne diseases

Disease vectors (such as mosquitoes) and disease micro-organisms (such as bacteria and viruses) are a natural part of the Australian environment.

Vector-borne diseases in Australia include Ross River virus, Barmah Forest virus, Murray Valley encephalitis, Kunjin and dengue. Cases of malaria in Australia currently occur only as a result of international travel.

Changes in climate are likely to extend the geographic spread and lengthen the transmission seasons of important vector-borne diseases and increase the likelihood of food- and water-borne disease (Bambrick et al. 2011; Jackson et al. 2016; WHO 2018b).

Since 1950, there has been a 14% increase in the main dengue mosquito's capacity to transmit disease to humans. This is projected to increase into the future (Zhang et al. 2018). Notifications of dengue virus infections in Australia have increased over the past 30 years, from typically a few hundred annually to typically over a thousand annually (Department of Health 2015).

Bacterial and viral contamination of food and water was responsible for 57,600 disease notifications in 2019 including around 35,800 caused by campylobacteria infection, 14,700 by salmonella and 3,100 by shigella (Department of Health 2020).

Where do I go for more information?

For more information on the natural environment and health, see:

- Health and the environment: a compilation of the evidence
- Department of the Environment and Energy Australia state of the environment 2016
- Bureau of Meteorology and CSIRO State of the climate 2018
- Medical Journal of Australia The 2019 report of the MJA–Lancet countdown on health and climate change: a turbulent year with mixed progress
- United Nations Intergovernmental Panel on Climate Change (IPCC)

References

ABS (Australian Bureau of Statistics) 2018. National Health Survey: first results, 2017−18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

ACT Health Directorate 2020. Particulate matter data from ACT air quality monitoring stations. Canberra: ACT Government. Viewed 6 February 2020.

AIHW (Australian Institute of Health and Welfare) 2011. Health and the environment: a compilation of evidence. Cat. no. PHE 136. Canberra: AIHW.

AIHW 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. Cancer in Australia 2019. Cancer series no. 119. Cat. no. CAN 123. Canberra: AIHW.

Australian Institute of Health and Welfare 2020. Cancer data in Australia. Cat. no. CAN 122. Canberra: AIHW.

AMA (Australian Medical Association) 2015. The AMA Position Statement on Climate Change and Human Health. Canberra: AMA. Viewed 30 October 2019.

Arriagada NB, Palmer AJ, Bowman DMJS, Morgan GG, Jalaludin BB & Johnston FH 2020. Unprecedented smoke-related health burden associated with the 2019–20 bushfires in eastern Australia. Medical Journal of Australia.

Australian Academy of Science 2019. The science of climate change. Canberra: Australian Academy of Science. Viewed 26 November 2019.

Bambrick HJ, Capon AG & Barnett GB 2011. Climate change and health in the urban environment: adaptation opportunities in Australian cities. Asia Pacific Journal of Public Health 23(Supplement 2): 67S–79S.

Beggs PJ, Zhang Y, Bambrick H, Berry HL, Linnenluecke MK, Trueck S et al. 2019. The 2019 report of the MJA–Lancet countdown on health and climate change: a turbulent year with mixed progress. Medical Journal of Australia 211(11): 490–491.

Biddle N, Edwards B, Herz D & Makkai T 2020. Exposure and the impacts on attitudes of the 2019–20 Australian bushfires. The Australian National University Social Research Centre. Canberra: The Australian National University. Viewed 25 March 2020.

Blanchi R, Leonard J, Haynes K, Opie K, James M, Kilinc M et al. 2012. Life and house loss database description and analysis. CSIRO, Bushfire Cooperative Research Centre report to the Attorney-General's Department. CSIRO.

Boer MM, Resco de Dios V & Bradstock RA 2020. Unprecedented burn area of Australian mega forest fires. Nature Climate Change 10(3):171−172.

BOM (Bureau of Meteorology) & CSIRO (Commonwealth Scientific and Industrial Research Organisation) 2018. State of the Climate 2018. Viewed 22 October 2019.

BOM 2019a. Special Climate Statement 72—dangerous bushfire weather in spring 2019. Melbourne: BOM. Viewed 19 February 2020.

BOM 2019b. Heatwave Service for Australia. Melbourne: BOM. Viewed 18 November 2019.

BOM 2020. Climate change—trends and extremes. Melbourne: BOM. Viewed 7 January 2020.

Bowler D, Buyung-Ali L, Knight T & Pullin AS 2010. The importance of nature for health: is there a specific benefit of contact with green space? Collaboration for Environmental Evidence 40.

Bryant RA, Gibbs L, Gallagher HC, Pattison P, Lusher D, MacDougall C et al. 2018. Longitudinal study of changing psychological outcomes following the Victorian Black Saturday bushfires. Australian & New Zealand Journal of Psychiatry 52(6):542–551.

Cancer Australia 2019. Sunburn and sun protection. Canberra: Cancer Australia. Viewed 4 November 2019.

Chen L, Verrall K & Tong S 2006. Air particulate pollution due to bushfires and respiratory hospital admissions in Brisbane, Australia. International Journal of Environmental Health Research 16(3):181–91.

Clemens S, Berry H, McDermott B & Harper C 2013. Summer of sorrow: measuring exposure to and impacts of trauma after Queensland's natural disasters of 2010–2011. Medical Journal of Australia 199(8): 552–55.

Cresswell I & Murphy H 2017. Biodiversity. Australia state of the environment 2016. Canberra: Department of the Environment and Energy. Viewed 10 November 2019.

Debelle G 2019. Climate change and the economy. Sydney: Reserve Bank of Australia. Viewed 31 October 2019.

Department of the Environment and Energy 2019. Adapting to climate change. Canberra: Department of the Environment and Energy. Viewed 23 December 2019.

Department of Health 2015. Introduction to the National Notifiable Diseases Surveillance System. Canberra: Department of Health. Viewed 2 November 2019.

Department of Health 2020. National Notifiable Diseases Surveillance System. Canberra: Department of Health. Viewed 9 January 2020.

DHHS (Department of Health and Human Services) 2009. January 2009 heatwave in Victoria: an assessment of health impacts. Victoria: Department of Health and Human Services. Viewed 18 November 2019.

Ebi K, Campbell-Lendrum D & Wyns A 2018. The 1.5 Health report: synthesis on health & climate science in the IPCC SR1.5. Geneva: World Health Organization.

Ebi KL & McGregor G 2008. Climate change, tropospheric ozone and particulate matter, and health impacts. Environmental Health Perspectives 116(11):1449–55.

Fewtrell L & Kay D 2008. An attempt to quantify the health impacts of flooding in the UK using an urban case study. Public Health 122(5):446–51.

Geoscience Australia 2019. Bushfire. Canberra: Geoscience Australia. Viewed 30 October 2019.

Hanigan IC, Butler CD, Kokic PM & Hutchinson MF 2012. Suicide and drought in New South Wales, Australia, 1970–2007. Proceedings of the National Academy of Sciences of the United States of America 109(35):13950–55.

IPCC (Intergovernmental Panel on Climate Change) 2014. Climate Change 2014: synthesis report. Contribution of working groups I, II and III to the fifth assessment report of the Intergovernmental Panel on Climate Change Geneva: IPCC. Viewed 6 November 2019.

Ivers LC & Ryan ET 2006. Infectious diseases of severe weather-related and flood-related natural disasters. Current Opinion in Infectious Diseases 19(5):408–14.

Jackson WJ, Argent RM, Bax NJ, Bui E, Clark GF, Coleman S et al. 2016. Australia state of the environment 2016. Canberra: Australian Government Department of the Environment and Energy. Viewed 3 November 2019.

Jacob DJ & Winner DA 2009. Effect of climate change on air quality. Atmospheric Environment 43(1):51–63.

Johnston F, Kavanagh A, Bowmann D & Scott R 2002. Exposure to bushfire smoke and asthma: an ecological study. Medical Journal of Australia 176(11):535–38.

Kalis MA, Miller MD & Wilson RJ 2009. Public health and drought. Journal of Environmental Health 72(1):10–11.

Keywood MD, Emmerson KM & Hibberd MF 2016. Ambient air quality. Canberra: Department of the Environment and Energy. Viewed 3 November 2019.

Kolbe A & Gilchrist KL 2009. An extreme bushfire smoke pollution event: health impacts and public health challenges. New South Wales Public Health Bulletin 20:19–23.

McFarlane AC, Clayer JR & Bookless CL 1997. Psychiatric morbidity following a natural disaster: an Australian bushfire. Social Psychiatry and Psychiatric Epidemiology 32(5):261–8.

McMichael AJ, Woodruff RE & Hales S 2006. Climate change and human health: present and future risks. The Lancet 367(9513):859–69.

Morgan G, Sheppeard V, Khalaj B, Ayyar A, Lincoln D, Jalaludin B et al. 2010. Effects of bushfire smoke on daily mortality and hospital admissions in Sydney, Australia. Epidemiology 21(1):47–55.

NEPC (National Environment Protection Council) 2019. NEPC annual reports. Canberra: NEPC. Viewed 17 October 2019.

NSW Department of Planning, Industry & Environment 2020. Current forecast air quality: search for and download air quality data. Sydney: NSW Department of Planning, Industry & Environment. Viewed 6 February 2020.

O'Brien LV, Berry HL, Coleman C & Hanigan IC 2014. Drought as a mental health exposure. Environmental Research 131:181–187. Viewed 31 October 2019.

Parks Victoria 2015. Valuing Victoria's parks. Victoria: Department of Environment, Land, Water and Planning. Viewed 3 November 2019.

Pope CA III & Dockery DW 2006. Health effects of fine particulate air pollution: lines that connect. Journal of the Air & Waste Management Association 56(6):709–42.

Pope CA III, Ezzati M & Dockery DW 2009. Fine-particulate air pollution and life expectancy in the United States. The New England Journal of Medicine 360(4):376–86.

Powers JR, Dobson AJ, Berry HL, Graves AM, Hanigan IC & Loxton D 2015. Lack of association between drought and mental health in a cohort of 45–61 year old rural Australian women. Australian and New Zealand Journal of Public Health 39(6):518–23.

Quiggin J 2007. Drought, climate change and food prices in Australia. Melbourne: Australian Conservation Foundation. Viewed 31 October 2019.

Spickett JT, Brown HL & Rumchev K 2011. Climate change and air quality: the potential impact on health. Asia Pacific Journal of Public Health 23 (Supplement 2):37S–45S.

Stanke C, Kerac M, Prudhomme C, Medlock J & Murray V 2013. Health effects of drought: a systematic review of the evidence. PLoS Currents 5.

Tham R, Erbas B, Akram M, Dennekamp M & Abramson MJ 2009. The impact of smoke on respiratory hospital outcomes during the 2002–2003 bushfire season, Victoria, Australia. Respirology 14(1):69–75.

The 2009 Victorian Bushfires Royal Commission. The 2009 Victorian Bushfires Royal Commission Final Report Summary. Victoria: Victorian Bushfires Royal Commission. Viewed 18 March 2020.

Thien F, Beggs PJ, Csutoros D, Darvall J, Hew M, Davies JM et al. 2018. The Melbourne epidemic thunderstorm asthma event 2016: an investigation of environmental triggers, effect on health services, and patient risk factors. Lancet Planet Health 2(6):e255–63.

UN (United Nations) 2019. Global Environment Outlook—GEO-6: summary for policymakers. Nairobi: UN. Viewed 3 November 2019.

Whitmee S, Haines A, Beyrer C, Boltz F, Capon AG, de Sousa Diaz BF et al. 2015. Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health. The Lancet 386(10007):1973–2028.

WHO (World Health Organization) 2018a. Climate change and health. Geneva: WHO. Viewed 20 November 2019.

WHO 2018b. COP24 special report: health and climate change. Geneva: WHO. Viewed 27 November 2019.

WHO 2019b. The known health effects of UV (the eye). Geneva: WHO. Viewed 18 November 2019.

WHO 2019a. The known health effects of UV (the skin). Geneva: WHO. Viewed 18 November 2019.

Williams S, Venugopal K, Nitchke M, Naim J, Fawcett R, Beattle GW et al. 2018. Regional morbidity and mortality during heatwaves in South Australia. International Journal of Biometeorology 62(10):1911–26.

WWF (World Wide Fund for Nature) & ZSL (Zoological Society of London) 2018. Living Planet report 2018: aiming higher. Switzerland: WWF. Viewed 18 November 2019.

Zhang Y, Beggs PJ, Bambrick H, Berry HL, Linnenluecke MK, Trueck S et al. 2018. The MJA–Lancet countdown on health and climate change: Australian policy inaction threatens lives. Medical Journal of Australia 209(11):474.

Overweight and obesity

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Overweight and obesity refer to excess body weight, which is a risk factor for many diseases and chronic conditions, and is associated with higher rates of death. It mainly occurs because of an imbalance between energy intake (from the diet) and energy expenditure (through physical activities and bodily functions).

Genetic factors, schools, workplaces, homes and neighbourhoods, the media, availability of convenience foods, and portion sizes can all influence a person's body weight.

Measuring overweight and obesity

Body Mass Index (BMI)

- BMI is an internationally recognised standard for classifying overweight and obesity in adults. While BMI does not necessarily reflect body fat distribution or describe the same degree of fatness in different individuals, at a population level BMI is a practical and useful measure for monitoring overweight and obesity.

- BMI is calculated by dividing a person's weight in kilograms by the square of their height in metres. A BMI of 25.0–29.9 is classified as overweight but not obese, while a BMI of 30.0 or over is classified as obese. A BMI of greater than 35.0 is classified as severely obese.

- To calculate your BMI and see how it compares with other Australian adults, enter your height and weight into the AIHW BMI calculator.

- Height and body composition are continually changing for children and adolescents, so a separate classification of overweight and obesity (based on age and sex) is used for young people aged under 18 (Cole et al. 2000).

Waist circumference

- Waist circumference is another common measure of overweight and obesity in adults. A waist circumference above 80 cm for women and 88 cm for men is associated with an increased risk of chronic disease. For information on measuring and understanding your waist circumference, see Heart Foundation.

How common is overweight and obesity?

Children and adolescents

In 2017–18, 1 in 4 (25%) children and adolescents aged 2–17 were overweight or obese (1.2 million children and adolescents). Of all children and adolescents aged 2–17, 17% were overweight but not obese, and 8.2% were obese. Rates varied across age groups, but were similar for males and females (ABS 2018).

Adults

In 2017–18, 2 in 3 (67%) Australians aged 18 and over were overweight or obese (36% were overweight but not obese, and 31% were obese). That's around 12.5 million adults.

More men than women were overweight but not obese (42% of men and 30% of women), but obesity rates for men and women were similar (33% of men and 30% of women).

Obesity is more common in older age groups—16% of adults aged 18–24 were obese, compared with 41% of adults aged 65–74.

See Overweight and obesity: an interactive insight for information on age differences in overweight and obesity.

The proportion of adults with a waist circumference associated with a substantially increased risk of metabolic complications increased with age, and was higher in women than men (peaking at 57% of men aged 65–74, and 65% of women aged 75–84) (ABS 2018).

Trends in overweight and obesity

Children and adolescents

The prevalence of overweight and obesity in children and adolescents aged 5–17 rose from 20% in 1995 to 25% in 2007–08, then remained relatively stable to 2017–18 (25%) (Figure 1). Similarly, the prevalence of obesity in this age group increased from 4.9% in 1995 to 7.5% in 2007–08 then remained relatively stable to 2017–18 (8.1%) (ABS 2009, 2013a, 2013b, 2015, 2019).

Rates of overweight but not obese children and adolescents increased between 1995 and 2014–15 (from 15% to 20%), then declined to 17% in 2017–18. This decline did not result in a lower proportion of overweight and obese children overall, but instead resulted in some children moving from the overweight to the obese category.

Figure 1: Proportion of overweight and obese children and adolescents aged 5–17, 1995 to 2017–18
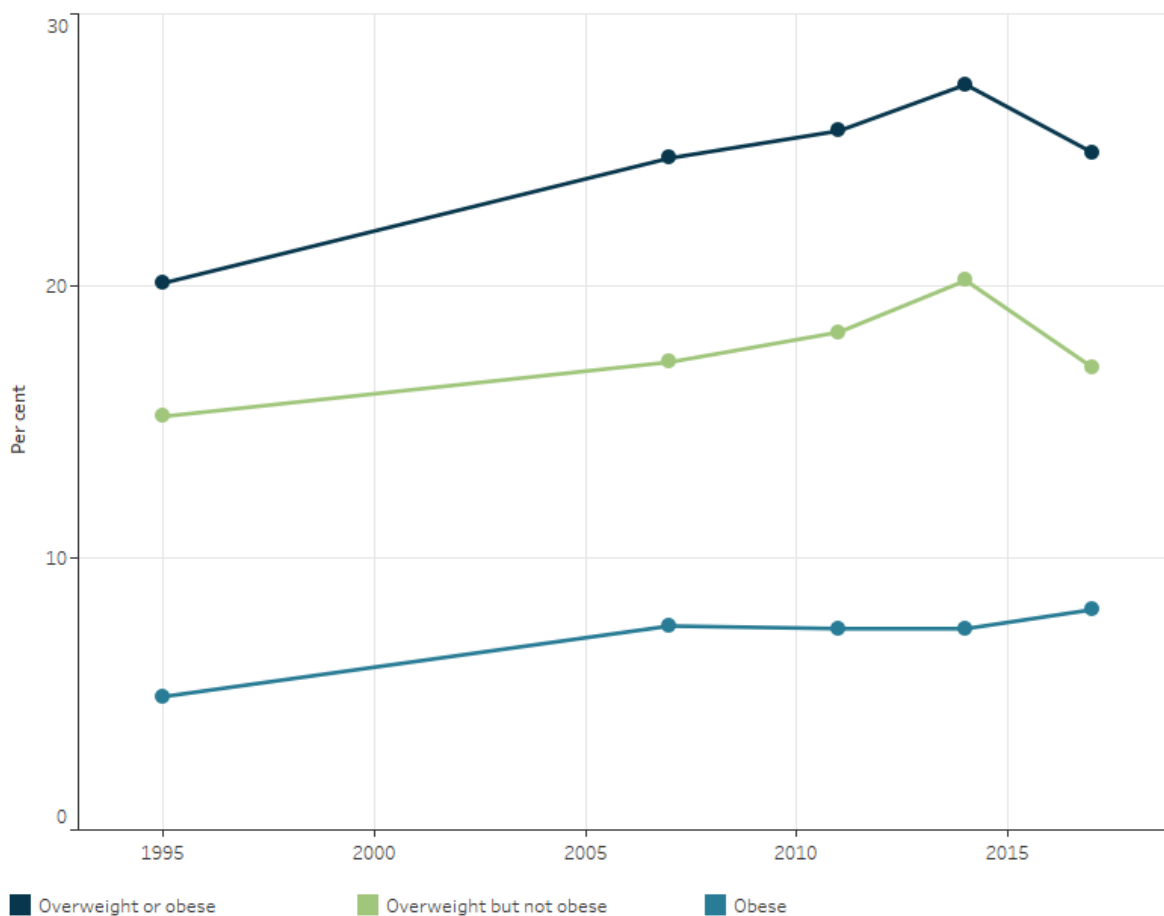
Notes:
1. Overweight and obesity classification is based on measured height and weight.
2. 95% CI = 95% confidence interval. We can be 95% confident that the true value is within this confidence interval.
3. In 2014–15 and 2017–18, imputation was used to obtain BMI for respondents aged 2–17 who did not have a measured BMI (38% of respondents for 2014–15 and 44% for 2017–18).
Sources: ABS 2009, 2013a, 2013b, 2015, 2019.
http://www.aihw.gov.au/

Adults

After adjusting for different population age structures over time, the prevalence of overweight and obesity among Australians aged 18 and over increased from 57% in 1995 to 67% in 2017–18. This was largely due to an increase in obesity rates, from 1 in 5 (19%) in 1995 to 1 in 3 (31%) in 2017–18.

The distribution of BMI in adults shifted towards higher BMIs from 1995 to 2017–18, due to an increase in obesity in the population over time (Figure 2).

Figure 2: Distribution of BMI among persons aged 18 and over, 1995 and 2017–18
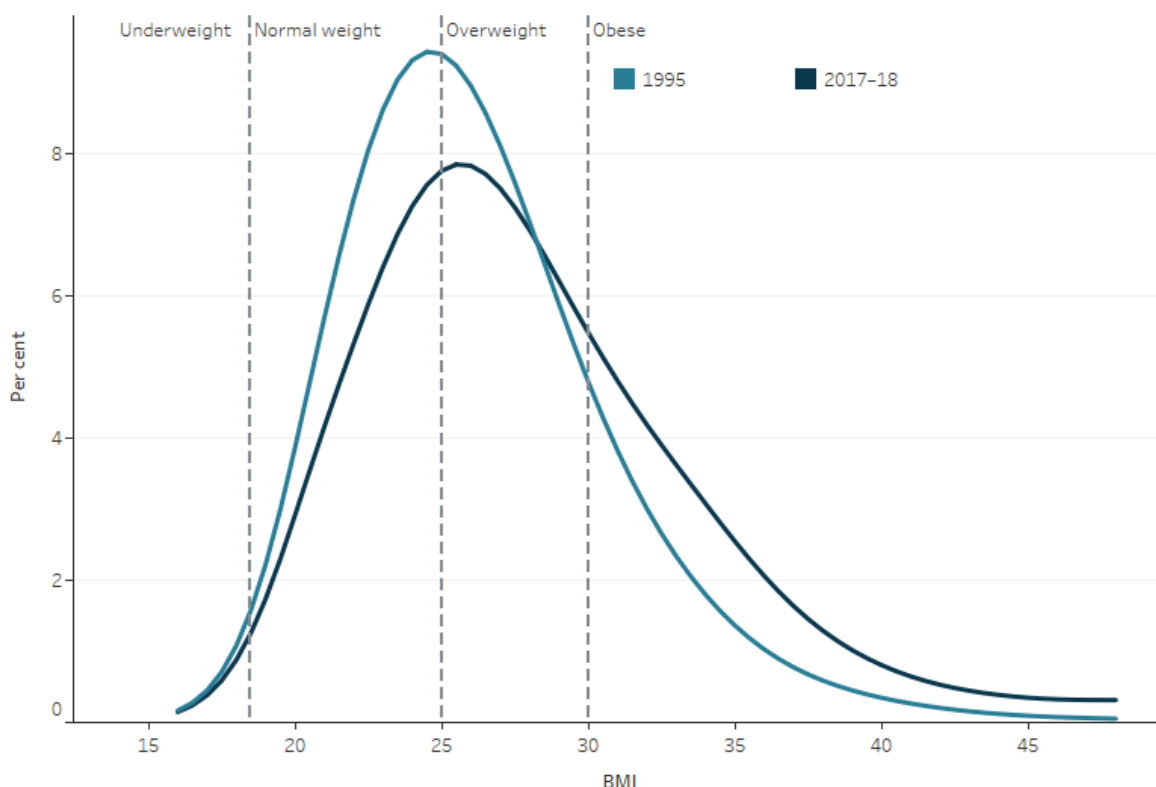
Notes:
1. The distributions have been smoothed, including the minimum and maximum values which are based on aggregates of 16 or less and 48 or more.
2. BMI classification is based on measured height and weight.
3. In 2017–18, imputation was used to obtain BMI for respondents aged 18 and over who did not have a measured BMI (34% of respondents).
Source: ABS 2013b, 2019.
http://www.aihw.gov.au/

Health impact

In 2015, 8.4% of the total burden of disease in Australia was due to overweight and obesity. Overweight and obesity was the leading risk factor contributing to non-fatal burden (living with disease) (AIHW 2019). See Burden of disease.

Overweight and obesity increases the likelihood of developing many chronic conditions, such as cardiovascular disease, asthma, back problems, chronic kidney disease, dementia, diabetes, and some cancers (AIHW 2017). It is also associated with a higher death rate when looking at all causes of death (di Angelantonio et al. 2016).

Variation between population groups

See Health risk factors among Indigenous Australians for information on overweight and obesity among Aboriginal and Torres Strait Islander Australians.

Remoteness area

Overweight and obesity rates differ across remoteness areas, with the lowest rates in *Major cities.*

In 2017–18, a higher proportion of Australian children and adolescents aged 2–17 living in *Inner regional* areas were overweight or obese, compared with those living in *Major cities* (29% and 23% respectively). For children and adolescents living in *Outer regional and remote* areas, the proportion was 27% (ABS 2019).

For Australians aged 18 and over, 70% of adults living in *Outer regional and remote* areas and 71% in *Inner regional* areas were overweight or obese, compared with 65% in *Major cities* (after adjusting for age)*.* See Rural and remote health.

Socioeconomic area

Overweight and obesity rates differ across socioeconomic areas, with the highest rates in the lowest socioeconomic areas.

In 2017–18, obesity rates for children and adolescents aged 2–17 were 2.4 times as high in the lowest socioeconomic areas (11%) compared with the highest socioeconomic areas (4.4%). For overweight and obesity combined, rates were also higher in the lowest socioeconomic areas (28%) compared with the highest socioeconomic areas (21%) (ABS 2019).

Australians aged 18 and over in the lowest socioeconomic areas were more likely to be overweight or obese than those in the highest socioeconomic areas in 2017–18: 72% compared with 62% (after adjusting for age). Obesity rates were the underlying reason for this difference (38% compared with 24% respectively). See Health across socioeconomic groups.

Where do I go for more information?

For more information on overweight and obesity, see:

- Overweight and obesity: an interactive insight
- A picture of overweight and obesity in Australia
- Overweight and obesity in Australia: a birth cohort analysis
- Australian Burden of Disease Study 2015: interactive data on risk factor burden
- Australian Bureau of Statistics National Health Survey: first results, 2017–18

Visit Overweight & obesity for more on this topic.

References

ABS (Australian Bureau of Statistics) 2009. National Health Survey: summary of results, 2007–08 (reissue). ABS cat. no. 4364.0. Canberra: ABS.

ABS 2013a. Australian Health Survey: updated results, 2011–12. ABS cat no. 4364.0.55.003. Canberra: ABS.

ABS 2013b. Microdata: National Nutrition Survey, 1995, Basic Confidentialised Unit Record File, DataLab. ABS cat. no. 4807.0.30.001. Findings based on AIHW analysis of ABS microdata. Canberra: ABS.

ABS 2015. National Health Survey: first results, 2014–15. ABS cat no. 4364.0.55.001. Canberra: ABS.

ABS 2018. National Health Survey: first results, 2017–18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019. Microdata: National Health Survey 2017–18. ABS cat. no. 4324.0.55.001. AIHW customised data request. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2017. Impact of overweight and obesity as a risk factor for chronic conditions: Australian Burden of Disease Study. Australian Burden of Disease Study series no. 11. Cat. no. BOD 12. Canberra: AIHW.

AIHW 2019. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015, Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

Cole TJ, Bellizzi MC, Flegal KM & Dietz WH 2000. Establishing a standard definition for child overweight and obesity worldwide: international survey. BMJ 320:1240–3.

di Angelantonio E, Bhupathiraju SN, Wormser D, Gao P, Kaptoge S, de Gonzalez AB et al. 2016. Body-mass index and all-cause mortality: individual-participant-data meta-analysis of 239 prospective studies in four continents. The Lancet 388:776–86.

Social determinants of health

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Evidence supports the close relationship between people's health and the living and working conditions which form their social environment (Wilkinson & Marmot eds. 2003). Factors such as socioeconomic position, conditions of employment, power and social support—known collectively as the social determinants of health—act together to strengthen or undermine the health of individuals and communities (see 'Social determinants of health in Australia' in Australia's health 2020: data insights).

The World Health Organization (WHO) describes social determinants as 'the circumstances in which people grow, live, work, and age, and the systems put in place to deal with illness. The conditions in which people live and die are, in turn, shaped by political, social, and economic forces' (CSDH 2008).

According to the WHO, social inequalities and disadvantage are the main reason for avoidable and unfair differences in health outcomes and life expectancy across groups in society.

This page provides selected data to monitor key social determinants of health in Australia.

See 'Social determinants of health in Australia' and 'Housing conditions and key challenges in Indigenous health' in Australia's health 2020: data insights for in-depth discussion of social determinants of health.

What are the social determinants of health?

'Social determinants of health' has rapidly become a central concept in population and public health, leading to the emergence of new theoretical models and frameworks.

Although there is no single definition of the social determinants of health, there are common usages across government and non-government organisations.

In 2003, the World Health Organization Europe suggested that the social determinants of health included socioeconomic position, early life, social exclusion, work, unemployment, social support, addiction, food and transportation (Wilkinson & Marmot eds. 2003).

Other commonly accepted social determinants of health include housing and the living environment, health services and disability.

Socioeconomic position

In general, every step up the socioeconomic ladder is accompanied by a benefit for health (see Health across socioeconomic groups). The relationship is two-way—poor health can be both a product of, and contribute to, lower socioeconomic position.

Socioeconomic position is often described through indicators such as educational attainment, income or level of occupation.

- In 2019, 65% of people aged 25–64 held a non-school qualification at Certificate III level or above, an increase of 17 percentage points since 2004 (ABS 2019a).

- Around 10.5% of the population lived in low income households (defined as less than half the median equivalised household income) in 2017–18. This rate has fluctuated between 9.3% and 13.6% since 2003–04 (AIHW 2018; ABS 2019c) (Figure 1).

- Among major occupation groups, Managers had the highest average weekly total cash earnings in 2018 ($2,425), and Sales workers, the lowest ($736) (ABS 2019b).

Figure 1: Selected social determinants of health, by disaggregation and period

Select disaggregation
- ● Education
- ○ Employment
- ○ Income

Proportion of persons aged 25–64 with a non-school qualification at Certificate III or above, 2004 to 2019

Legend:
- Persons
- Males
- Females

Note: From 2013, persons permanently unable to work were included in the scope of the Survey of Education and Work, and re-based estimated resident population data were used from 2014. These factors may affect the comparison of data over time.
Source: ABS 2019a.

http://www.aihw.gov.au/
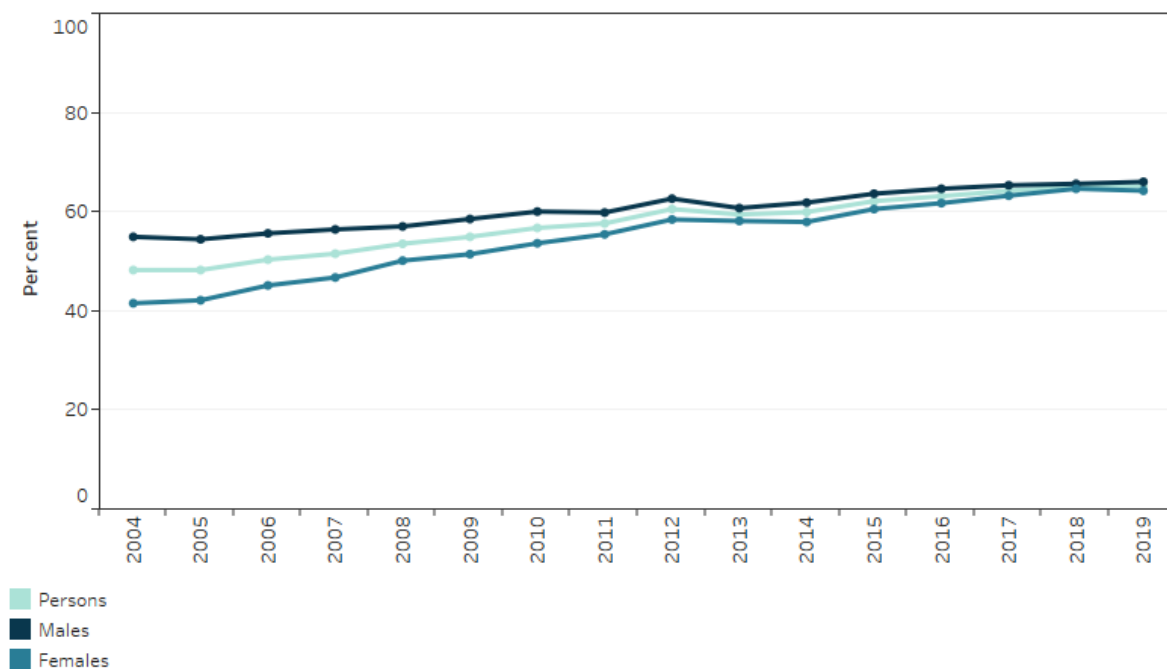
Early childhood

The foundations of adult health are laid in-utero and during the early childhood period. The different domains of early childhood development—physical, social/emotional and language/cognition—strongly influence school success, economic participation, social citizenship and health.

- In 2017, almost 4 in 5 children aged 0–2 (79%, or 738,000) were read to or told stories by a parent regularly (3 or more days in the previous week). One in 6 children (16%) were not read to or told stories at all. Parents living in highest socioeconomic areas (85%) were more likely to read or tell stories to their children than those living in lowest socioeconomic areas (70%) (AIHW 2019a).

- Between 2009 and 2018, the proportion of children entering school who were developmentally vulnerable on 1 or more Australian Early Development Census (AEDC) domains decreased slightly from 24% to 22%. In 2018, children in the lowest socioeconomic group (32%) were more vulnerable than children in the highest socioeconomic group (15%) (AIHW 2019a). See Transition to primary school.
- One in 10 (10%) children aged 4–12 scored in the 'of concern' range on the Strengths and Difficulties Questionnaire measuring social and emotional wellbeing in 2013–14, indicating substantial risk of clinically significant problems in their home, school and community environments (AIHW 2019a).

Family relationships

An individual's family can influence physical and mental health through providing access to services, products and activities, and through creating a safe and supportive emotional and learning environment.

As with other health determinants, the effects follow a continuum from large potential benefit in positively functioning and supportive families, to potential disadvantage in families with abuse or neglect.

- 87% of all families with children aged 10–11 rated their family cohesion as good, very good or excellent in 2014–15 (89% for couple families, 76% for one-parent families) (AIHW 2019b).
- Child abuse and neglect increases the risk of anxiety disorders, depressive disorders and suicide or self-inflicted injuries. When quantified as a risk factor for the burden of disease, the largest relative impacts in 2015 were among young adults (15–24 years; 8.0% of disease burden for females and 5.1% for males) and early working years (25–44 years; 6.5% for females and 4.7% for males) (AIHW 2019c).
- In 2016, 1 in 6 women (17% or 1.6 million) and 1 in 16 men (6.1% or 548,000) had experienced physical or sexual violence by a current or previous partner since the age of 15 (AIHW 2019d). See Family, domestic and sexual violence and Heath impacts of family, domestic and sexual violence.

Social support and exclusion

Social connectedness and the degree to which individuals form close bonds with others outside the family has been linked in some studies to lower morbidity and increased life expectancy. Strong social networks may benefit physical and mental health, through practical and emotional help and support, and through networks that help people find work or cope with economic and material hardship.

Social exclusion is a term that describes social disadvantage and lack of resources, opportunity, participation and skills which are essential for full participation in society (see Glossary). Social exclusion through discrimination or stigmatisation can cause

psychological damage and harm health through long-term stress and anxiety. Poor health can also lead to social exclusion. See [Social isolation and loneliness](#).

- An estimated 1 in 10 (9.5%, or around 1.8 million) Australians aged 15 and over reported lacking social support in 2016 (AIHW 2019g).

- In 2014, most people aged 18 and over (95%) reported being able to get support in times of crisis from people living outside the household, a similar prevalence to that in 2002 (94%) (AIHW 2019b).

- Almost 1 in 4 Australians (24%, or 4.8 million people) experienced some degree of social exclusion in 2017, with 5.6% (1.1 million) experiencing deep social exclusion and 1.2% (240,000) very deep social exclusion (Brotherhood of St Laurence & MIAESR 2019). The prevalence of deep social exclusion has remained relatively steady since 2006 (Productivity Commission 2018).

- 52% of Australians who had a long-term health condition or disability experienced some level of exclusion in 2017, with 16% experiencing deep social exclusion (Brotherhood of St Laurence & MIAESR 2019).

Employment and work

The psychosocial stress caused by unemployment has a strong impact on physical and mental health and wellbeing. Once employed, participating in quality work helps to protect health, instilling self-esteem and a positive sense of identity, while providing the opportunity for social interaction and personal development.

- The proportion of the Australian population aged 15–64 who are employed (employment-to-population ratio) has increased over the last 15 years, from a low of 69.9% in February 2004 to a current high of 74.6% in January 2020. Over the same period, the unemployment rate fluctuated between 4.0% (February 2008) and 6.5% (October 2014), with a rate of 5.4% in January 2020 (ABS 2020).

- In June 2017, there were 1.4 million jobless families in Australia (21% of all families)—a similar figure to that in June 2012 (20%)—and around 339,000 jobless families had dependants (11% of all families with dependants) (ABS 2017b).

- In November 2019, 1 in 11 (8.9%) employed people aged 15–64 were underemployed (not working the hours they would like to, and available to work)—7.0% and 10.9% of the male and female labour force, respectively (ABS 2020).

See [Employment trends](#) and [The experience of employment](#).

Housing and homelessness

Access to appropriate, affordable and secure housing can limit the physical and mental health risks presented by factors such as homelessness and overcrowding.

Evidence also supports a direct association between poor-quality housing and poor physical and mental health (Baker et al. 2016). Young people, Aboriginal and Torres

Strait Islander people, people with long-term health conditions or disability, people living in low income housing, or people who are unemployed or underemployed are at greater risk of living in poor-quality housing.

- More than 116,000 men, women and children, or 50 per 10,000 population, were estimated to be homeless on the night of the 2016 Census of Population and Housing, an increase of 10% from 45 per 10,000 population in 2006 (Figure 2) (ABS 2018). See Homelessness and homelessness services and Health of people experiencing homelessness.

- 43% of low income households were in rental stress in 2017–18, spending more than 30% of their gross income on housing costs. In 2007–08, 35% of low income households were in rental stress (AIHW 2019e). See Housing affordability.

- Nearly one-quarter (24%) of renters had windows or doors that did not close properly and 21% of renters had experienced leaks or flooding in 2016 (AIHW 2019e).

- In 2018, overcrowding in social housing, based on those households needing 1 or more extra bedrooms, was 4.9%. Overcrowding was higher for Indigenous housing at 14% (AIHW 2019f). See Indigenous housing.

Figure 2: Rate of homelessness, people per 10,000 population, by homelessness group, 2001 to 2016

Homelessness group
All homeless persons
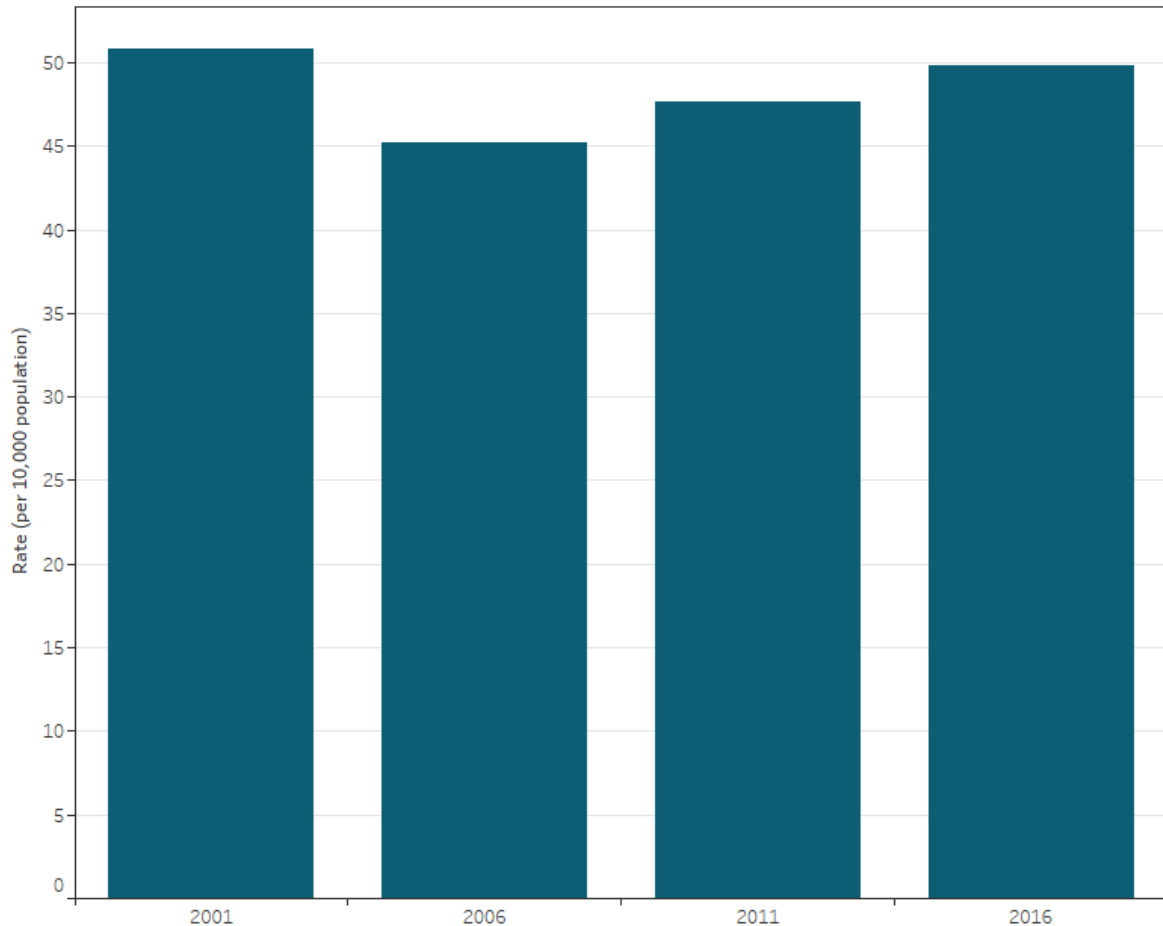
Note: Homelessness groups are mutually exclusive, therefore persons will only appear in one category.
Source: ABS 2018.
http://www.aihw.gov.au/

Monitoring social determinants of health

The AIHW has prioritised continuing monitoring of social determinants and the distribution of health across social groups. It investigates, where possible, which factors contribute to observed inequalities.

There is need for more research to assess the effects of the social determinants of health by following individual experiences over time and across generations. Linking health and welfare data has the potential to provide a broader understanding of the associations between social determinants and health, the experience of population groups, and better evidence for causal pathways to good health.

Where do I go for more information?

For more information on social determinants of health, see:

- [Australia's welfare snapshots](#)
- World Health Organization [Social determinants of health](#)

References

ABS (Australian Bureau of Statistics) 2017a. [Labour force, Australia: labour force status and other characteristics of families, June 2016](#). ABS cat. no. 6224.0.55.001. Canberra: ABS

ABS 2017b. [Labour force, Australia: labour force status and other characteristics of families, June 2017](#). ABS cat. no. 6224.0.55.001. Canberra: ABS.

ABS 2018. [Census of Population and Housing: estimating homelessness, 2016](#). ABS cat. no. 2049.0. Canberra: ABS.

ABS 2019a. [Education and work, Australia, May 2019](#). ABS cat. no. 6227.0. Canberra: ABS.

ABS 2019b. [Employee earnings and hours, Australia, May 2018](#). ABS cat. no. 6306.0. Canberra: ABS.

ABS 2019c. [Household income and wealth, Australia, 2017–18](#). Customised report. Canberra: ABS.

ABS 2020. [Labour force, Australia, Jan 2020](#). ABS cat. no. 6202.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2018. [Indicators of Australia's health: proportion of people with low income](#). Australia's health 2018. Cat. no. AUS 221. Canberra: AIHW.

AIHW 2019a. [Australia's children](#). Cat. no. CWS 69. Canberra: AIHW.

AIHW 2019b. [Australia's welfare indicators](#). Canberra: AIHW. Viewed 09 January 2020.

AIHW 2019c. [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015](#). Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019d. [Family, domestic and sexual violence](#). Canberra: AIHW. Viewed 09 January 2020.

AIHW 2019e. [Housing affordability](#). Canberra: AIHW. Viewed 09 January 2020.

AIHW 2019f. [National Social Housing Survey 2018: key results](#). Cat. no. HOU 311. Canberra: AIHW.

AIHW 2019g. [Social isolation and loneliness](#). Canberra: AIHW. Viewed 09 January 2020.

Baker E, Lester LH, Bentley R & Beer A 2016. Poor housing quality: prevalence and health effects. Journal of Prevention & Intervention in the Community 44:219–32.

Brotherhood of St Laurence & MIAESR (Melbourne Institute of Applied Economic and Social Research) 2019. [Social exclusion monitor](#). Melbourne: Brotherhood of St Laurence.

CSDH (Commission on Social Determinants of Health) 2008. Closing the gap in a generation: health equity through action on the social determinants of health. Final report of the Commission on Social Determinants of Health. Geneva: World Health Organization.

Productivity Commission 2018. Rising inequality? A stocktake of the evidence. Productivity Commission research paper. Canberra: Productivity Commission.

Wilkinson R & Marmot M eds. 2003. The social determinants of health: the solid facts, 2nd edn. Copenhagen: World Health Organization Europe.

Stress and trauma

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/stress-and-trauma

Stress and trauma affect the physical and emotional wellbeing of millions of Australians. It is difficult to get accurate information about the prevalence of stress and trauma and associated impacts because of the complex events and variation in individual responses.

Difference between stress and trauma

According to Gomes 2014, 'Trauma is an experience of extreme stress or shock that is/or was, at some point, part of life'. Traumatic events are often life-threatening and include events such as natural disasters, motor vehicle accidents, the illness of a close friend or family member, sexual assault or difficult child birth experiences. Stress is a reaction to less dramatic and actual life events such as a job loss, exams, deadlines, finances, or divorcing a spouse. While stress is not always harmful, trauma nearly always is.

What is stress?

According to the website MedicineNet, 'Stress is a physical, mental, or emotional factor that causes bodily or mental tension'. Stresses can be external (from the environment, psychological, or social situations) or internal (illness, or from a medical procedure). Stress can initiate the 'fight or flight' response, a complex reaction of the neurologic and endocrinologic systems. Continuous stress without relief can result in a condition called distress—a negative stress reaction that can lead to physical symptoms such as headaches, loss of appetite, increased blood pressure, chest pain, sexual dysfunction, and problems sleeping. Stress can also cause or influence a broad range of physical health conditions such as heart disease, diabetes, poor healing, irritable bowel syndrome, and mental disorders such as depression or anxiety (Gouin & Kiecolt-Glaser 2011; NIMH 2019; Stöppler 2018).What is trauma?

Any event that involves exposure to actual or threatened death, serious injury, or sexual violence has the potential to be traumatic. Most people will go through at least 1 traumatic event in their lives, but not everyone will respond in the same way. Australian research suggests that the most common traumatic events experienced by Australians are:

- experiencing an unexpected death of a close loved one
- witnessing a person critically injured or killed, or finding a body
- being in a life-threatening car accident (Phoenix Australia 2019).

Post-traumatic stress disorder (PTSD)

Following a traumatic event, many people develop post-traumatic symptoms, and a minority develop post-traumatic stress disorder (PTSD), which is a severe reaction to an extreme and frightening traumatic event (Phoenix Australia 2019). PTSD is typically characterised by all of the following:

- re-experiencing the traumatic event or events in vivid intrusive memories, flashbacks, or nightmares, typically accompanied by strong or overwhelming emotions, particularly fear or horror, and strong physical sensations
- avoiding thoughts and memories of the event or events, or avoidance of activities, situations, or people reminiscent of the event or events
- persistent perceptions of a heightened current threat, which, for example, might lead to hypervigilance, or reacting beyond what would normally be expected to something like an unexpected noise.

The symptoms persist for at least several weeks and cause significant impairment in personal, family, social, educational, occupational or other important areas of functioning (WHO 2019). In some cases, individuals remain symptomatic for 3 years or longer and may develop secondary problems such as substance misuse (National Collaborating Centre for Mental Health 2005).

Trauma and mental illness

Experience of trauma can contribute to development of many different forms of mental illness such as psychosis, schizophrenia, eating disorders, personality disorders, depressive and anxiety disorders, alcohol and substance use disorders, and self-harm and suicide-related behaviours (Heim et al. 2010; Phoenix Australia 2019). Childhood trauma experiences not only increase the risk of onset of mental illness but also affect clinical course and responses to treatment. Previous research has shown that 90% of public mental health clients have been exposed to (and most have actually experienced) multiple experiences of trauma (Jennings 2004). See Mental health.

How common is stress?

The Australian Bureau of Statistics (ABS) measures stress in 2 of its surveys: the National Health Survey (NHS) and the General Social Survey (GSS). It uses 2 methods to quantify a respondent's level of stress:

- the Kessler 10 (K10) psychological distress scale measuring non-specific psychological distress, based on questions about negative emotional states experienced in the past 30 days (ABS 2012)
- asking respondents whether they experienced 1 or more specific personal stressors.

Psychological distress

According to the 2017−18 ABS NHS, 13% or 2.4 million Australians aged 18 and over reported high or very high levels of psychological distress, a 12% increase from 2014−15 (11.7% or 2.1 million Australians). High or very high levels of psychological distress were more often reported by women than men in 2017−18 (15% and 11% respectively) (ABS 2019).

In 2017−18, adults living in the most disadvantaged areas (the first quintile) across Australia were more than twice as likely to report high or very high levels of psychological distress as adults living in the least disadvantaged areas (the fifth quintile) (18% and 9% respectively), similar to the pattern seen in 2014−15 (18% and 7% respectively) (ABS 2019).

Personal stressors

The ABS defines personal stressors as 'events or conditions that occur in a person's life that may adversely impact on the individual's or their family's health or wellbeing. A stressor may occur directly, such as personally experiencing a serious illness, or indirectly, such as having a family member with a serious illness. In some instances, personal stressors may have an ongoing impact or limit the capacity of a person, or family, to live a satisfying and productive life'. (ABS 2011).

According to the ABS General Social Survey, the proportion of Australians reporting at least 1 personal stressor did not change significantly between 2010 and 2014. In the survey, people were asked whether selected issues such as serious illness, death of a family member or difficulty getting a job had been a problem for them or their family or close friends in the last 12 months. Men were less likely than women to report a stressor.

In 2014, about 2 in 3 (63%) Australians aged 15 and over reported experiencing at least 1 personal stressor in the previous 12 months, with people in 1-parent families with children being more likely to experience personal stressors (ABS 2014).

How common is trauma and PTSD?

While there is limited data on the prevalence of trauma in Australia, 2 studies suggest that 57−75% of Australians will experience a potentially traumatic event at some point in their lives (Mills et al. 2011; Rosenman 2002). International studies estimate that 62−68% of young people will have been exposed to at least 1 traumatic event by the age of 17 (Copeland et al. 2007; McLaughlin et al. 2013).

According to the 2007 National Survey of Mental Health and Wellbeing, 12% of Australians experience PTSD in their life (lifetime prevalence), with women being at almost twice the risk of men (15.8% and 8.6% respectively) (ABS 2007). According to the 2017−18 National Health Survey, 1.7% of women and 1.3% of men reported that they

had been told by a doctor, nurse, or health professional that they have PTSD (point prevalence) (ABS 2019).

Trauma exposure is more common among specific groups such as people who experience homelessness, young people in out-of-home care or under youth justice supervision, refugees, women and children experiencing family and domestic violence, LGBTIQ people and certain occupation groups (for example emergency services, armed forces and veterans) (Bendall et al. 2018; Phoenix Australia 2013). As cumulative exposure to work-related traumatic events is associated with increased risk of PTSD, the rates of the disorder may be more likely among long-term emergency services employees than new recruits (Phoenix Australia, 2013). This is also supported by a study of the mental health of current and retired Australian firefighters, where prevalence of PTSD was more than two times higher in retired than current firefighters (18% and 7.7%, respectively) (Harvey et al. 2016). Historical and current trauma experienced as a result of separation from family, land, and cultural identity has also had a serious impact on the social and emotional wellbeing of Aboriginal and Torres Strait Islander people (Bendall et al. 2018; AIHW 2018). See Indigenous health and wellbeing.

What is the cost of stress and trauma?

Stress and trauma have a considerable economic impact on society. The Economic Cost of the Social Impact of Natural Disasters study reviewed some of the intangible costs: the 2010–11 Queensland floods and the 2009 Black Saturday bushfires in Victoria. Queensland residents affected by floods were 5.3 times more likely to report poorer health than those not affected, and 2.3 times more likely to develop PTSD (Alderman et al. 2013). Mental health issues represented the largest financial impact of the floods, with a lifetime cost estimated at $5.9 billion. In addition to more than 170 deaths and 400 injuries caused by bushfires in Victoria, the lifetime cost of the mental health issues was estimated to be more than $1 billion (Deloitte Access Economics 2016).

Prevention and management

According to Howlett & Stein, 'Public policy and public health interventions to reduce violence, traumatic injuries, and other traumatic events have a major role to play in the primary prevention of acute stress disorders and PTSD'. Secondary prevention includes targeted interventions for individuals at the highest risk of developing PTSD after trauma, including those with pre-existing psychiatric disorders, a family history of disorders and/or childhood trauma, and psychosocial and somatic approaches such as cognitive behavioural therapy (Breslau 2002; Howlett & Stein 2016). The recommendations made in the Australian Guidelines for the Treatment of Acute Stress Disorder and Posttraumatic Stress Disorder (Phoenix Australia 2013) remain the recommended practice for Australian health providers; however, beyond PTSDs, evidence for treatment of trauma is scarce (Bendall et al. 2018).

Primary prevention—intervening before health effects occur, through measures such as vaccinations, altering risky behaviours (poor eating habits, tobacco use), and banning substances known to be associated with a disease or health condition.

Secondary prevention—screening to identify diseases in the earliest stages, before the onset of signs and symptoms, through measures such as mammography and regular blood pressure testing (CDC 2017).

People are negatively affected by stress when they have not developed a stable set of strategies for coping with stressors. Stress management is recognised as an effective treatment modality and may include drugs as well as non-drug components such as psychological and relaxation methods including meditation, progressive muscle relaxation, and yoga, and adopting a healthy lifestyle (Chen & Kottler 2012).

Where do I go for more information?

For more information on stress and trauma, see:

- Australian Bureau of Statistics (ABS) National Health Survey: first results, 2017–18
- ABS National Survey of Mental Health and Wellbeing: summary of results, 2007
- Orygen 2008 Trauma and young people: moving toward trauma-informed services and systems
- Phoenix Australia

References

ABS (Australian Bureau of Statistics) 2007. National Survey of Mental Health and Wellbeing: summary of results, 2007. ABS cat. no. 4326.0. Canberra: ABS.

ABS 2011. General Social Survey: summary results, Australia, 2010. ABS cat.no. 4159.0. Canberra: ABS.

ABS 2012. Information paper: Use of the Kessler Psychological Distress Scale in ABS health surveys, Australia, 2007–08. ABS cat. no. 4817.0.55. Canberra: ABS.

ABS 2014. General Social Survey: summary results, Australia, 2014. ABS cat.no. 4159.0. Canberra: ABS.

ABS 2019. National Health Survey: first results, 2017–18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

Alderman K, Turner LR & Tong S 2013. Assessment of the health impacts of the 2011 summer floods in Brisbane. Disaster Medicine and Public Health Preparedness 7(4):380–6.

AIHW (Australian Institute of Health and Welfare) 2018. Aboriginal and Torres Strait Islander Stolen Generations and descendants: numbers, demographic characteristics and selected outcomes. AIHW Cat.no. IHW 195. Canberra: AIHW.

Bendall S, Phelps A, Browne V, Metcalf O, Cooper J, Rose B et al. 2018. Trauma and young people. Moving toward trauma-informed services and systems. Melbourne: Orygen, The National Centre of Excellence in Youth Mental Health.

Breslau N 2002. Epidemiologic studies of trauma, posttraumatic stress disorder, and other psychiatric disorders. The Canadian Journal of Psychiatry 47(10):923–9.

CDC (Centers for Disease Control and Prevention) 2017. Picture of America: prevention. Atlanta: United States Department of Health and Human Services. Viewed 5 February 2020.

Chen DD & Kottler JA 2012. Stress management and prevention: applications to everyday life. New York & London: Routledge.

Copeland WE, Keeler G, Angold A & Costello EJ 2007. Traumatic events and posttraumatic stress in childhood. Archives of General Psychiatry 64(5):577–84.

Deloitte Access Economics 2016. The economic cost of the social impact of natural disasters. Viewed 19 December 2019.

Gomes S 2014. Engaging touch & movement in somatic experiencing® Trauma resolution approach. New York: International University for Graduate Studies. Viewed 5 February 2020.

Gouin JP & Kiecolt-Glaser JK 2011. The impact of psychological stress on wound healing: methods and mechanisms. Immunology and allergy clinics of North America 31(1):81–93.

Harvey SB, Milligan-Saville JS, Paterson HM, Harkness EL, Marsh AM, Dobson M et al. 2016. The mental health of fire-fighters: an examination of the impact of repeated trauma exposure. Australian and New Zealand Journal of Psychiatry 50(7):649–58.

Heim C, Shugart M, Craighead WE & Nemeroff CB 2010. Neurobiological and psychiatric consequences of child abuse and neglect. Developmental Psychobiology 52(7):671–90.

Howlett JR & Stein MB 2016. Prevention of trauma and stressor-related disorders: a review. Neuropsychopharmacology 41(1):357–69.

Jennings A 2004. Models for developing trauma-informed behavioral health systems and trauma-specific services. Viewed 28 September 2019.

MedicineNet 2018. Medical definition of stress. Viewed 28 September 2018.

McLaughlin KA, Koenen KC, Hill ED, Petukhova M, Sampson NA, Zaslavsky AM & Kessler RC 2013. Trauma exposure and posttraumatic stress disorder in a national sample of adolescents. Journal of the American Academy of Child and Adolescent Psychiatry 52(8):815–30.e14.

Mills KL, McFarlane AC, Slade T, Creamer M, Silove D, Teesson M & Bryant R 2011. Assessing the prevalence of trauma exposure in epidemiological surveys. Australian and New Zealand Journal of Psychiatry 45(5):407–15.

National Collaborating Centre for Mental Health 2005. Post-traumatic stress disorder: the management of PTSD in adults and children in primary and secondary care. Leicester, United Kingdom: Gaskell.

NIMH (National Institute of Mental Health) 2019. Fact sheet on stress. NIMH publication no. 19-MH-8109. Bethesda: NIMH. Viewed 6 February 2020.

Phoenix Australia 2013. Australian Guidelines for the Treatment of Acute Stress Disorder & Posttraumatic Stress Disorder. Melbourne: Phoenix Australia, Centre for Posttraumatic Mental Health.

Phoenix Australia 2019. What is trauma? Melbourne: Phoenix Australia. Viewed 28 September 2019.

Rosenman S 2002. Trauma and posttraumatic stress disorder in Australia: findings in the population sample of the Australian National Survey of Mental Health and Wellbeing. Australian and New Zealand Journal of Psychiatry 36(4):515–20.

Stöppler MC 2018. Stress facts. Viewed 28 September 2019.

WHO (World Health Organization) 2019. International Classification of Diseases 11th Revision: the global standard for diagnostic health information. Geneva: WHO. Viewed 10 October 2019.

Tobacco smoking

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https://www.aihw.gov.au/reports/australias-health/tobacco-smoking

Tobacco smoking is the leading cause of preventable diseases and death in Australia. Successful public health strategies over many decades have resulted in a significant decline in daily smoking proportions, with Australia now having one of the lowest daily smoking proportions among Organisation for Economic Cooperation and Development countries. Despite these positive changes, the harm from tobacco smoking continues to affect current smokers and ex-smokers, as well as non-smokers through their exposure to second-hand smoke (AIHW 2019).

How many people smoke?

The latest data from the National Drug Strategy Household Survey (NDSHS) estimated that 11.6% of adults smoked daily in 2019. This daily smoking rate has declined from an estimated 12.8% in 2016 and has halved since 1991 (25%) (2020a) (Figure 1a).

Similarly, data from the National Health Survey (NHS) 2017−18 show that smoking rates declined steadily over the nearly 3 decades to 2017−18 and, after adjusting for age, the proportion of adults who are daily smokers has halved since 1989–90 (ABS 2019a; ABS 2019b) (Figure 1b).

Data sources

A number of nationally representative data sources are available to analyse recent trends in tobacco smoking. The NDSHS and NHS have collected data on tobacco smoking for a number of years. Data presented on this page are from the 2019 NDSHS and the 2017–18 NHS, as this was latest smoking data available.

Comparisons of data from the NDSHS and NHS show variations in estimates for tobacco smoking but similar long-term trends.

For more information on tobacco smoking from the 2019 NDSHS go to National Drug Strategy Household Survey 2019.

Figure 1a: National Drug Strategy Household Survey 2019, tobacco smoking status by sex, aged 18 and over, 2001 to 2019

Click to view National Health Survey data

Smoking status
- ◉ Daily smokers
- ○ Ex-smokers
- ○ Never smoked

Sex ■ Males ■ Females ■ Persons
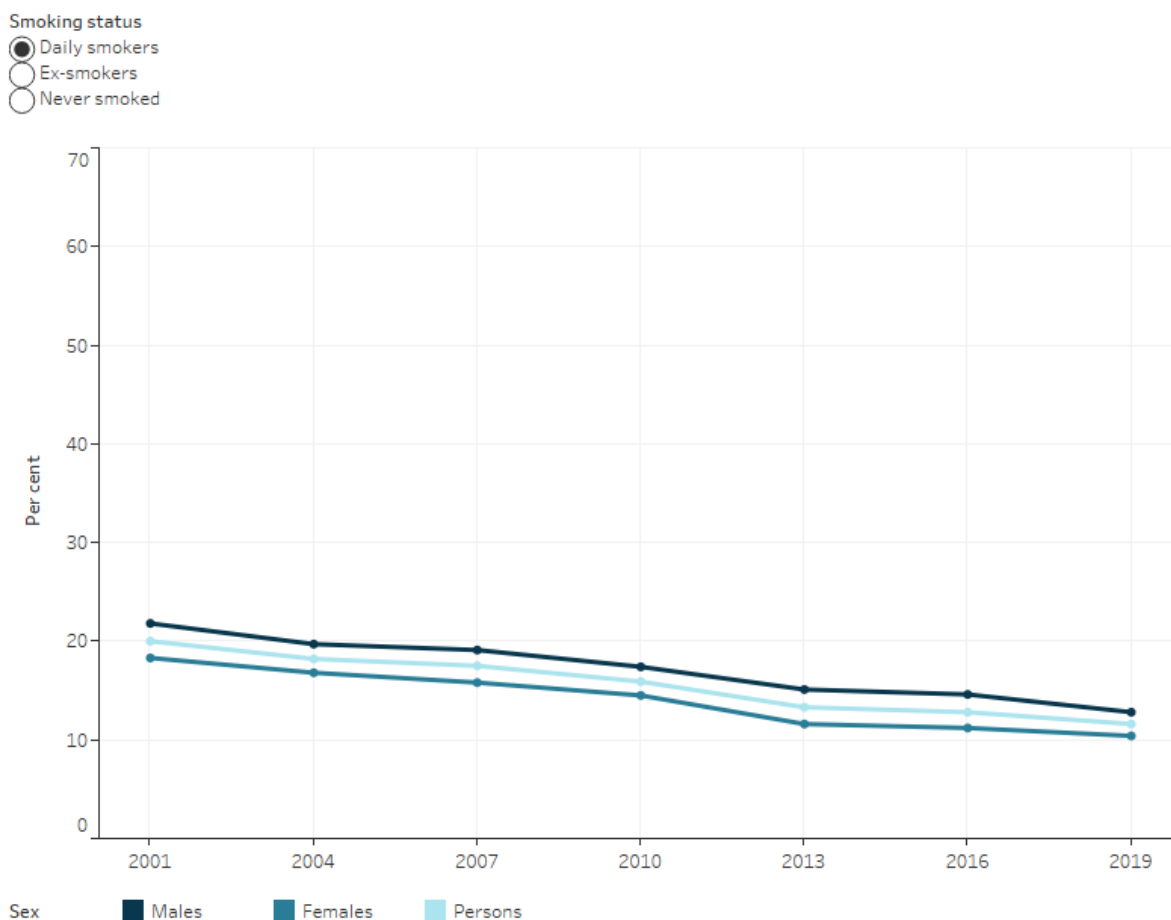
[Notes]

Source: NDSHS 2019.
http://www.aihw.gov.au/

How many cigarettes do adults smoke?

In 2019, the NDSHS reported current smokers aged 18 and over smoked an average of 12.9 cigarettes per day, a decrease from 15.9 cigarettes in 2001. Men and women smoked a similar number of cigarettes per day in 2019—average of 13.1 and 12.9 cigarettes per day respectively (AIHW 2020a).

In 2019, the proportion of pack-a-day (20 cigarettes or more) smokers increased with age—2 in 5 people (approximately 40%) in age groups 40 and over smoked more than 20 cigarettes per day, compared to 1 in 5 (approximately 20%) people aged 18–39 (AIHW 2020a).

Trends

The 2019 NDSHS found that people in their 40s and 50s had the highest daily smoking proportions (15.8% and 15.9%, respectively)—different from the situation in 2001, when people in their 20s and 30s were the most likely to smoke daily.

Between 2016 and 2019, the proportion of people who smoked daily fell for people in their 20s and 30s but there was no change for people in their 40s, 50s and 60s. Over the period of 2001 to 2019, for people aged 18–39, the proportion smoking daily has halved but there has been little improvement among people in their 50s and 60s (AIHW 2020a).

The proportion of adults aged 18 and over who never smoked increased from 48% in 2001 to 60% in 2016 and remained stable at 61% in 2019 (AIHW 2020a). Similarly, findings from the NHS show the proportion of adults who have never smoked is increasing over time, from 52.6% in 2014–15 to 55.6% in 2017–18 (or from 52.9% in 2014–15 to 56.1% in 2017–18, after adjusting for age) (ABS 2019b).

In 2019, adolescents aged 14–17 and young adults aged 18–24 were more likely to have never smoked than any other age group (97% and 80%, respectively). This proportion remained fairly stable since 2016 (96% and 79%, respectively) and represents an increase in the proportion of adolescents and young adults who never smoked since 2001 (82% and 58%, respectively). Of the young adults aged 18–24, nearly 8 in 10 (77%) men reported they never smoked in 2019; this has remained stable since 2013 (76%) but has increased since 2001 (56%). More than 8 in 10 (83%) women aged 18–24 reported in 2019 that they had never smoked, an increase from 59% in 2001 and similar to 2016 (79%) (AIHW 2020a).

Age and sex

In 2019, among those aged 18 and over, men were more likely than women to smoke daily (12.8% compared with 10.4%). The proportion of women who smoke daily has remained stable between 2016 and 2019 (11.2% compared with 10.4%), while the proportion of men who smoke daily has decreased from 14.6% in 2016 to 12.8% in 2019. The greatest difference between the sexes was among 40–49 year olds, with more men (18.4%) smoking daily than women (13.4%) in 2019 (Figure 2).

Figure 2: Daily smokers, by age and sex, 2019
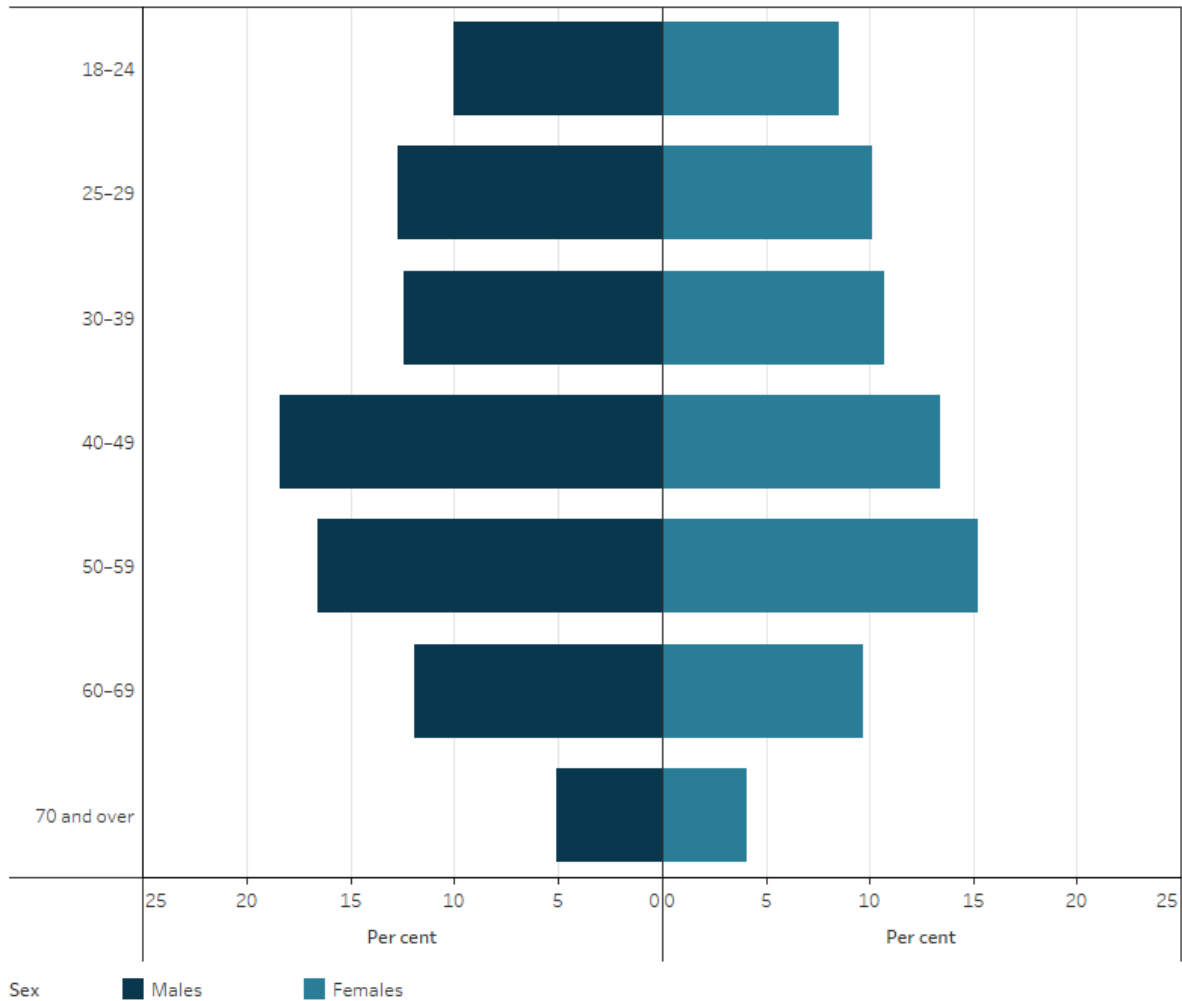
Note: 'Daily smoker' refers to people who reported smoking tobacco at least once a day (includes manufactured (packet) cigarettes, roll-your-own cigarettes, cigars or pipes). Excludes chewing tobacco, electronic cigarettes (and similar) and smoking of non-tobacco products.

Source: NDSHS 2019.
http://www.aihw.gov.au/

Variation between population groups

See Health risk factors among Indigenous Australians among Aboriginal and Torres Strait Islander Australians.

Although there has been a large reduction in smoking rates over time, smoking remains a major risk factor contributing to the health, social and economic inequalities experienced by certain population groups in Australia. While some improvements are being made, the 2019 NDSHS shows daily smoking continues to be more commonly reported among people living in the lowest socioeconomic areas, people living in *Outer regional* or *Remote and very remote* areas, people who are unable to work or unemployed, and people who completed Year 11 or below and people with a Certificate

III or IV (Figure 3). See [Health across socioeconomic groups](#) and [Rural and remote health](#).

Figure 3: Proportion of people who are daily smokers aged 18 and over, by selected demographic characteristics, 2019

All
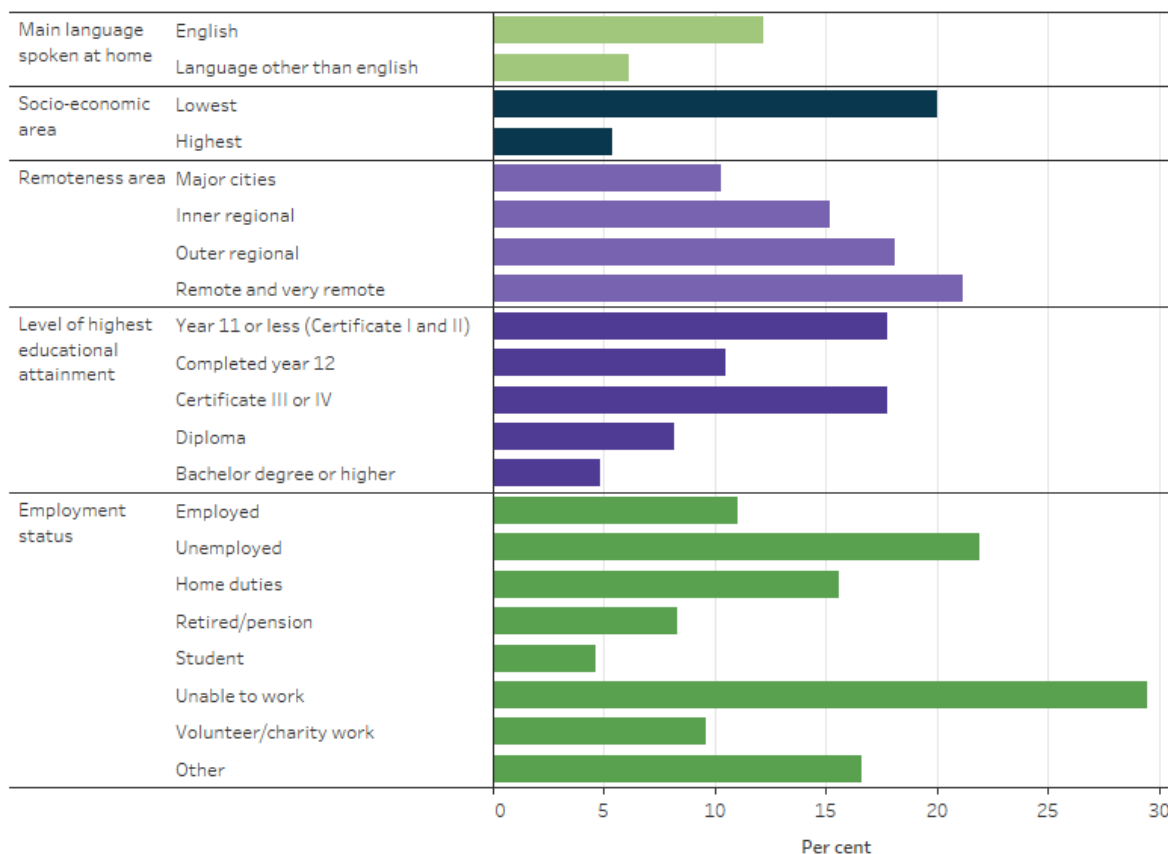
Notes:
1. Socio-economic area and remoteness area are age-standardised to the 2001 Australian standard population.
2. Lowest – Highest Quintile refers to area-based quintiles classified according to Socio-Economic Indexes for Areas 2016 (SEIFA 2016), specifically the Index of Relative Socio-economic Advantage and Disadvantage (IRSAD).
Source: NDSHS 2019.
http://www.aihw.gov.au/

Electronic cigarettes

Electronic cigarettes (also known as e-cigarettes, e-cigs, electronic nicotine delivery systems, electronic non-nicotine delivery systems, alternative nicotine delivery systems, personal vaporisers, e-hookahs, vape pens or vapes) are devices designed to deliver nicotine and/or other chemicals via an aerosol vapour that the user inhales (Greenhalgh & Scollo 2018). Most e-cigarettes contain a battery, a liquid cartridge and a vaporisation system and are used in a manner that simulates smoking (ACT Health 2019). The liquid solution used in e-cigarettes can contain nicotine, but also flavourings and other chemicals. In Australia, it is illegal to sell e-cigarettes and e-liquids that contain nicotine in any form (Cancer Council 2017), however, it may be lawful for people to import up to 3 months' personal supply of

nicotine for personal therapeutic use in e-cigarettes with a written authorisation from a doctor, subject to state and territory laws (TGA 2019).

Australian governments have taken a precautionary approach to the marketing and use of e-cigarettes in view of the risks these products pose to tobacco control and population health. This approach is underpinned by the current state of evidence regarding: the direct harms e-cigarettes pose to human health, their impacts on smoking initiation and cessation, uptake among youth and dual use with conventional tobacco products (Byrne et al 2018; Gotts et al 2019; Kennedy et al 2019).

New questions about the frequency and duration of e-cigarette use were added to the NDSHS in 2016. According to the NDSHS in 2019:

- current use of e-cigarettes reported by people aged 18 and over increased from 1.2% in 2016 to 2.6% in 2019

- among current smokers aged 18 and over, almost 2 in 5 (38%) had tried e-cigarettes in their lifetime (an increase from 31% in 2016) and 9.6% currently use them (an increase from 4.4% in 2016)

- among non-smokers aged 18 and over, 6.8% had tried e-cigarettes in their lifetime (an increase from 4.7% in 2016) and 1.4% currently use them (an increase from 0.6% in 2016)

- e-cigarette use was higher among younger age groups with 64% of smokers aged 18–24 trying an e-cigarette in their lifetime, compared with 26% of smokers aged 60–69 (AIHW 2020a).

In 2017, 1 in 5 (21%) secondary school students aged 16–17 had tried e-cigarettes (Guerin & White 2018).

The most common reason for trying e-cigarettes for people aged 18 and over was curiosity (53%), but people's reasons varied by age (AIHW 2020a).

Burden of disease

Smoking was responsible for 9.3% of the total burden of disease in Australia in 2015, making it the leading risk factor contributing to disease burden. Almost three-quarters (73%) of the burden due to smoking was fatal—that is, due to premature death. In 2015, smoking was responsible for more than 1 in every 8 (21,000) deaths.

Cancers accounted for 43% of the burden of disease from smoking, and almost two-thirds of this was from lung cancer (28% of total burden). Chronic obstructive pulmonary disease (COPD) accounted for 30% of the burden, followed by cardiovascular diseases (17%) primarily related to coronary heart disease (10%) and stroke (3.1%) (AIHW 2019).

Tobacco use has remained the leading risk factor, but the disease burden from smoking fell from 10.5% of total burden to 9.3% between 2003 and 2015. After adjusting for age, the rate of disease burden from smoking showed a decrease of 24% between 2003 and 2015, with a greater decrease in males than females. The burden also fell for all 6 of the leading diseases that are linked to smoking (COPD, lung cancer, coronary heart disease,

stroke, oesophageal cancer and asthma). However, while the burden linked to current smoking decreased, the burden linked to past smoking (ex-smokers) rose. This is likely to be because some diseases associated with smoking, such as lung cancer and COPD, can take many years to develop. As a result, the effects of past smoking are expected to continue to have an impact on disease burden in the near future, even if smoking rates continue to decrease (AIHW 2019). See Burden of disease.

A major Australian study estimated that mortality from cardiovascular disease (CVD) is almost 3 times higher in current smokers than never smokers (Banks et al. 2019). Quitting smoking at any age substantially reduces a person's risk of CVD, with those quitting by age 45 avoiding almost all of the excess risk (Banks et al. 2019).

Remoteness area

The burden of disease attributable to tobacco use is unequally distributed across Australia. In remote and very remote areas tobacco use was responsible for 10.7% of the total burden of disease, compared with 8.5% in major cities in 2015. After adjusting for age, rates similarly showed that burden of disease attributable to tobacco use increases as remoteness increases, with *Remote and very remote* areas experiencing 1.8 times the burden of *Major cities* (AIHW 2019).

Socioeconomic area

There was a clear gradient of decreasing burden as socioeconomic position increased. In the lowest socioeconomic areas (those experiencing the highest socioeconomic disadvantage), tobacco use was responsible for 11.7% of the total burden of disease, compared with 6.5% in the highest socioeconomic areas (those experiencing the least disadvantage). After adjusting for age, rates similarly showed that burden of disease attributable to tobacco use was 2.6 times higher in the lowest socioeconomic area than in the highest socioeconomic area (AIHW 2019).

Second-hand smoke

Exposure to second-hand smoke affects people of all ages and can cause cardiovascular and respiratory diseases in adults, and in infants and children can cause low birthweight and sudden infant death syndrome, and induce and exacerbate a range of mild to severe respiratory effects (WHO 2018).

Results from the 2019 NDSHS show that parents and guardians are choosing to reduce their children's exposure to smoke inside the home. The proportion of households with dependent children where someone smoked inside the home fell from 19.7% in 2001 to 2.8% in 2016 and to 2.1% in 2019 (AIHW 2020a).

Between 2016 and 2019, the proportion of adult non-smokers exposed to tobacco smoke inside the home decreased from 2.9% to 2.4%, this was lower than in 2001 (10.6%) (AIHW 2020a).

Proportions of smoking during pregnancy in Australia have fallen over time, with fewer than 1 in 10 (9.6%, or 28,219) mothers who gave birth smoking at some time during their pregnancy in 2018, a decrease from 15% in 2009 (AIHW 2020b).

Social impact

Despite the decline in smoking proportions in Australia over recent decades, a significant health and economic burden is experienced by individuals and society. The total net cost of smoking in Australia in 2015–16 has been estimated at $136.9 billion, comprising $19.2 billion in tangible costs and $117.7 billion in intangible costs. The largest of these tangible costs was spending on tobacco by dependent smokers ($5.5 billion), followed by workplace costs ($5.0 billion) and the reduction in economic output due to premature mortality ($3.4 billion). Intangible costs were estimated using the value of life lost and pain and suffering caused by smoking-attributable ill health ($25.6 billion), and premature mortality ($92.1 billion) (Whetton et al. 2019).

Where do I go for more information?

For more information on tobacco smoking, see:

- Alcohol, tobacco & other drugs in Australia
- National Drug Strategy Household Survey 2019
- Burden of tobacco use in Australia: Australian Burden of Disease Study 2015
- Australian Burden of Disease Study 2015: interactive data on risk factor burden
- Australian Bureau of Statistics National Health Survey: first results, 2017–18

Visit Smoking for more on this topic

References

ABS (Australian Bureau of Statistics) 2019a. National health survey, first results, 2017–18. Cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2019b. National Health Survey, 2017–18. Customised report. Canberra: ABS.

ACT Health 2019. Electronic cigarettes. Viewed 21 January 2020.

AIHW (Australian Institute of Health & Welfare) 2019. Burden of Tobacco Use in Australia: Australian Burden of Disease Study 2015. Cat. no. BOD 20. Canberra: AIHW.

AIHW 2020a. National Drug Strategy Household Survey 2019. Drug statistics series no. 32. Cat. no. PHE 270. Canberra: AIHW.

AIHW 2020b. Australia's mothers and babies 2018 — in brief. Perinatal statistics series no. 35. Cat. No. PER 100. Canberra: AIHW.

Banks E, Joshy G, Korda RJ, Stavreski B, Soga K, Egger S et al. 2019. Tobacco smoking and risk of 36 cardiovascular disease subtypes: fatal and non-fatal outcomes in a large prospective Australian study. BMC Medicine 28(128):1–18.

Byrne S, Brindal E, Williams G, Anastasiou KM, Tonkin A, Battams S and Riley MD (2018). E-cigarettes, smoking and health. A Literature Review Update. CSIRO, Australia.

Cancer Council 2017. National Cancer Control Policy: position statement—electronic cigarettes. Viewed 13 June 2018.

Gotts et al 2019. What are the respiratory effects of e-cigarettes? BMJ.

Greenhalgh EM & Scollo MM 2018. In Depth 18B: electronic cigarettes (e-cigarettes). In: Scollo MM and Winstanley MH (eds). Tobacco in Australia: facts and issues. Melbourne: Cancer Council Victoria. Viewed 12 June 2019.

Guerin N & White V 2018. Australian secondary students' use of tobacco, alcohol, over-the-counter drugs, and illicit substances in 2017. Victoria: Centre for Behavioural Research in Cancer. Viewed 5 November 2019.

Kennedy et al 2019. The cardiovascular effects of electronic cigarettes: A systematic review of experimental studies. Preventive Medicine.

TGA (Therapeutic Goods Administration) 2019. Electronic cigarettes. Viewed 4 May 2020.

WHO (World Health Organization) 2018. Tobacco Fact sheet.

Whetton S, Tait R, Scollo M, Banks E, Chapman J, Dey T et al. 2019. Identifying the social costs of tobacco use to Australia in 2015/16. Perth: National Drug Research Institute, Curtin University.

Health system

Health systems play a crucial role in health and can help to reduce the burden that ill health places on the community. Australia's health system is a complex mix of programs and services delivered by a range of health professionals.

Alcohol and other drug treatment services

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/alcohol-and-other-drug-treatment-services

Alcohol and other drug use is linked to increased risk of injury, mental illness, preventable disease, road trauma and death (AIHW 2020a). Alcohol and other drug treatment services help people to address their own drug use, and provide support to their family and friends. Treatment objectives can include reducing or stopping drug use, and improving social and personal functioning. Treatment services include detoxification, rehabilitation, counselling and pharmacotherapy, and are delivered in residential and non-residential settings.

See Alcohol risk and harm and Illicit drug use for information on use of alcohol and other drugs.

Data sources

- Information on publicly funded alcohol and other drug treatment services in Australia, and the people and drugs treated, is collected through the Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS NMDS).

- The National Opioid Pharmacotherapy Statistics Annual Data (NOPSAD) collection contains information on pharmacotherapy treatment—that is, opioid substitution therapy (OST)—provided to people dependent on opioid drugs.

- Agencies whose sole function is to prescribe or provide dosing services for opioid pharmacotherapy are excluded from the AODTS NMDS, as data from these agencies are captured in the NOPSAD collection (AIHW 2020b and AIHW 2020c).

Who uses alcohol and other drug treatment services?

In 2018–19, the AODTS NMDS reported that around 137,000 clients aged 10 and over received just under 220,000 closed treatment episodes from 1,283 publicly funded alcohol and other drug treatment agencies.

Clients of alcohol and other drug treatment services were more likely to be male (65%) than female (35%), and most likely to be aged 20–39 (54%). Around 1 in 6 (17%) clients identified as Aboriginal or Torres Strait Islander Australians, representing a rate of 3,580 clients per 100,000.

Between 2014–15 and 2018–19, the estimated number of clients who received treatment increased by 19% (from 115,000 clients to 137,000). This equates to a rate of 623 clients per 100,000 people in 2018–19, compared with 555 clients per 100,000 in 2014–15.

Who receives opioid pharmacotherapy treatment?

The NOPSAD collection reported that more than 50,000 clients received opioid pharmacotherapy treatment at more than 2,900 dosing points across Australia on a snapshot day in mid-2019.

These clients had broadly similar characteristics to the clients receiving alcohol and other drug treatment services, but were more likely to be slightly older. Pharmacotherapy clients were more likely to be male (67%) than female, and most likely to be aged 30–49 (64% of clients). Around 1 in 10 (10%, or 5,184) clients identified as Indigenous Australians.

For which drugs do people seek treatment?

In 2018–19, the AODTS NMDS indicated that alcohol was the principal drug of concern (PDOC) that led the largest percentage of clients to seek alcohol and other drug treatment services. However, between 2014–15 and 2018–19, the proportion of closed treatment episodes for alcohol fell from 38% to 36%. By contrast, the proportion of closed treatment episodes attributable to amphetamines rose from 20% to 28% (Figure 1).

Figure 1: Proportion of closed treatment episodes for own drug use by selected principal drugs of concern, 2014–15 to 2018–19
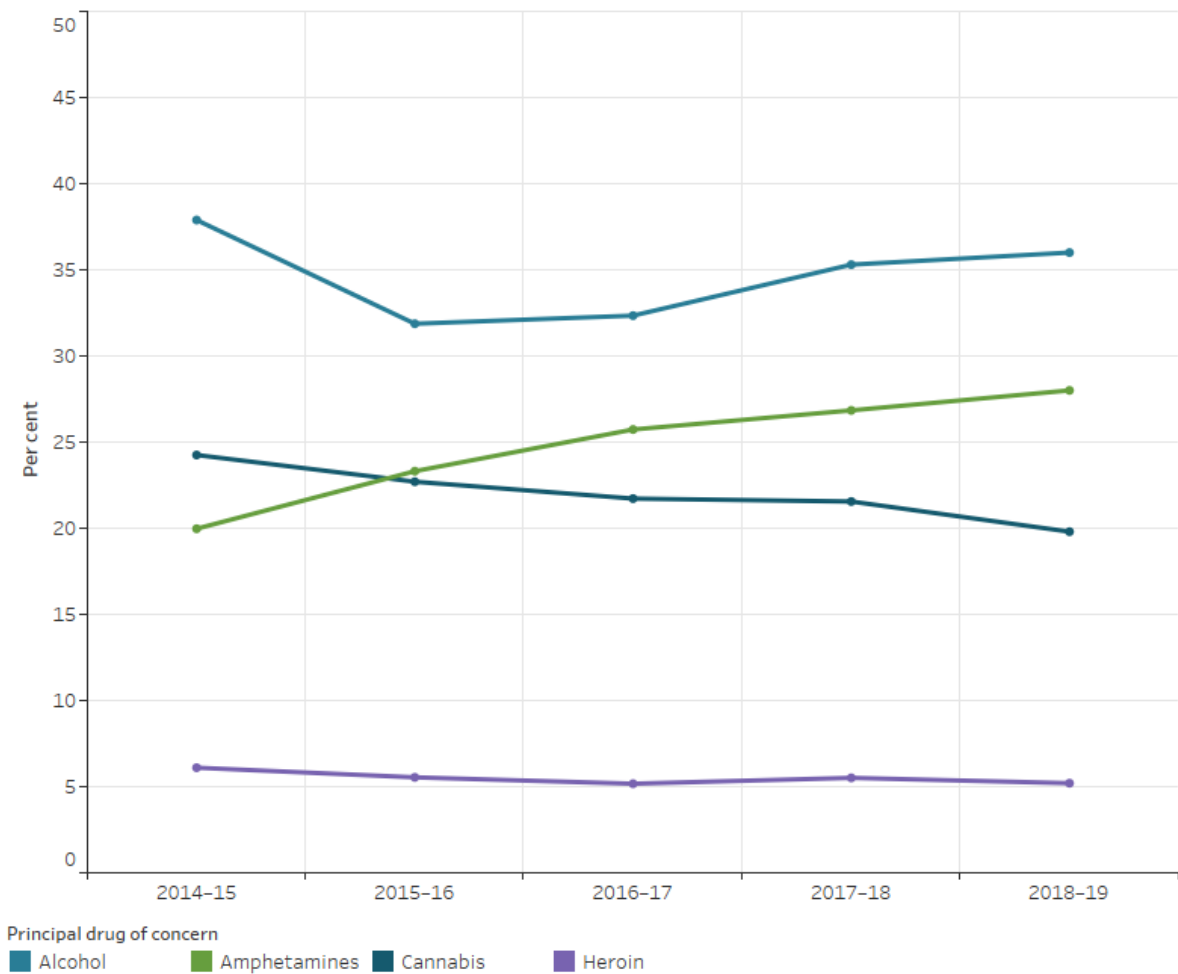
In 2019, the NOPSAD collection reported that heroin continued to be the most common (37%) opioid drug of dependence for clients receiving opioid pharmacotherapy treatment. However, 2 in 5 (39%) clients did not state their opioid drug of dependence (Figure 2).

Figure 2: Clients receiving pharmacotherapy treatment on a snapshot day, by opioid drug of dependence, 2015 to 2019
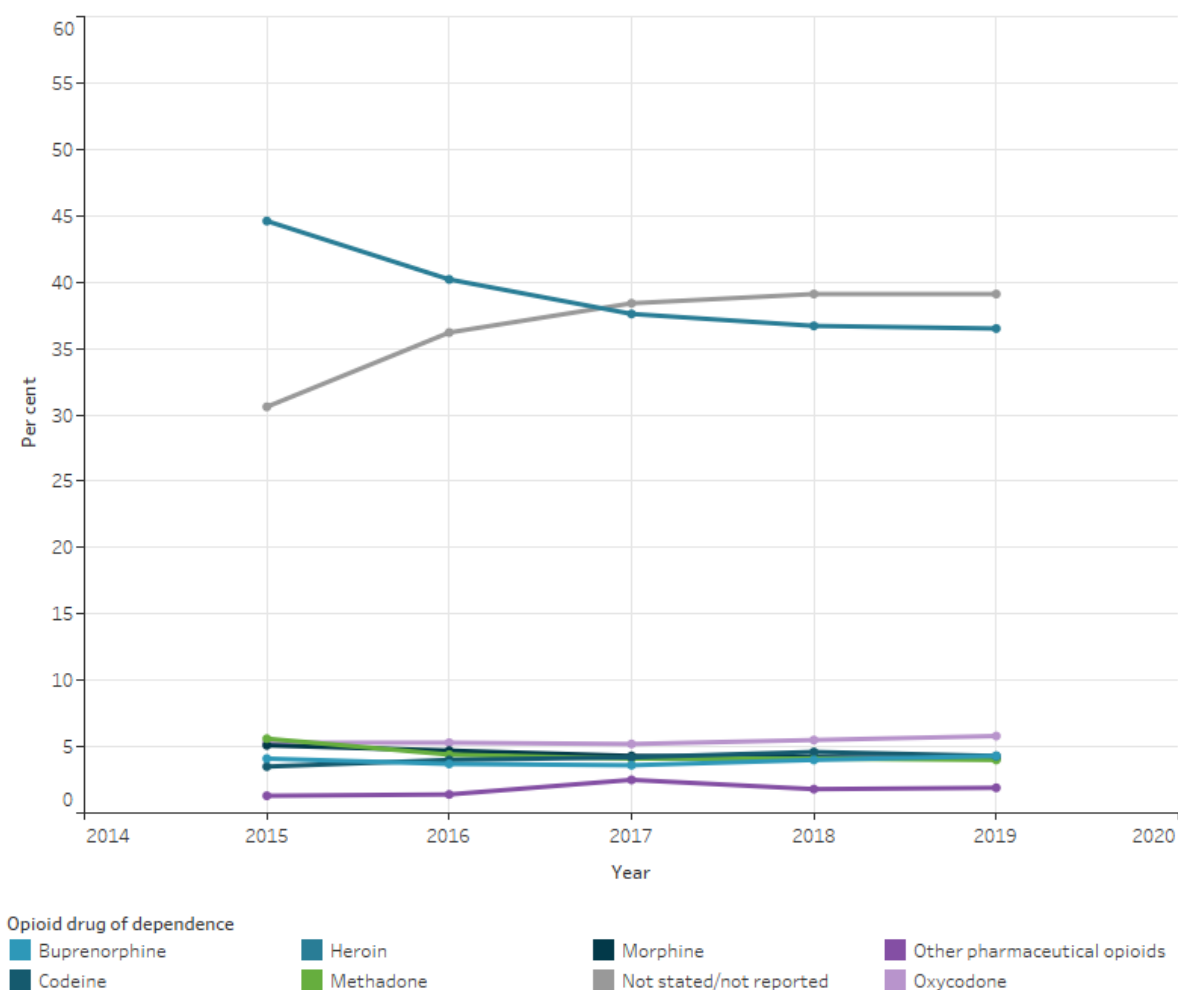
Source: AIHW 2020c.
http://www.aihw.gov.au/

How do treatment patterns vary across age groups?

The AODTS NMDS reported that clients of different age groups sought treatment for different drugs of concern. In 2018–19:

- where cannabis was the principal drug of concern, most clients were aged 10–19 (32%) or 20–29 (36%)

- where amphetamines were the principal drug of concern, most clients (71%) were aged 20–39

- where alcohol was the principal drug of concern, most clients were comparatively older—52% were aged 40 and over and only 5.1% were aged 10–19 (Figure 3).

Figure 3: Alcohol and other drug treatment service clients by selected principal drugs of concern and age group, Australia, 2018–19

Age group
- 60+
- 50–59
- 40–49
- 30–39
- 20–29
- 10–19
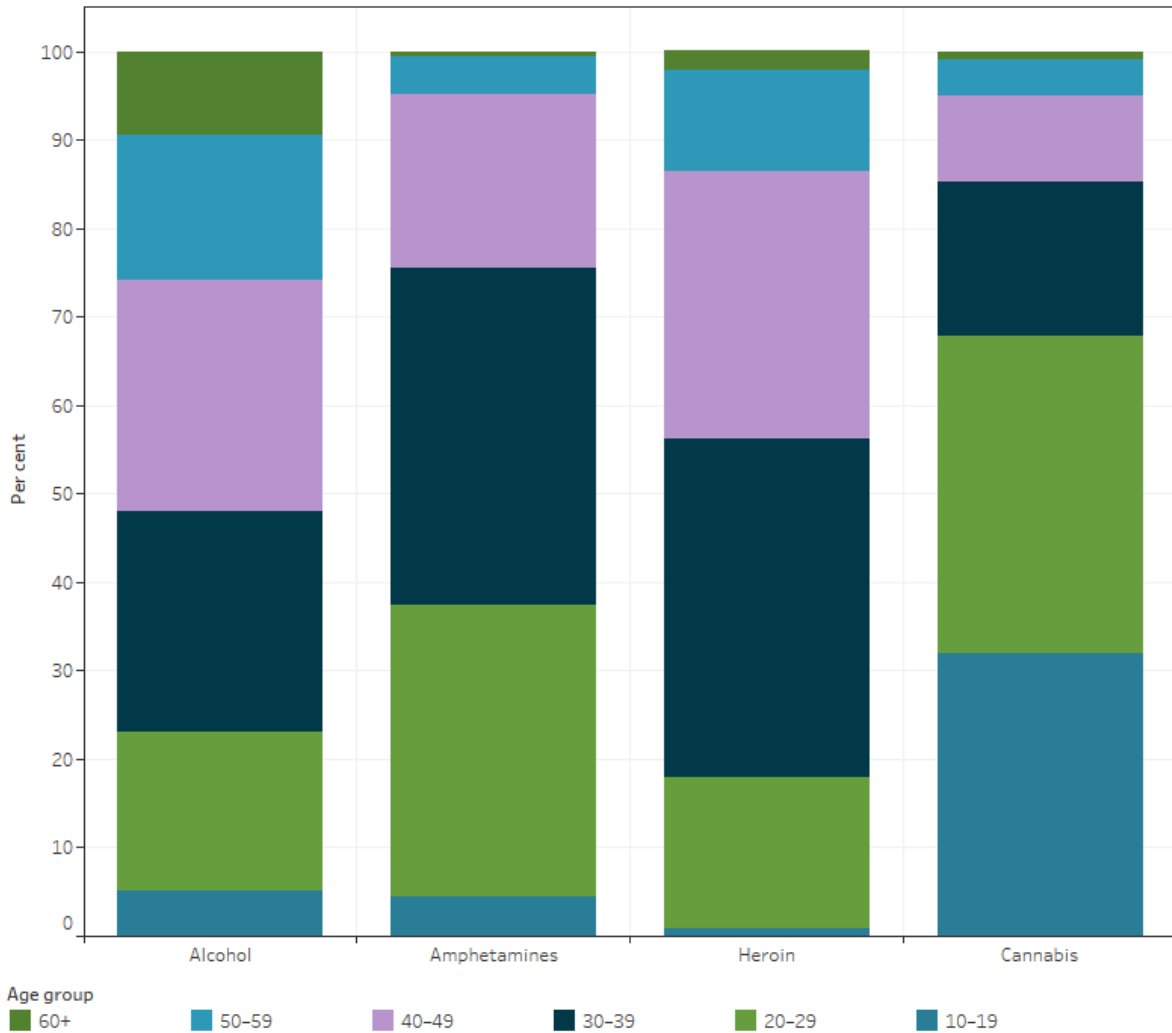
Type of treatment and management

In 2018–19, the AODTS NMDS indicated that counselling continued to be the most common (38%) main treatment type provided to clients accessing alcohol and other drug treatment services for their own drug use, followed by assessment only (19%) and

withdrawal management (12%) (Figure 4).

Figure 4: Proportion of closed episodes for clients' own drug use by main treatment type, 2014–15 to 2018–19

Year
2018–19
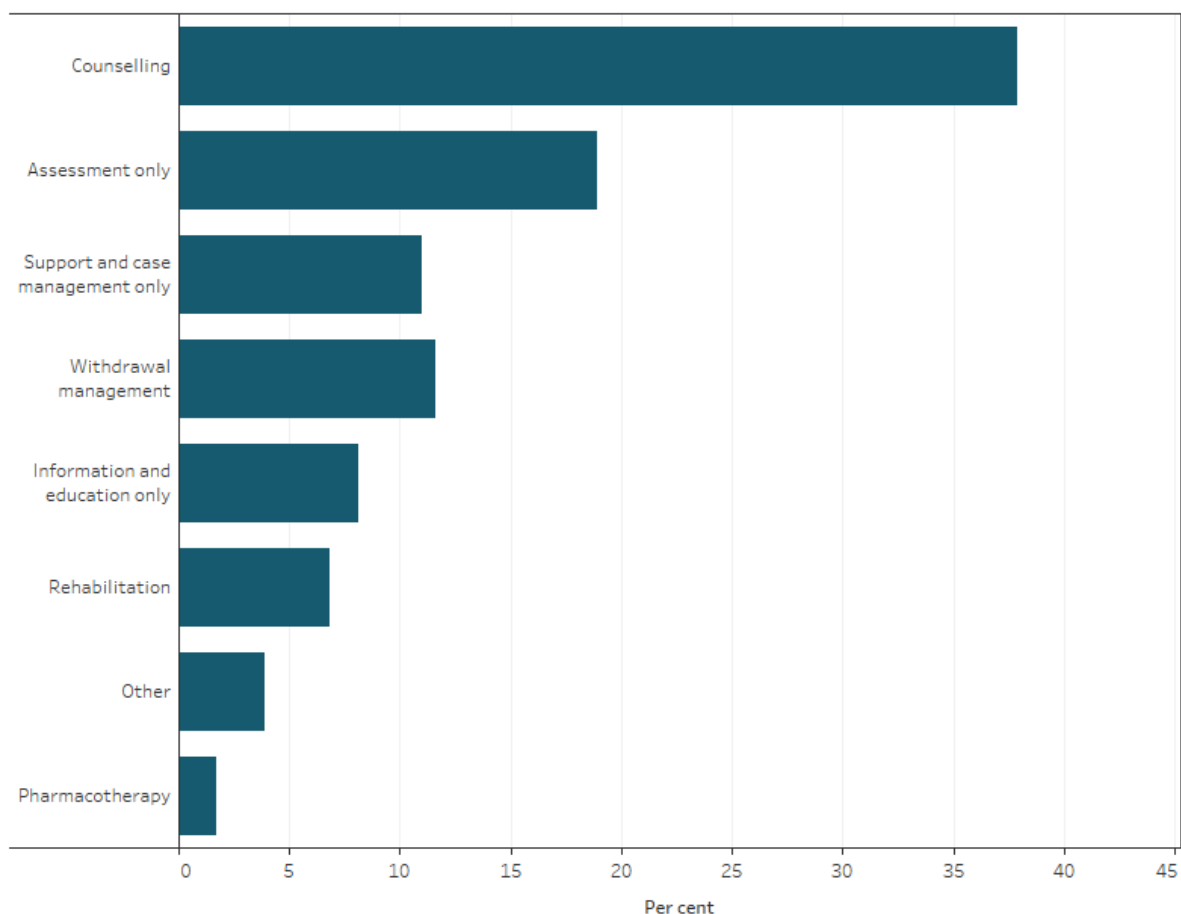
Source: AIHW 2020b.
http://www.aihw.gov.au/

In 2019, the NOPSAD collection reported that methadone remained the most common (61%) form of opioid pharmacotherapy treatment provided to clients.

Where do I go for more information?

For more information on alcohol and other drug treatment services, see:

- Alcohol and other drug treatment services in Australia 2018–19
- Alcohol and other drug treatment services in Australia 2018–19: key findings
- National Opioid Pharmacotherapy Statistics Annual Data collection (NOPSAD) 2019
- Alcohol, tobacco & other drugs in Australia

Visit Alcohol & other drug treatment services for more on this topic.

References

AIHW (Australian Institute of Health and Welfare) 2020a. Alcohol, tobacco & other drugs in Australia. Cat. no. PHE 221. Canberra: AIHW.

AIHW 2020b. Alcohol and other drug treatment services in Australia 2018–19. Cat. no. HSE 230. Canberra: AIHW.

AIHW 2020c. National Opioid Pharmacotherapy Statistics Annual Data collection (NOPSAD) 2019. Cat. no. HSE 218. Canberra: AIHW.

Allied health and dental services

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/allied-health-and-dental-services

Allied health professionals apply specific skills and knowledge to prevent, diagnose and treat health conditions and illnesses. They provide services directly to patients either individually or as part of a multidisciplinary team, and work in a variety of settings.

While there is no universally accepted understanding of which specific disciplines are considered to be allied health professionals, they can include: audiologists, chiropractors, occupational therapists, optometrists, osteopaths, physiotherapists, podiatrists, psychologists and speech pathologists (see, for example, AHPA 2019). Allied health professionals are required to be registered with the Australian Health Practitioner Regulation Agency or their relevant professional body for self-regulating professions.

Dental professionals provide preventive, diagnostic and restorative dental services. They can include dentists, dental prosthetists, dental hygienists, oral health therapists and dental therapists (Dental Board of Australia 2018). While dentists are not usually ascribed to allied health, dental therapists and hygienists are sometimes included within that term. Access arrangements for dental professionals have many similarities to the provision of allied health services. All dental professionals must be registered to practise in Australia.

See Health workforce.

Allied health services

Australians can access allied health services through many channels, including Medicare, the Department of Veterans' Affairs (DVA), the National Disability Insurance Scheme (NDIS), community health services, public and private hospitals or privately by paying for the service out-of-pocket.

Those who purchase services privately and have private health insurance general treatment ('ancillary' or 'extras') cover may have part of the cost subsidised by their insurance provider. In 2017–18, private health insurers subsidised 52.4 million allied health and related services (including the supply of aids and equipment such as prescription glasses and prostheses, AIHW 2019a).

In public hospitals, admitted patients recorded 5.1 million allied health interventions in 2017–18 (AIHW 2019b) and outpatient clinics at public hospitals recorded almost 1.3 million physiotherapy visits, almost 500,000 occupational therapy visits, 300,000 nutrition and dietetics visits, and a range of other allied health visits (AIHW 2019c).

Australia's national health insurance scheme, Medicare, can also subsidise access to some types of allied health services. This section describes allied health care that Australians receive outside of hospital under these arrangements. See Primary health care for details on allied health services subsidised by private health insurers.

What are Medicare-subsidised allied health services?

Under Medicare arrangements, subsidised allied health services are delivered by the following health professionals: audiologists, chiropractors, diabetes educators, dietitians, exercise physiologists, occupational therapists, optometrists, orthoptists, osteopaths, physiotherapists, podiatrists, psychologists, social workers and speech pathologists (Department of Health 2019b). In addition, Medicare subsidises services delivered by Aboriginal and Torres Strait Islander health practitioners and mental health nurses under its allied health service arrangements. While these professionals are not always considered to be allied health professions, they are treated as such in the Medicare arrangements and are included in the relevant data analyses presented on these pages.

With the exception of optometry services, Medicare-subsidised allied health services are available only to patients who are referred by a medical practitioner (usually a general practitioner (GP)). Common referral pathways include GP Management plans for people with a chronic health condition (previously known as Enhanced Primary Care GP services) and GP Mental Health Treatment plans for people with a mental health condition under the Better Access Scheme, which provides access to psychologists, occupational therapists and social workers.

Types of services

In total, 9 million patients (37% of people) received 23 million Medicare-subsidised allied health services in a non-hospital setting in 2017–18. Table 1 shows the range of Medicare-subsidised allied health services provided in 2017–18, including:

- 29% of people received optometry services under Medicare, which was the most common allied health service accessed, with each patient receiving on average 1.3 services

- 5.1% of people received mental health care provided by a Medicare-eligible allied health practitioner, with each patient receiving on average 4.5 services—the highest number of services per patient for the allied health professions.

Table 1: Use of Medicare-subsidised allied health services, 2017–18

Type of service (non-hospital)	Number of services (million)	Proportion of people receiving a service (%)	Number of services per patient
Optometry	9.4	29.3	1.3

Type of service (non-hospital)	Number of services (million)	Proportion of people receiving a service (%)	Number of services per patient
Mental health care[a]	5.6	5.1	4.5
Physical health care[b]	3.5	4.3	3.3
Podiatry	3.3	4.3	3.1
Other	0.9	1.7	2.2
Total allied health	22.7	36.6	2.5

(a) Mental health care provided to a person with an assessed mental disorder by a Medicare-eligible health practitioner, including: psychologists, occupational therapists and social workers as well as mental health nurses and Aboriginal health workers. The analysis does not report on mental health services provided by other health practitioners, such as general practitioners and psychiatrists. For information on all Medicare-subsidised mental health services see the Mental Health Services page.

(b) 'Physical health care' includes physiotherapy, exercise physiology, chiropractic and osteopathy services.

Sources: AIHW analysis of MBS claims data; ABS 2018.

Trends

Overall, the number of patients receiving Medicare-subsidised allied health services in a non-hospital setting increased markedly over the past decade—from 5.6 million in 2008–09 (25% of people) to 9.0 million in 2017–18 (37% of people). After adjusting for differences in the age structure of the population, the number of services per 100 people has increased from 49 in 2008–09 to 88 in 2017–18 (Figure 1).

A range of factors may have affected the supply and demand for Medicare-subsidised allied health services, including increasing rates of chronic illness, increasing patient awareness of chronic conditions and Medicare-subsidised treatments, and new Medicare items which provide Medicare-subsidised allied health services for an expanded range of patient circumstances. These include, for example, the Better Access Initiative items introduced in 2006 for treatment of common mental disorders including anxiety and depression (Department of Health 2019a), and in 2017 the introduction of telehealth psychological therapy items to provide a Medicare subsidy for mental health services delivered through video conferencing.

Figure 1: Allied Health services per 100 people, 2008–09 to 2017–18

Geography
- Australia
- State/Territory

Select rate
- ● Age-standardised rate
- ○ Crude rate
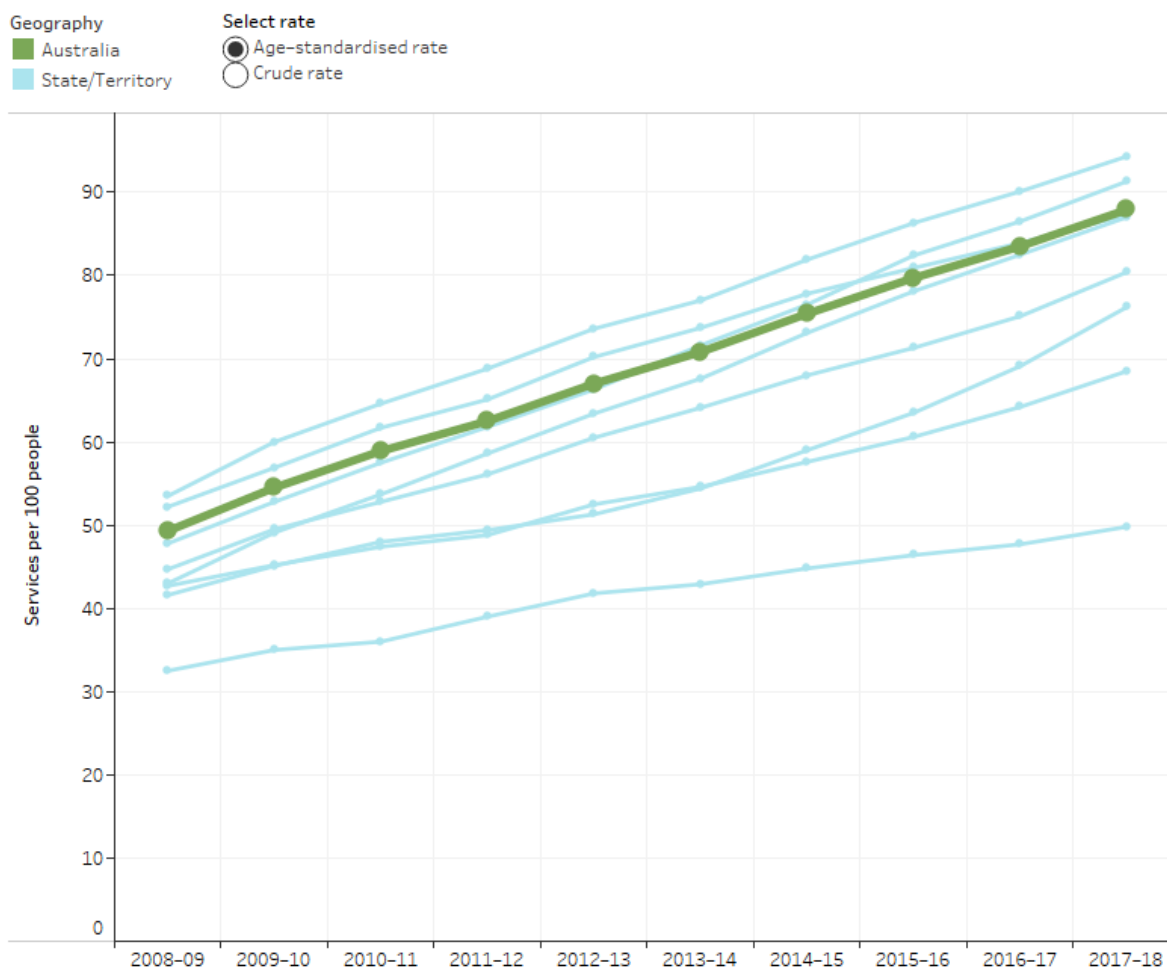
Notes
1. Age-standardised rates are directly standardised to the ABS 2001 standard population, using 5-year age group.
2. Age-standardised rates and crude rates are presented as per 100 people.
Source: AIHW's analysis of Department of Health MBS claims data, 2008–09 to 2017–18; ABS 2011 and ABS 2018.
http://www.aihw.gov.au/

Patient characteristics

In 2017–18, 66% of Australians aged 65 or over received a Medicare-subsidised non-hospital allied health service, whereas 31% of Australians aged 64 or under received a service.

A higher proportion of females (42%) accessed services than males (31%).

The proportion of Australians who received services varied depending on where they lived. The proportions were similar for residents of *Inner regional* areas and *Major cities* (39% and 37% respectively), but decreased with increasing remoteness to 17% of people living in *Very remote* areas. Lower use of Medicare-subsidised allied health services in remote and very remote areas may be partly attributed to these populations relying more on general practitioners (GPs) to provide health care services (AIHW 2019d) or

reflect that services may be accessed through other arrangements that are not captured in the Medicare statistics (e.g. Aboriginal medical services).

Spending

In 2017–18, $1.7 billion was spent on Medicare-subsidised allied health services outside of hospitals. This comprised:

- $1.43 billion in Medicare benefits paid by the Australian Government
- $0.24 billion in patient out-of-pocket costs.

Almost three-quarters of spending was on mental health care ($0.77 billion, 46%) and optometry ($0.45 billion, 27%) services combined.

In 2017–18, 17.2 million Medicare-subsidised allied health services (76%) were bulk-billed (indicating that patients did not incur costs for these services). The remaining 24% of services were patient-billed (that is, the patient incurred out-of-pocket costs).

For those who did incur out-of-pocket costs (18% of patients—1.6 million people), the average out-of-pocket cost per patient was $152 in the year. By service type:

- 5.7% of optometry patients paid out-of-pocket costs; these patients paid $34 in out-of-pocket costs (on average) in 2017–18
- 54% of patients who received mental health care from an eligible allied health practitioner under Medicare paid out-of-pocket costs; these patients paid $274 in out-of-pocket costs (on average) in 2017–18.

Dental services

As for many of the allied health professions, dental services are funded, and can be accessed, in a number of ways—privately or through public dental clinics or DVA (based on eligibility). For those who purchased services privately, some may have had all or part of the costs of the service subsidised. In 2018–19:

- 42.9 million dental services were subsidised by private health insurance providers (APRA 2019)
- 5.4 million services were subsidised under the Australian Government's Child Dental Benefits Schedule (Department of Health 2019a) which supports provision of basic dental services to eligible children aged 2–17.

Data on dental services provided in Australia are limited, especially in relation to services provided in the private sector, as no comprehensive national data sources are available. The most complete information about Australians' use of dental services is available via national population surveys.

Dental visits

The National Child Oral Health Study 2012–14 (Brennan et al. 2016) found that for children aged 5–14, it is estimated that:

- most (57%) had made their first dental visit before the age of 5
- the majority (87%) first visited a dental professional for a check-up (rather than for a problem)
- the majority (81%) had last visited a dental professional in the 12 months prior to the survey and most (57%) had last visited a private dental service
- 1 in 9 (11%) had never visited a dental provider
- the proportion of children who last visited a dental professional for a check-up (which reflects a favourable visiting pattern) varied by household income. Nearly 9 in 10 children (88%) living in households with high income last visited the dentist for a check-up, compared with 7 in 10 children (71%) from households with low income.

The Patient Experience Survey 2018–19 (ABS 2019) found that for people aged 15 and over, it is estimated that:

- nearly half (49%) visited a dental professional in the last 12 months
- of those who needed to and saw a dental professional, the majority (58%) visited more than once in the last 12 months
- around 1 in 8 (12%) people who saw a dental professional received public dental care
- around 3 in 10 (28%) who needed to see a dental professional delayed seeing or did not see one at least once in the previous 12 months—and around 2 in 10 (18%) reported that cost was a reason for delaying or not seeing a dental professional.

Spending

In 2017–18, around $10.5 billion was spent on dental services in Australia. The majority of this cost (around $6.0 billion, or 57%) was paid by patients directly, with individuals spending on average $243 on dental services over the 12-month period, not including premiums paid for private health insurance (AIHW 2019e). Private health insurance providers financed around $2.0 billion (19%) of total expenditure for dental services (AIHW 2019e). See Health expenditure.

Where do I go for more information?

For more information on allied health and dental services, see:

- Medicare-subsidised GP, allied health and specialist health care across local areas: 2013–14 to 2017–18
- Mental health services in Australia, Medicare-subsidised mental health-specific services
- Oral health and dental care in Australia
- Allied Health Professions Australia
- Department of Health National Health Workforce Data Set—Allied health factsheets 2017

References

ABS (Australian Bureau of Statistics) 2011. ABS Australian demographic statistics, Jun 2011. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2018. ABS Australian demographic statistics, Jun 2018. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2019. Patient experiences in Australia: summary of findings, 2018–19. cat. no. 4839.0. Canberra: ABS.

AHPA (Allied Health Professions Australia) 2019. Allied health accreditation. Viewed 11 November 2019.

AIHW 2019a. Medicare-subsidised GP, allied health and specialist health care across local areas: 2013–14 to 2017–18. Cat. no. PHE 254 Canberra: AIHW.

AIHW 2019b. Procedures data cubes. Cat. no. WEB 216. Canberra: AIHW.

AIHW 2019c. Non-admitted patient care 2017–18: Australian hospital statistics. Cat. no. HSE 234 Canberra: AIHW.

AIHW (Australian Institute of Health and Welfare) 2019d. Rural & remote health. Cat. no. PHE 255. Canberra: AIHW. Viewed 29 May 2020, https://www.aihw.gov.au/reports/rural-remote-australians/rural-remote-health

AIHW (Australian Institute of Health and Welfare) 2019e. Health expenditure Australia 2017–18. Cat. no. HWE 077. Canberra: AIHW.

APRA (Australian Prudential Regulation Authority) 2019. Private health insurance benefits trends: ancillary benefits. Sydney: APRA.

Brennan DS, Ju X, Amarasena N, Dooland M, Peres KG, Mejia GC et al. 2016. Patterns of dental services use by Australian children. In: Do LG & Spencer AJ (eds). Oral health of Australian children: the National Child Oral Health Study 2012–14. Adelaide: University of Adelaide Press.

Dental Board of Australia 2018. Registration. Melbourne: Australian Health Practitioner Regulation Agency. Viewed 5 November 2019.

Department of Health 2019a. Annual Medicare statistics—financial year 1984–85 to 2018–19. Canberra: Department of Health. Viewed 26 November 2019.

Department of Health 2019b. Chronic disease management—individual allied health services under Medicare. Canberra: Department of Health. Viewed 26 November 2019.

Cancer screening and treatment

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/cancer-screening-and-treatment

Cancer is a major cause of illness in Australia—there are over 1 million people alive in Australia who are either living with or have lived with cancer (AIHW 2019b). Around 30 years ago, about 5 in 10 people survived for at least 5 years after their cancer diagnosis. More recent figures are closer to 7 in 10 people surviving at least 5 years (AIHW 2019b). Understanding and avoiding the risk factors associated with cancer can help to reduce the chance of getting the disease. Cancer screening programs increase the likelihood of detecting cancer early, enabling better outcomes from treatments. Improvements in treatments and care are also important contributors to improvements in survival. This page focuses on cancer screening programs and cancer treatments in Australia. See Cancer for information on cancer incidence, mortality, prevalence and survival.

Cancer screening

Population-based cancer screening is an organised, systematic and integrated process of testing for signs of cancer or pre-cancerous conditions in populations without obvious symptoms. In Australia, there are national population-based screening programs for breast, cervical and bowel cancers. They are run through partnerships between the Australian Government and state and territory governments. The programs target populations and age groups where evidence shows that screening helps to reduce ill health and deaths from cancer.

BreastScreen Australia

BreastScreen Australia provides free 2-yearly screening mammograms (see Glossary) to women aged 40 and over, and actively targets women aged 50–74. Between 1 January 2016 and 31 December 2017:

- more than 1.8 million women aged 50–74 participated in BreastScreen Australia— around 55% of the target population (AIHW 2019a, 2019e)
- participation in BreastScreen Australia for women aged 50–74 varied between population groups (AIHW 2019a):
  - around 41% of Aboriginal and Torres Strait Islander women participated in BreastScreen Australia compared with 54% of non-Indigenous women
  - around 43% of women living in *Very remote* areas participated in BreastScreen Australia compared with 57% for those living in *Outer regional* areas

- around 46% of women from culturally or linguistically diverse backgrounds participated in BreastScreen Australia compared with 56% for English-speaking women

- Between 1 January 2017 and 31 December 2017, more than half (59%) of all breast cancers detected through BreastScreen Australia were small (≤15 mm); small breast cancers are associated with more treatment options and improved survival (AIHW 2019a).

National Cervical Screening Program

From 1991 to 30 November 2017, the National Cervical Screening Program (NCSP) targeted women aged 20–69 for a 2-yearly Papanicolaou smear, or 'Pap test' (see [Glossary](#)).

- Between 1 January 2016 and 30 June 2017 (the last monitoring period for the Pap test-based NCSP) nearly 3 million women aged 20–69 participated in cervical screening—estimated to be around 54–56% of the target population (AIHW 2019c, 2019e).

- Participation varied across remoteness areas—it was highest in *Inner regional* areas (57%) and lowest in *Very remote* areas (46%), and ranged from 50% for those living in the lowest socioeconomic areas to 62% for those living in the highest socioeconomic areas (AIHW 2019c).

- Between 1 January 2017 and 30 June 2017, for every 1,000 women screened, around 7 had a high-grade abnormality detected, providing an opportunity for treatment before possible progression to cervical cancer (AIHW 2019c).

Changes to cervical screening

Over time there have been improvements in technology as well as a greater understanding of the role of the human papillomavirus (HPV) in the development of cervical cancer. A HPV vaccine has been introduced that is administered to girls and boys under the National Immunisation Program (see also [Immunisation and vaccination](#)). All these developments led to a process by which the NCSP was reviewed and 'renewed', to ensure that the program continued to provide Australian women with safe and effective cervical screening. On 1 December 2017, a 'renewed' NCSP was introduced.

The renewed NCSP changed the way that women are screened. Instead of women aged 20–69 having a Pap test every 2 years, women aged 25–74 now have a Cervical Screening Test (CST) every 5 years (the CST is a HPV test, followed by a cytology test (see [Glossary](#)) if HPV is found). Another change is the collection of cervical screening data by the National Cancer Screening Register, which is now the primary source of cervical screening data.

National Bowel Cancer Screening Program

The National Bowel Cancer Screening Program (NBCSP) was established in 2006, offering screening to 2 target ages (55 and 65). In 2014, the Australian Government announced that the target ages would be expanded to offer 2-yearly screening to all Australians aged 50–74. This expansion was completed in 2020.

In 2017–2018 (the latest reportable period), the program invited men and women turning 50, 54, 55, 58, 60, 62, 64, 66, 68, 70, 72 and 74 to screen for bowel cancer using a free immunochemical faecal occult blood test (iFOBT) (see Glossary).

- Since the expansion of the program from 2014, the NBCSP participation rate has increased from 39% in 2014–2015 to 42% in 2017–2018 (AIHW 2019e).

- Of the diagnostic assessment data available, for participants in 2017 who underwent a diagnostic assessment after a positive screen, 3.4% were diagnosed with a confirmed or suspected bowel cancer, and 5.4% were diagnosed with an advanced adenoma (pre-cancerous tumour) (AIHW 2019d). The return of NBCSP forms is not mandatory, and as a result these diagnostic assessment data (adenoma and cancer detection rates) are incomplete and should be interpreted with caution.

How effective are the cancer screening programs?

National cancer diagnosis data do not reveal if a new case of cancer was identified through a screening program. This information can currently only be determined using data linkage. Recent linkage work conducted by the AIHW examined the effectiveness of the 3 national cancer screening programs on cancer mortality (AIHW 2018).

- Women aged 50–69 who were diagnosed with a breast cancer through BreastScreen Australia between 2002 and 2012 had a 42% lower risk of dying from breast cancer by 2015 than women with breast cancers who had never been screened (AIHW 2018).

- Women aged 20–69 who were diagnosed with a cervical cancer through the National Cervical Screening Program between 2002 and 2012 had an 87% lower risk of dying from cervical cancer by 2015 than women with cervical cancers who had never had a Pap test (AIHW 2018).

- People aged 50–69 who were diagnosed with a bowel cancer detected through the National Bowel Cancer Screening Program had a 40% lower risk of dying from bowel cancer by 2015 than those with a bowel cancer who had not been invited to screen during the study period (AIHW 2018).

Cancer treatment

While population-based cancer screening in Australia focuses on asymptomatic populations for breast, cervical and bowel cancers, treatments for cancer aim to improve outcomes for individuals once they have received a cancer diagnosis, irrespective of the cancer type. Detailed reporting on cancer-related treatments can be

found in [Cancer in Australia 2019](#) (AIHW 2019b). Summaries of 4 key areas of cancer treatment (hospitalisations, chemotherapy, radiotherapy and palliative care) are presented below.

Cancer-related hospitalisations

In 2016–17, there were around 1,229,000 cancer-related hospitalisations, accounting for about 11% of all hospitalisations in Australia (AIHW 2019b). Of these:

- 72% (around 888,000) were same-day hospitalisations (see [Glossary](#)). The large number of same-day hospitalisations is in part accounted for by the number of chemotherapy treatments
- 28% (around 341,000) were overnight hospitalisations (see [Glossary](#)), with an average length of stay of 7.8 days. Cancer of other central nervous system had the longest average length of stay (14.4 days), followed by cancer of other plasma cell (12.7) and leukaemia (12.5)
- non-melanoma skin cancer was the most common cancer recorded as a principal diagnosis (25%), followed by cancer of secondary site (see [Glossary](#)) (9.5%) and prostate cancer (8.4%).

Chemotherapy

Chemotherapy involves the use of drugs (chemicals) to prevent or treat disease (in this case, cancer). Chemotherapy can be used on its own or in combination with other methods of treatment.

In 2016–17, around 684,000 chemotherapy procedures were performed for cancer-related hospitalisations (AIHW 2019b). Of these:

- lymphoma was the most common principal diagnosis for both males (21%) and females (17%). This was followed by leukaemia (16% for males and 14% for females) and colorectal (bowel) cancer (11% for males and 12% for females)
- females accounted for just over half of chemotherapy procedures for cancer-related hospitalisations (around 361,000 hospitalisations; 53%).

Radiotherapy

Radiotherapy is the use of X-rays to destroy or injure cancer cells so they cannot multiply and is an important part of cancer treatment. Australian research indicates that 48% of cancer patients should receive external beam therapy (the most common form of radiotherapy) at least once during their treatment (Barton et al. 2014). Similarly to chemotherapy, radiotherapy can be used on its own or in combination with other treatment methods.

In 2016–17, more than 63,500 courses of radiotherapy were administered in Australia (AIHW 2019b). Of these, around one-quarter of the radiotherapy courses for males were

for prostate cancer (26%) and 44% of radiotherapy courses for females were for breast cancer.

In 2017, around 67,900 people received more than 2.2 million Medicare-subsidised radiotherapy services (AIHW 2019b). Of these:

- patients had, on average, 32 radiotherapy services (34 for males and 30 for females)
- the Australian Government contributed, on average, $6,684 per patient ($7,011 for males and $6,350 for females)
- around 90% of patients were over the age of 50.

Palliative care

Palliative care—sometimes referred to as 'hospice care', 'end-of-life care' and 'specialist palliative care'—is an approach that aims to improve the quality of life of patients and their families facing the problems associated with life-threatening illness. This is done through the prevention and relief of suffering by means of early identification and assessment and treatment of pain and other problems, physical, psychosocial and spiritual (WHO 2002).

In 2016–17, around 77,400 hospitalisations in Australia involved palliative care (0.6% of all hospitalisations). Of these, 54% were cancer-related (AIHW 2019b).

The most common type of cancer recorded for palliative care hospitalisation was secondary site cancer (21%), followed by lung cancer (13%) and colorectal (bowel) cancer (6.8%) (AIHW 2019b).

Where do I go for more information?

For more information on cancer screening and treatment, see:

- National Bowel Cancer Screening Program: monitoring report 2019
- BreastScreen Australia monitoring report 2019
- Cervical screening in Australia 2019
- Analysis of cancer outcomes and screening behaviour for national cancer screening programs in Australia
- National cancer screening programs participation data
- Cancer in Australia 2019

Visit Cancer screening and Cancer for more on this topic.

References

AIHW (Australian Institute of Health and Welfare) 2018. Analysis of cancer outcomes and screening behaviour for national cancer screening programs in Australia. Cat. no. CAN 115. Canberra: AIHW.

AIHW 2019a. BreastScreen Australia monitoring report 2019. Cat. no. CAN 128. Canberra: AIHW.

AIHW 2019b. Cancer in Australia 2019. Cat. no. CAN 123. Canberra: AIHW.

AIHW 2019c. Cervical screening in Australia 2019. Cat. no. CAN 124. Canberra: AIHW.

AIHW 2019d. National Bowel Cancer Screening Program: monitoring report 2019. Cat. no. CAN 125. Canberra: AIHW.

AIHW 2019e. National cancer screening programs participation data. Cat. no. CAN 114. Canberra: AIHW. Viewed 2 December 2019.

Barton M, Jacob S, Shafiq J, Wong K, Thompson S, Hanna T et al. 2014. Estimating the demand for radiotherapy from the evidence: a review of changes from 2003 to 2012. Radiotherapy and Oncology 112:140–4.

WHO (World Health Organization) 2002. National cancer control programmes: policies and managerial guidelines. 2nd edn. Geneva: WHO.

Clinical quality registries

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/clinical-quality-registries

Clinical quality registries are mechanisms for monitoring the quality of health care delivered to a specified group of patients through the collection, analysis and reporting of relevant health-related information. Clinical quality registries collect and analyse clinical data to identify benchmarks for clinical performance and related variation in clinical outcomes. Along with these clinical data, registries can include such data as demographics, administrative transactional data, and patient-reported experiences and outcomes. The registries report this information to clinicians to improve their clinical practice and decision making. Ongoing reporting of clinical data from the registry completes the clinical outcome feedback loop (Figure 1) which is a defining feature of clinical quality registries (ACSQHC 2019a).

Figure 1: Clinical improvement cycle in clinical quality registries
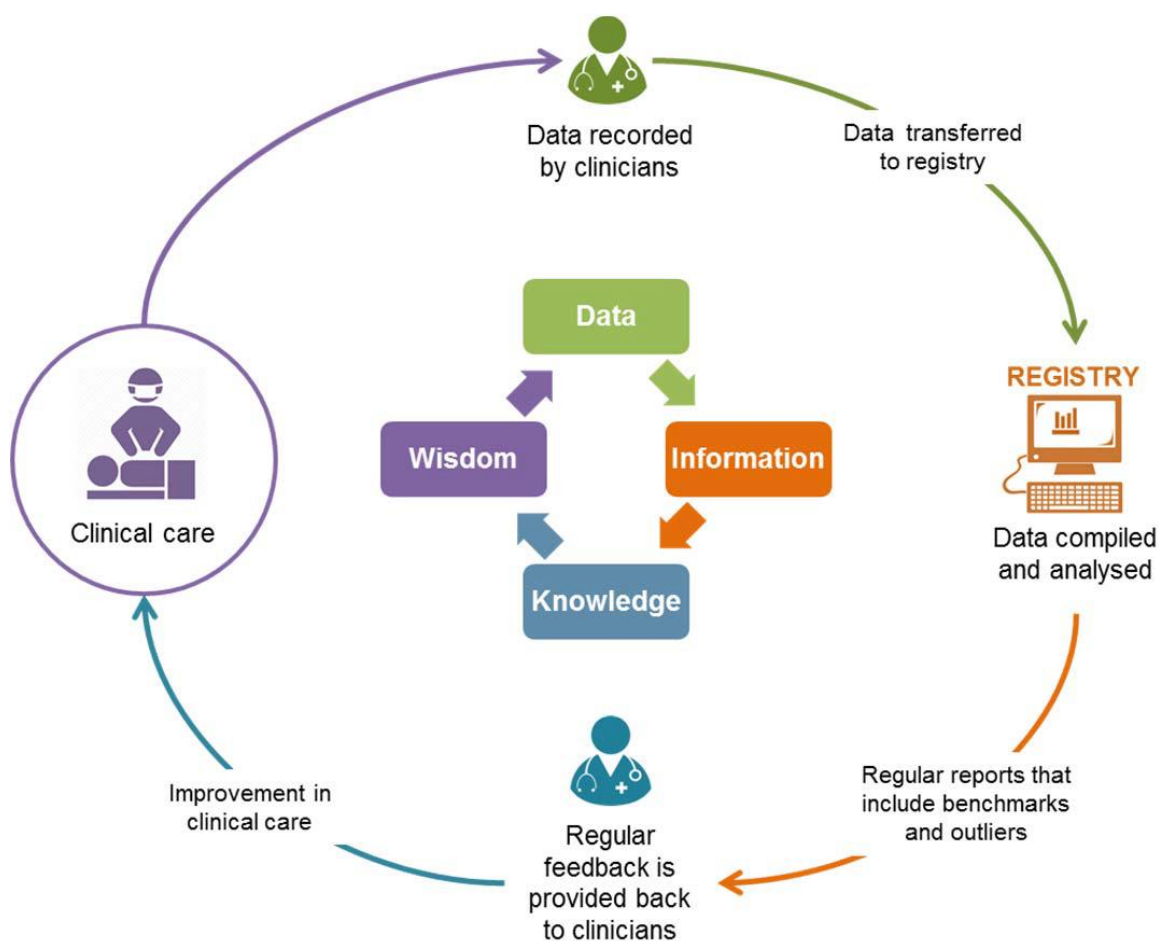
Source: ACSQHC 2016:Figure 2.

Clinical quality registry development to date

Effective clinical quality registries need to have an integrated process for collecting and analysing clinical data defined according to agreed data definitions and data collection standards. Some examples of the types of progression these registries have gone through to improve their data are at Table 1.

Clinical quality registries collect data on processes of care and health outcomes, and in some cases patient-reported outcome measures, patient-reported experience measures and health system costs. Each component of the data can contribute to understanding the benefits and cost effectiveness of treatment and care from the perspectives of patients, clinicians, health service administrators, health insurers and government authorities. Clinical quality registries thus have great potential to inform health system improvements at the patient, clinician, local, national and Australasian levels (ACSQHC 2019a).

Table 1. Examples of progress by clinical quality registries towards data improvement

Clinical quality registry	Status at 2009	Status at 2019
Neck of Femur Fracture Registry of Australia (NOffRA)/Australia & New Zealand Hip Fracture Registry (ANZHFR)	Pilot project covering 3 opt-in hospitals entering data according to the 'Standardised Audit Fractures in Europe' model	Automated data validation and time-sequence checks, and automated and manual data completeness checks, for data from 67 participating hospitals
National Breast Cancer Audit (NBCA)/ BreastSurgANZ Quality Audit	Data quality assurance under development	Detailed user manual for online data entry by participating breast cancer surgeons
Bi-National Burns Registry (BNBR)/Burns Registry of Australia and New Zealand (BRANZ)	'Interoperable Framework' under development to standardise entry of burns units' data to a centralised registry	Data dictionary with detailed specifications for web-based data entry at participating sites
Australasian Rehabilitation Outcomes Centres (AROC)	Continual improvement through use of data dictionaries, audits and training	Further improved through development of web-based interface
Australian Cardiac Procedures Registry (ACPR)/Australasian Cardiac Outcomes Registry	Achieved through use of standardised data dictionaries and training of hospital-based data collectors	Merging established registry with Melbourne Intervention Group Percutaneous Cardiac Intervention Registry, and extending data collection to other implantable cardiac devices
Australian Stroke Clinical Registry (AuSCR)	Achieved at participating hospitals through AuSCR online tool with data dictionary, dropdown menus, logic checks and mandatory fields	Extended to further participating hospitals through registration and training site links

Sources: ACSQHC 2010; ANZHFR 2020; RACS 2019; BRANZ 2020; AROC 2020a; ACPR 2020; AuSCR 2020.

Clinicians and colleges of surgeons and medical specialists operating in Australia and/or New Zealand have traditionally provided leadership in the development of clinical quality registries. They have often worked together with state health authorities, research institutions and dedicated non-government organisations such as Movember (for prostate cancer).

The Australian Commission on Safety and Quality of Health Care (ACSQHC) has produced a framework for clinical domains that are important to the delivery of improved health care to Australians. Table 2 summarises the status of Australia's clinical quality registries according to the ACSQHC framework of prioritised clinical domains. The registry's status ranges from a clinical domain for which no registry has been developed (mental illness) or is in its infancy (dementia), to clinical domains where there is a national registry along with related registries in several states and territories (trauma).

Where registries have been developed for a clinical domain, they often have excellent coverage of the health services within this domain. For instance, all hospitals in Australia that undertake joint replacement surgery participate in the National Joint Replacement Registry (AOANJRR 2020); all 26 Australian hospitals designated as major trauma centres are involved in the Australia New Zeland Trauma Registry (Monash University 2020); and all renal units in Australia and New Zealand contribute data to the Australia and New Zealand Dialysis and Transport Registry (ANZDATA 2019). Similarly, the Breast Surgeons of Australia and New Zealand Quality Audit covers 90% of breast cancer cases in Australia and New Zealand (BreastSurgANZ 2020) and the Critical Care Resources Registry collects data from about 80% of all intensive care units across Australia and New Zealand (ANZICS 2020a). However, many registries are still at a roll-out stage, using as their basis opt-in hospitals (especially hospitals in Victoria).

Australia currently has about 65 clinical quality registries at some level of development or use, including several not listed in Table 2 (ACSQHC 2019a). An example is the Australasian Rehabilitation Outcomes registries (AROC 2020b), which cannot be assigned exclusively to a single clinical domain even though many rehabilitation patients are receiving care for musculoskeletal conditions.

The ACSQHC recently published the Australian Register of Clinical Registries. This register will make information on all clinical registries, including clinical quality registries, available to facilitate collaboration and awareness of registry activity among key stakeholders (ACSQHC 2019b).

There are 2 clinical domains for which Australia does not have a clinical quality registry, but other countries do. For example, in the case of mental health, the United States, Malaysia and countries in Latin America, among others, have developed schizophrenia registries (ACSQHC 2016). For dementia, Sweden assesses the quality of care delivered to elderly people with cognitive impairments through data collected under the Patient Data Act (Mattsson 2016).

Table 2: Australian clinical domains identified for national registry development

Clinical domain	Registries
Coronary heart disease	Australasian Cardiac Outcomes Registry; ANZSCTS National Database
Musculoskeletal conditions	National Joint Replacement Registry; Australian Spine Registry; Australian & New Zealand Hip Fracture Registry
Trauma	Australia New Zealand Trauma Registry; Victorian State Trauma Registry; incomplete data capture in other state/territory registries
Adult critical care	Critical Care Resources Registry; Adult Patient Database; Central Line Associated Blood Stream Infection Dataset
High burden cancers	Bi-National Colorectal Cancer Audit; Australian Breast Device Registry; Breast Surgeons of Australia and New Zealand Quality Audit; Prostate Cancer Outcomes Registry—Australia and New Zealand; Victorian Lung Cancer Registry; Upper Gastrointestinal Cancer Registry; National Gynae-Oncology Registry; Lymphoma and Related Diseases Registry
Stroke	Australian Stroke Clinical Registry
Chronic kidney disease	Australia and New Zealand Dialysis and Transplant Registry; Registry of Kidney Diseases
Neonatal critical care	Paediatric Intensive Care Dataset
Mental health	No existing registry
Maternity	Australasian Maternity Outcomes Surveillance System
Dementia	Australian Dementia Network (ADNeT) which is for those enrolled in clinical trials Dementia Australia
Major burns	Burns Registry of Australia and New Zealand
Diabetes	Australian National Diabetes Audit

Sources: ACSQHC 2016; Monash University 2017; ANZICS 2020b.

National strategy for clinical quality registries

Consultation to develop a national clinical quality registry strategy was launched in May 2019 with the following vision (Department of Health 2020):

> National clinical quality registries are integrated into Australia's health care information systems and systematically drive patient-centred improvements in the quality and value of health care and patient outcomes, across the national health care system.

Where do I go for more information?

For more information on clinical quality registries, see:

- Australian Commission on Safety and Quality in Health Care National arrangements for clinical quality registries
- Monash University Monash clinical registries

References

ACPR 2020. Australian Cardiac Procedures Registry. Viewed 28 February 2020.

ACSQHC (Australian Commission on Safety and Quality in Health Care) 2010. Testing and validating the draft operating principles and technical standards. Sydney: ACSQHC. Viewed 28 February 2020.

ACSQHC 2016. Prioritised list of clinical domains for clinical quality registry development: final report. Sydney: ACSQHC. Viewed 28 February 2020.

ACSQHC 2019b. Australian Register of Clinical Registries. Viewed 28 February 2020.

ACSQHC 2019a. National arrangements for clinical quality registries. Viewed 28 February 2020.

AROC (Australasian Rehabilitation Outcomes Centre) 2020b. Archived reports and benchmarks. Viewed 28 February 2020.

AROC 2020a. The AROC Dataset. Viewed 28 February 2020.

ANZDATA 2019. Australia and New Zealand Dialysis and Transplant Registry. Viewed 28 February 2020.

ANZHFR 2020. Australian & New Zealand Hip Fracture Registry. Viewed 28 February 2020.

ANZICS (Australian and New Zealand Intensive Care Society) 2020b. ANZICS core registries. Viewed 28 February 2020.

ANZICS 2020a. Critical Care Resources Registry. Viewed 28 February 2020.

AOANJRR (Australian Orthopaedic Association National Joint Replacement Registry) 2020. AOANJRR home page. Viewed 28 February 2020.

AuSCR 2020. Australian Stroke Clinical Registry (AuSCR). Viewed 28 February 2020.

BRANZ 2020. Burns Registry of Australia and New Zealand data collectors. Viewed 28 February 2020.

BreastSurgANZ (Breast Surgeons of Australia and New Zealand) 2020. BreastSurgANZ Quality Audit 2020. Viewed 28 February 2020.

Department of Health 2020. Draft national clinical quality registry strategy: maximising the potential of Australian clinical quality registries (2019–2029). Viewed 23 April 2020.

Mattsson T 2016. Quality registries in Sweden, healthcare improvements and elderly persons with cognitive impairments. European Journal of Health Law 23:453–469. Viewed 28 February 2020.

Monash University 2017. Monash clinical registries portfolio 2017. Clayton, Victoria: Monash University. Viewed 28 February 2020.

Monash University 2020. Australian Trauma Registry (ATR). Viewed 31 January 2020.

RACS (Royal Australasian College of Surgeons) 2019. BreastSurgANZ Quality Audit. Viewed 28 February 2020.

Digital health

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Australia's health industry has a long history of using innovative technologies to improve health care delivery. In 1929, the invention of an affordable pedal-powered radio gave people in isolated areas access to advice and emergency medical services. In many ways, this radio was a predecessor to the digital advancements that were to come, and which have since been used to create a more sustainable system and respond to system-wide challenges including increased cost and demand pressures, access barriers, greater demand for personalised care and an ageing population.

What is digital health?

Digital health is an umbrella term referring to a range of technologies that can be used to treat patients and collect and share a person's health information, including mobile health and applications, electronic health records, telehealth and telemedicine, wearable devices, robotics and artificial intelligence.

Examples may include: My Health Record, fitness trackers, smartwatches, sleep trackers, wellness applications, SMS reminders via mobile messaging, electronic discharge summaries, electronic prescribing, secure messaging, voice interfaces, medical drones, paperless hospitals, implanted microchips, robotic nurse assistants, and so forth.

This page explains how digital health is being widely used, and as set out in the National Digital Health Strategy. Available national data on the uptake of digital health in the delivery of health services is limited, but there are many examples of its use.

How digitally connected are Australians?

There were 14.7 million internet subscribers in Australia at the end of June 2018, and 3.8 million terabytes of data were downloaded in the 3 months before 30 June 2018 (ABS 2018). Almost 91% of Australians have a smartphone and there were about 27 million mobile handset subscribers at 30 June 2018 (ABS 2018; Deloitte 2019). Globally, 2.5 quintillion bytes of data are created each day, and over 90% of this data was generated in the last 2 years—this would fill 10 million Blu-ray discs, the height of which stacked would measure 4 times the height of the Eiffel Tower (Forbes 2018). The majority of Australians are digitally connected in some way.

Almost three-quarters (73%) of Australians have used the internet to research a health issue, including the majority of older Australians (69% of those aged 65 and over), and

most Australians (77%) would like their doctor to suggest health information websites (ADHA 2017). However, only a small proportion (6%) of Australians find an online health source that they trust (ADHA 2017).

Use of digital health technologies

The application of digital technology in health may bring improvements in service quality, efficiency and equity (WHO WPRO 2018). This creates opportunities for a health system that has as its aim enabling individuals, families and communities to maintain and improve their health through timely access to quality services.

Benefits for health care users

Good health outcomes are produced by providers and health care users and their families working together. Users, their families and communities must be informed and empowered so that they participate actively in their own health care and can also influence health system development. Using digital technology may help to:

- improve access to health care through telemedicine to overcome physical or distance barriers through remote consultation, diagnosis and management
- assist users to self-manage their health and wellbeing
- monitor symptoms and vital signs better during daily life through wearable devices and health applications
- target communication to health or demographic groups by, for example, transmitting health event alerts to specific populations, or advice and SMS reminders to individuals or groups.

Benefits for health service providers

For health service providers, digital technology enables the right information to be available in the right place at the right time, which helps with better communication and connection between health services. Using digital health technology may help improve:

- access to users' health information to support clinical decision making, patient safety and continuity of care
- the ability to provide patient-centred care, responsive to the health status, needs and preferences of health care users
- diagnostic accuracy and treatment through decision support systems that provide prompts and alerts, and screening of individuals by risk or health status
- the provision of quality care through remote monitoring, consultation, diagnosis and treatment using telemedicine and telehealth
- productivity and efficiency through streamlined processes, reduced waiting times, and reduced duplicate testing.

Benefits for the health system

For the overall health system, digital technology can improve the functioning and relationships between different parts of the health system environment. Using digital technology may help to:

- improve response to emergencies with quick access to clinical and service data
- strengthen monitoring of public health threats and ensure a more timely and effective response through access to real-time information
- improve understanding of the health and service delivery needs of the population
- allow data-supported insights and priorities, including the ability to monitor health system performance and quality indicators.

Patient reminders using mobile technologies

Non-attendance at scheduled appointments is a barrier to health care users receiving timely health care. It is also a major source of lost resources and underuse of health service provider time. Studies, mostly focused on accessible patient populations, suggest that non-attendance is caused by negative health care user–health service provider relationships, patients' perceived knowledge about the diseases and experience with treatment regimens, forgetfulness, administrative errors making and cancelling appointments, and lack of transport (Akter et al. 2014; Paterson et al. 2010; Wilkinson & Daly 2012). Other studies have also found that wider social issues, including low socioeconomic position and low health literacy, are perceived as important determinants of non-attendance for some groups (Collins et al. 2003).

Electronic reminders via mobile text messages are a non-intrusive way to address this issue, especially given there is widespread use and acceptance of mobile technologies across different socioeconomic and cultural groups (Kannisto et al. 2014). Examples include increasing patient adherence to medication regimes for patients with different chronic diseases by reminding them of when to take medicines (Kannisto et al. 2014; Spoelstra & Sansoucie 2015), improving attendance at scheduled appointments (Boksmati et al. 2016; Poorman et al. 2015; Stubbs et al. 2012), and through provision of educational and motivational health information. Two-way messaging often promotes successful outcomes by generating personalised communication between health care service providers and users, allowing consumers to confirm receipt of the message or indicate whether they have taken their medicine or are able to attend their upcoming appointment (ACSQHC 2018).

There is little published research on whether improved attendance at appointments translates into improved health outcomes (Gurol-Urganci et al. 2013). It is also unclear what the best timing, rate and degree of personalisation of mobile phone reminders are. More research about message content, timing and frequency may help to define how text messaging can increase positive outcomes, and inform successful implementation of messaging.

Electronic discharge summaries

Timely sharing of high-quality information at transitions in care is recognised as critical to continuity of care and promotion of patient safety. An example of a transition of care is between acute and primary care service providers at patient discharge from hospital. However, in health systems where primary and acute care is provided by separate services, the transmission of discharge summaries to primary care providers is often delayed. Also, the quality of information contained in conventional discharge summaries may be suboptimal. Information about pending test results, discharge planning and medication changes may be left out, which could jeopardise health outcomes (ACSQHC 2018; Kattel et al. 2020).

Electronic discharge summaries have been shown to help in the preparation and transmission of patient information to primary care service providers in a timely manner (Unnewehr et al. 2015). They are also more successful when automatically filled in with information from a hospital's electronic health record, delivered via secure messaging, and use reminders for health service providers to complete the electronic discharge summaries (ACSQHC 2018).

At November 2018, more than 700 public hospitals and health services across Australia were connected to the My Health Record system and are able to upload care summaries for patients with a My Health Record (ADHA 2018).

National Digital Health Strategy

Governments have a role in setting policy and other frameworks that help to facilitate and manage advances in digital health to the benefit of users, providers and the system.This includes establishing frameworks for information sharing and technology adoption.

The National Digital Health Strategy sets out 7 strategic priorities intended to support Australia's vision for digital health:

1. Health information that is available whenever and wherever it is needed
2. Health information that can be exchanged securely
3. High-quality data with a commonly understood meaning that can be used with confidence
4. Better availability and access to prescriptions and medicines information
5. Digitally-enabled models of care that improve accessibility, quality, safety and efficiency
6. A workforce confidently using digital health technologies to deliver health and care

7. A thriving digital health industry delivering world-class innovation.

Outlined below are examples of initiatives under the National Digital Health Strategy that can be used, directly or indirectly, to improve health information availability and utility in Australia.

My Health Record

One of the main initiatives to ensure key health information is available whenever and wherever it is needed is the My Health Record (MHR) system.

The MHR system began on 1 July 2012 and since then has grown to reach 90% of health system users through the implementation of opt-out arrangements in 2019. Over this time, MHR has grown in its capability, usability and integration with clinical information systems across the health sector. There are currently 22.68 million My Health Records, with more than 16,000 health care provider organisations registered to use it, and more than 1.7 billion documents (including clinical documents, prescription and dispensing documents, user documents and Medicare documents) stored in the MHR system at December 2019 (ADHA 2019).

As the system matures, an increasing amount of information will be available to guide health service planning, policy development and research to further improve Australia's health system. De-identified data could be used to answer research and public health questions for which there are currently no data available. A data assessment is under way to analyse the strengths and limitations of using existing MHR data for research and public health purposes, and to quantify the impact of any identified data quality issues. A thorough understanding of the quality of MHR system data will inform whether de-identified data can be made available for research and public health purposes while upholding the strictest data quality and privacy standards.

National Digital Child Health Record

While much is known about the health and welfare of children in Australia, there are notable gaps and limitations in national reporting of this topic. There are limited data on children's interaction with community services, including maternal and child health services (AIHW 2019). Many children's health-related records are captured in multiple paper or electronic systems. These systems vary between state and territory public hospitals and various primary health care settings in which child health services are delivered. Paper records are easily forgotten or misplaced, and information often needs to be entered separately into both paper and digital systems.

The National Children's Digital Health Collaborative is one of the initiatives of Australia's National Digital Health Strategy that is seeking to use digital technologies to help overcome these challenges. Development work is under way for a proof of concept for the Child Digital Health Record, which will capture information currently collected in a child's hard-copy 'baby book', as well as a Digital Pregnancy Record. The Australian

Digital Health Agency (the Agency) is developing a business case for transitioning the proof of concept into national infrastructure and linking it to My Health Record.

Health information and digital health standards

Data from digital technologies are only useful if they can be turned into meaningful information with due respect for privacy. This requires high-quality data and the use of data definitions and standards.

Metadata standards for health-related statistical reporting are stored in Australia's online metadata repository, METeOR, hosted by the AIHW. Digital health standards are supported by the National Clinical Terminology Service, hosted by the Agency.

Under the National Digital Health Strategy, the Agency also works to ensure clinical information is better connected and seamlessly shared between patients and their health care providers. Development of a National Health Interoperability Roadmap is under way to address the challenges in the health sector that prevent information moving electronically among different health information systems and health care providers.

Where do I go for more information?

For more information on digital health, see:

- Australian Digital Health Agency National Digital Health Strategy
- My Health Record
- Department of Health, Health technology

References

ABS (Australian Bureau of Statistics) 2018. Internet activity, Australia, June 2018. Canberra: ABS.

ACSQHC (Australian Commission on Safety and Quality in Health Care) 2018. Impact of digital health on the safety and quality of health care. Australian Commission on Safety and Quality in Health Care. Viewed 4 November 2019.

ADHA (Australian Digital Health Agency) 2017. Australia's National Digital Health Strategy: safe, seamless and secure. Sydney: ADHA. Viewed 4 November 2019.

ADHA 2018. Public hospitals and health services connected to the My Health Record system. Sydney. ADHA. Viewed 17 February 2019.

ADHA 2019. My Health Record statistics. Sydney: ADHA. Viewed 4 November 2019.

AIHW (Australian Institute of Health and Welfare) 2019. Australia's children—in brief. Canberra: AIHW. Viewed 14 February 2020

Akter S, Doran F, Avila C, Nancarrow S 2014. A qualitative study of staff perspectives of patient non-attendance in a regional primary healthcare setting. AMJ (Australasian Medical Journal) 2014, 7, 5, 218–226.

Boksmati N, Butler-Henderson K, Anderson K & Sahama T 2016. The effectiveness of SMS reminders on appointment attendance: a meta-analysis. Journal of Medical Systems 2016; 40 (4):90.

Collins J, Santamaria N & Clayton L 2003. Why outpatients fail to attend their scheduled appointments: a prospective comparison of differences between attenders and nonattenders. Australian Health Revue 2003; 26 (1):52–63.

Deloitte 2019. Australia reaches peak smartphone. Mobile Consumer Survey 2019. Viewed 15 November 2019, https://www2.deloitte.com/au/mobile-consumer-survey.

Forbes 2018. How much data do we create every day? The mind-blowing stats everyone should read. Viewed 4 November 2019.

Gurol-Urganci I, de Jongh T, Vodopivec-Jamsek V, Atun R & Car J 2013. Mobile phone messaging reminders for attendance at healthcare appointments. Cochrane Database of Systematic Reviews 2013; 12.

Hambleton S & Aloizos J 2019. Australia's digital health journey. MJA (The Medical Journal of Australia) 2019; 210 (6).

Kannisto KA, Koivunen MH & Valimaki MA 2014. Use of mobile phone text message reminders in health care services: a narrative literature review. Journal of Medical Internet Research 2014; 16 (10).

Kattel S, Manning DM, Erwin PJ, Wood H, Kashiwagi DT & Murad MH 2020. Information transfer at hospital discharge: a systematic review. Journal of Patient Safety 2020; 16(1).

National Children's Digital Health Collaborative 2019. About the Collaborative. Sydney: National Children's Digital Health Collaborative. Viewed 4 November 2019.

Paterson BL, Charlton P & Richard S 2010. Non-attendance in chronic disease clinics: a matter of non-compliance? Journal of Nursing and Healthcare of Chronic Illness 2010; 2 (1):63–74.

Perillo A. Connecting users to their digital health: Perspectives on users opportunities in the digital healthcare revolution: Telstra Health. Viewed 4 November 2019.

Poorman E, Gazmararian J, Parker RM, Yang B & Elon L 2015. Use of text messaging for maternal and infant health: a systematic review of the literature. Maternal and Child Health Journal 2015; 19 (5):969–89.

Ramaswami P 2015. A remedy for your health-related questions: health info in the knowledge graph. Google. Viewed 4 November 2019.

Research Australia 2016. Australia Speaks! Research Australia Opinion Polling 2017 Sydney. Viewed 4 November 2019, https://researchaustralia.org/wp-content/uploads/2017/08/2017-Opinion-Poll-Digital.pdf.

Spoelstra SL & Sansoucie H 2015. Putting evidence into practice: evidence-based interventions for oral agents for cancer. Clinical Journal of Oncology Nursing 2015; 19 (3):60–72.

Stubbs ND, Sanders S, Jones DB, Geraci SA, Stephenson PL 2012. Methods to reduce outpatient non-attendance. American Journal of the Medical Sciences 2012; 344 (3): 211–9.

Unnewehr M, Schaaf B, Marev R, Fitch J, Friederichs H 2015. Optimizing the quality of hospital discharge summaries: a systematic review and practical tools. Postgraduate Medicine 2015 Aug; 127 (6): 630–9.

WHO (World Health Organization) 2018. Regional action agenda on harnessing e-health for improved health service delivery in the Western Pacific. WHO. Viewed 4 November 2019.

Wilkinson J & Daly M 2012. Reasons for non-attendance: audit findings from a nurse-led clinic. The Journal of Primary Health Care 2012 Mar; 4 (1): 39–44.

Health and medical research

Health and medical research helps to improve health and wellbeing through identifying, curing and preventing disease, injury and disability, and improving health services and their delivery (Research Australia 2019). In Australia, health and medical research has contributed to developments that have improved the health and wellbeing of people all over the world. These have included, for example, in-vitro fertilisation (Professor Carl Wood), the artificial heart valve (Dr Victor Chang), the role of *Helicobacter pylori* in peptic ulcer formation (Professor Barry Marshall and Emeritus Professor Robin Warren) and work to understand the role of antibodies in the immune system (Professor Sir Gustav Nossal) (AAMRI 2019).

Health and medical research can also lead to positive economic outcomes, such as a more productive workforce. It may also help to reduce the amount spent on health care, especially in the context of an ageing population.

What is health and medical research?

The definition of health and medical research can vary. Health and medical research encompasses a wide array of disciplines, activities, researchers and research institutions, and may include, for example, laboratory research, clinical trials or epidemiological studies (AAMRI 2019).

Health and medical research can take place in universities, hospitals and other medical institutions and companies by a range of professionals, including scientists, nurses, general practitioners and medical specialists (Research Australia 2019). Applied research conducted in some institutions, such as at the Australian Institute of Health and Welfare, may be considered health and medical research, but is outside the scope of this article.

How much is spent on health and medical research?

Health and medical research is funded by a wide range of government and non-government entities, including the Australian Government, state and territory governments, not-for-profit organisations and private businesses. Additionally, many individual Australians support health and medical research through philanthropic and charitable donations. In 2017–18, total spending on health and medical research accounted for about 0.3% of Gross Domestic Product (GDP), and 3.0% of total health

spending (AIHW 2019). These figures exclude commercially-oriented research funded by private businesses where the costs of the research are likely to be included in the prices charged for goods and services (for example, medications that have been developed and or supported by research activities).

Spending on health and medical research in Australia increased in real terms from $3.7 billion in 2007–08 to $5.6 billion in 2017–18 (AIHW 2019) (Figure 1). Of this, $4.4 billion (78%) was contributed by the Australian Government. State and territory governments contributed $0.8 billion (15%), and $0.4 billion (7.2%) was contributed by the non-government sector.

Figure 1: Health spending on research, by source of funding, constant prices, 2007–08 to 2017–18
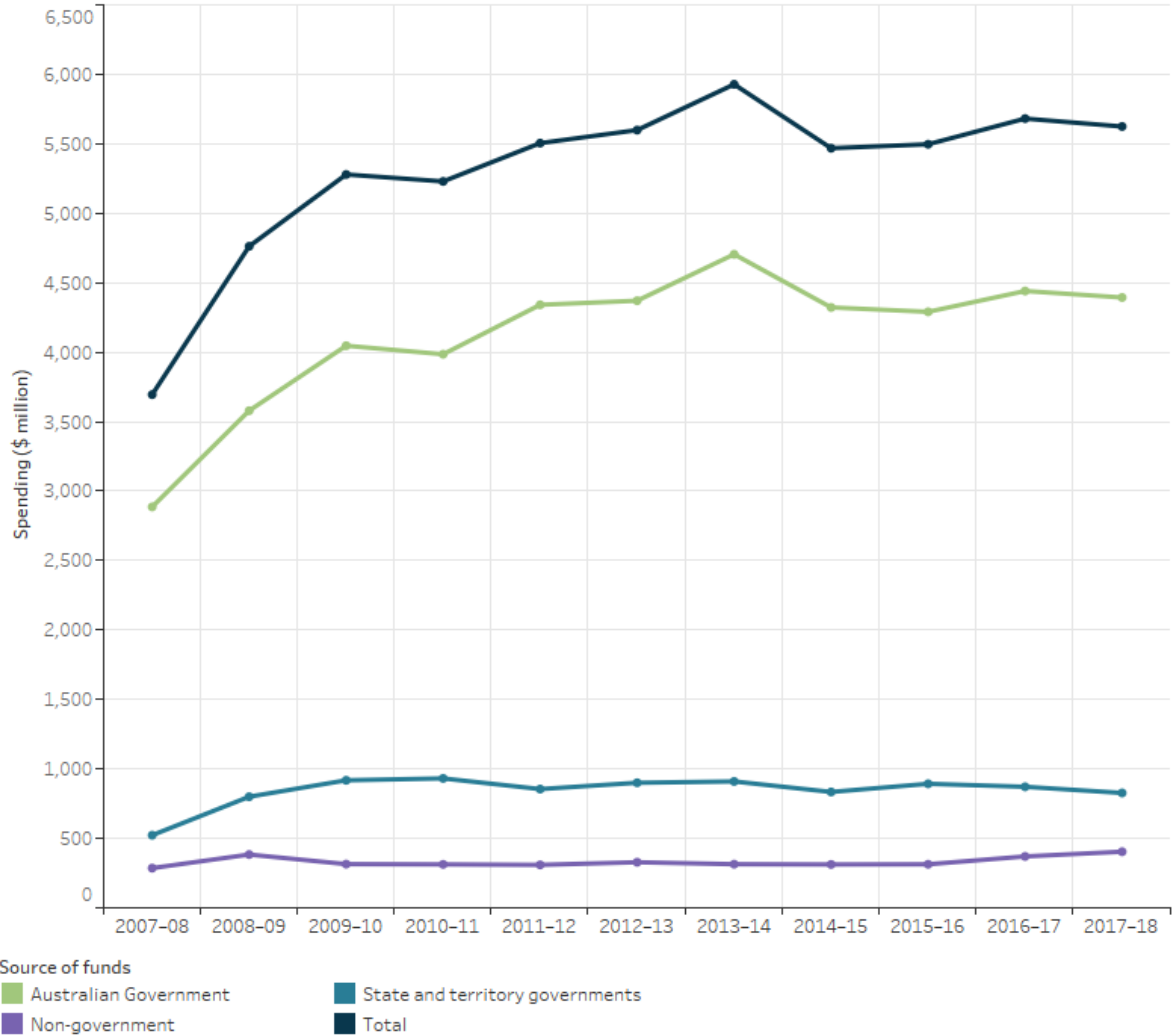
Australian Government funding

The Australian Government funds health and medical research directly through the National Health and Medical Research Council (NHMRC), the Medical Research Future

Fund (MRFF) and the Biomedical Translation Fund, and indirectly through block grants to universities and the Research and Development Tax Incentive. The Australian Government also contributes funding through grants to both public and private research institutions and organisations, such as the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Cancer Australia. The Australian Government is provided with advice on matters related to research by NHMRC and the Australian Research Council.

Over the past 20 years, Australian Government spending on health and medical research varied from year to year but has increased since 2010–11. In 2017–18, just under three-quarters (74%) of the $4.4 billion spent by the Australian Government on health and medical research was for university-based research (AIHW 2019).

National Health and Medical Research Council

In 2018, the NHMRC spent $862 million across around 4,200 grants. Of this, $346 million (40%) was spent on basic science; $300 million (35%) on clinical medicine and science; $121 million (14%) on public health; and $54 million (6.3%) on health services research (Figure 2). Since 2000, the proportion of grant spending on clinical medicine and science has increased steadily, accompanied by a decreasing share spent on basic science (NHMRC 2019b). However, the multidisciplinary nature of research makes it difficult to delineate accurately different types of research in the health and medical field.

In addition to funding research, the NHMRC also gives guidance in research ethics and provides authoritative health advice translated from health research, such as healthy eating guidelines (NHMRC 2019a).

Figure 2: NHMRC grant spending by broad research area, 2000 to 2018

Broad research area
- Basic Science
- Clinical Medicine and Science
- Public Health
- Health Services Research
- Not Applicable
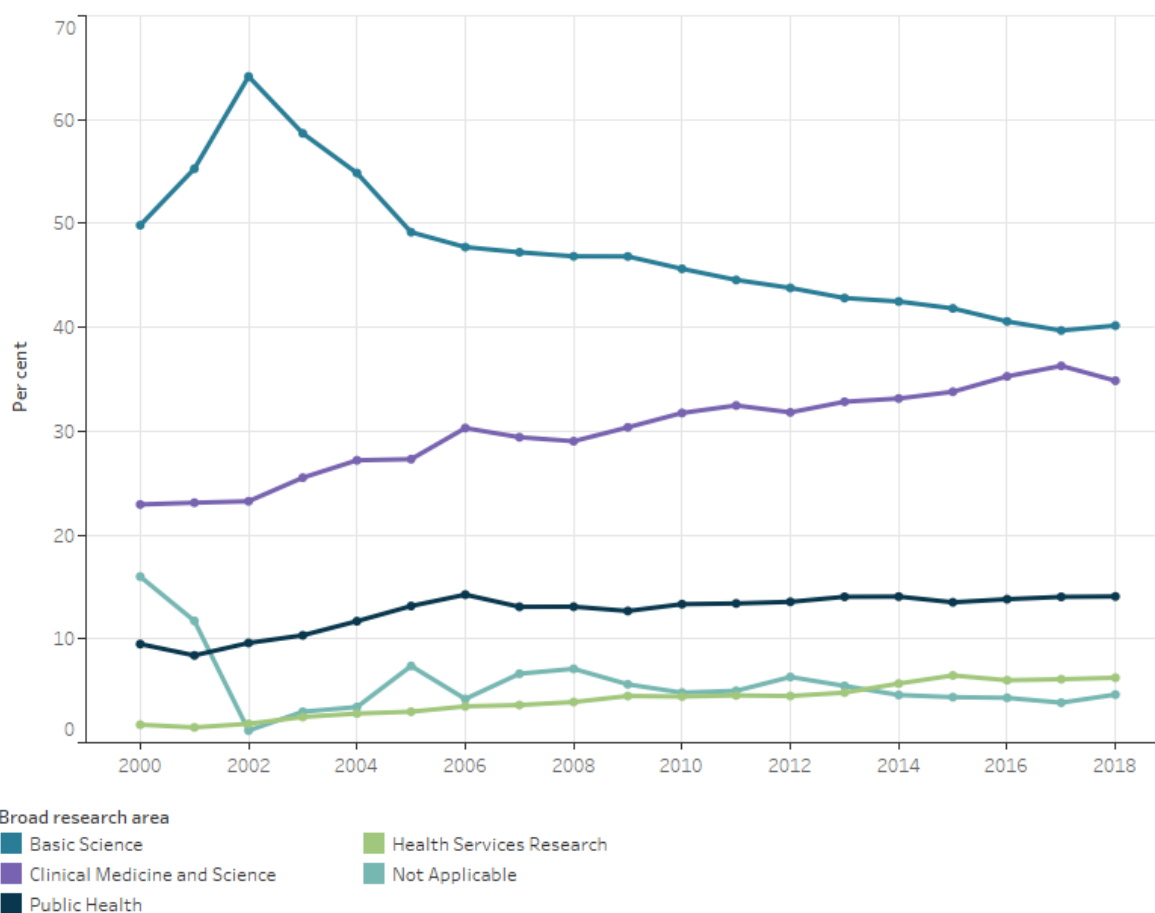
Notes
1. Yearly proportions are calculated using current prices.
2. 'Not Applicable' includes Equipment Grants and Independent Medical Research Institute Infrastructure funding, and any other grants for which applications are not required, plus Block Funding grants where multiple allocations may be appropraite but are not available.
3. This data was current as at 5 May 2019 and is subject to change over time due to grant status alterations, the indexation of expenditure and the allocation of funding for new awards.
Source: NHMRC 2019b.
http://www.aihw.gov.au/

Medical Research Future Fund

The MRFF, established under the *Medical Research Future Fund Act 2015,* provides grants of financial assistance to support health and medical research and innovation to improve the health and wellbeing of Australians. This funding is in addition and complementary to that provided by the NHMRC.

In 2018–19, $206 million was funded through MRFF grants. Of this, more than half (55%) was spent on funding treatments, clinical trials and advanced health care and medical technologies. Further investment in the MRFF is budgeted over the next few years (Department of Health 2019).

Commonwealth Scientific and Industrial Research Organisation

The CSIRO is Australia's national science research institution, and an independent Australian Government agency. In 2018–19, Australian governments (including state and territory governments) contributed $209 million to CSIRO in the form of co-investments or payments for consulting and services (not limited to health and medical research). Other revenue from governments totalled $835 million. In the same year, CSIRO invested $58 million in health objectives (4.3% of its total research investment spending) (CSIRO 2019).

State and territory government funding

Overall, over the past 20 years state and territory government spending on health and medical research has increased (AIHW 2019).

In 2017–18, Queensland spent the most on health and medical research ($250 million) and Tasmania the least ($6.4 million) (Figure 3). As a proportion of recurrent health expenditure, research expenditure was highest in the Australian Capital Territory (7.7%) and lowest in Tasmania (0.8%). In the same year, per person spending was highest in the Australian Capital Territory ($208) and lowest in Tasmania ($12) (Figure 3).

Figure 3: State and territory government spending on health and medical research, per person and as a proportion of recurrent expenditure, 2017–18

Select view:
(●) Total ($ million)
( ) Proportion of recurrent spending (per cent)
( ) Per person ($)
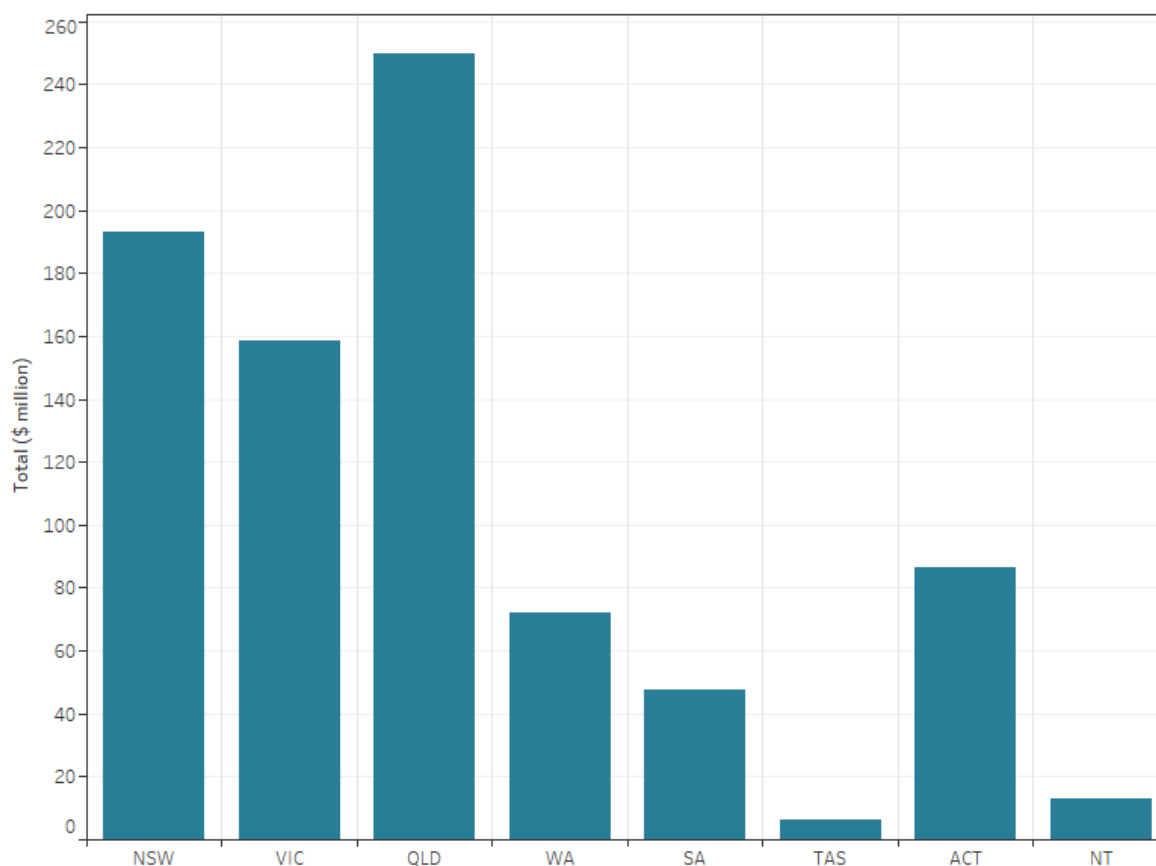
Source: AIHW 2019.
http://www.aihw.gov.au/

Non-government funding

In 2017–18, individual Australians contributed about $3.0 million to health and medical research. Generally, over the past 20 years, individual spending on health and medical research has increased (AIHW 2019). These figures may underestimate actual contributions as data on individual contributions to health and medical research are difficult to capture.

Data on spending by charities who conduct or finance health and medical research are similarly difficult to obtain. As of December 2019, about 240 charities or groups with a health focus listed as their main objective, and research listed as a major activity, were registered with the Australian Charities and Not-for-Profits Commission. However, it is currently not possible to disaggregate the proportion of their activities and funds directed towards health and medical research.

Other non-government sources, including injury compensation insurers and other private funding, such as non-government organisations that own private hospitals, spent $0.4 billion on health and medical research in 2017–18. Of this, about two-thirds was on university-based research (AIHW 2019).

How does Australia compare internationally?

Since 2007, the proportion of the total government research and development budget dedicated to health and medical research has been higher than the median among Organisation for Economic Co-operation and Development (OECD) member countries (Figure 4). In 2017, 17% of the total government research budget in Australia was allocated to health research, which was the third-highest proportion among all OECD countries (OECD 2019).

Figure 4: Proportion of total government research spending allocated to health research, current prices, 2007 to 2017

Country
- Australia
- OECD median
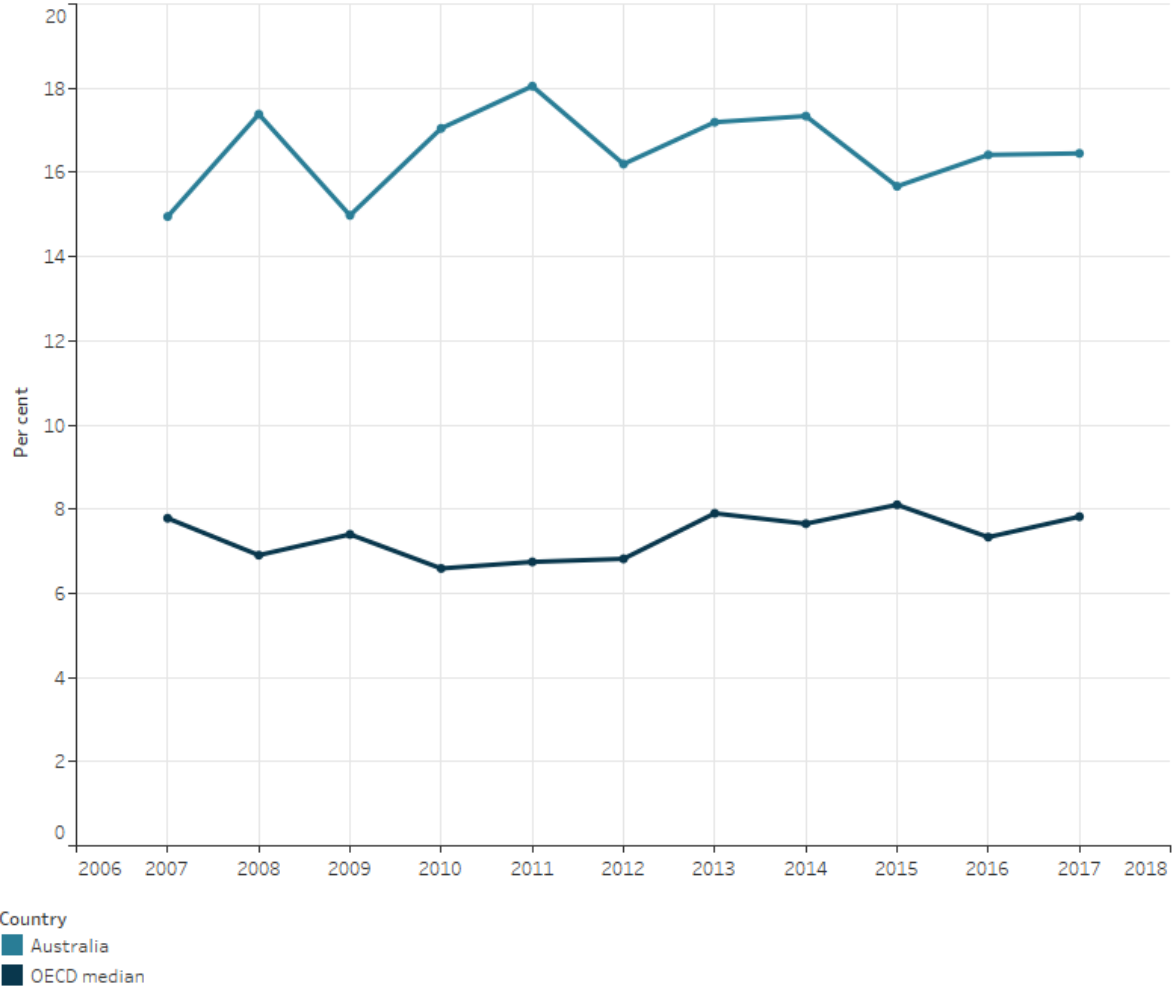
Note: Some countries were excluded in calculating the OECD median due to lack of data.
Source: OECD 2019.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on health and medical research, see:

- [Health expenditure Australia 2017–18](#)
- [National Health and Medical Research Council](#)
- Department of Health [Medical Research Future Fund](#)
- Australian Bureau of Statistics [Research and Experimental Development, Businesses, Australia, 2017–18](#)

References

ACNC (Australian Charities and Not-for-Profits Commission) 2019. [ACNC 2017 annual information statement data](#) (extract at 9 December 2019). Canberra: data.gov.au.

AAMRI (Association of Australian Medical Research Institutes) 2019. [Fast facts on medical research](#). Melbourne: AAMRI.

AIHW (Australian Institute of Health and Welfare) 2019. [Health expenditure Australia 2017–18](#). Cat. no. HWE 077. Canberra: AIHW.

CSIRO (Commonwealth Scientific and Industrial Research Organisation) 2019. [Annual report 2018–19](#). Canberra: CSIRO.

Department of Health 2019. [Annual report 2018–19](#). Canberra: Department of Health.

NHMRC (National Health and Medical Research Council) 2019a. [About us](#). Canberra: NHMRC.

NHMRC 2019b. [Summary tables 2000 to 2018](#). Canberra: NHMRC.

OECD (Organisation for Economic Co-operation and Development) 2019. [Government budget allocations for R&D](#). Paris: OECD.

Research Australia 2019. [Australian health and medical research](#). Sydney: Research Australia.

Health expenditure

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The complex structure of Australia's health system is reflected in its funding arrangement. The health system is funded by all levels of governments as well as non-government entities such as individuals, private health insurance providers, and injury compensation insurers.

How much does Australia spend on health?

Australia spent $185 billion on health goods and services in 2017–18, or $7,485 per person.

Between 2000–01 and 2017–18, total spending on health increased in real terms (after adjusting for inflation) from $91 billion to $185 billion—an average growth rate of 4.3% per year. Taking into account population growth, per person spending increased an average of 2.7% per year over the period in real terms (Figure 1).

Figure 1: Total health spending and health spending per person, constant prices, 2000–01 to 2017–18

○ Total health spending
○ Per person health spending
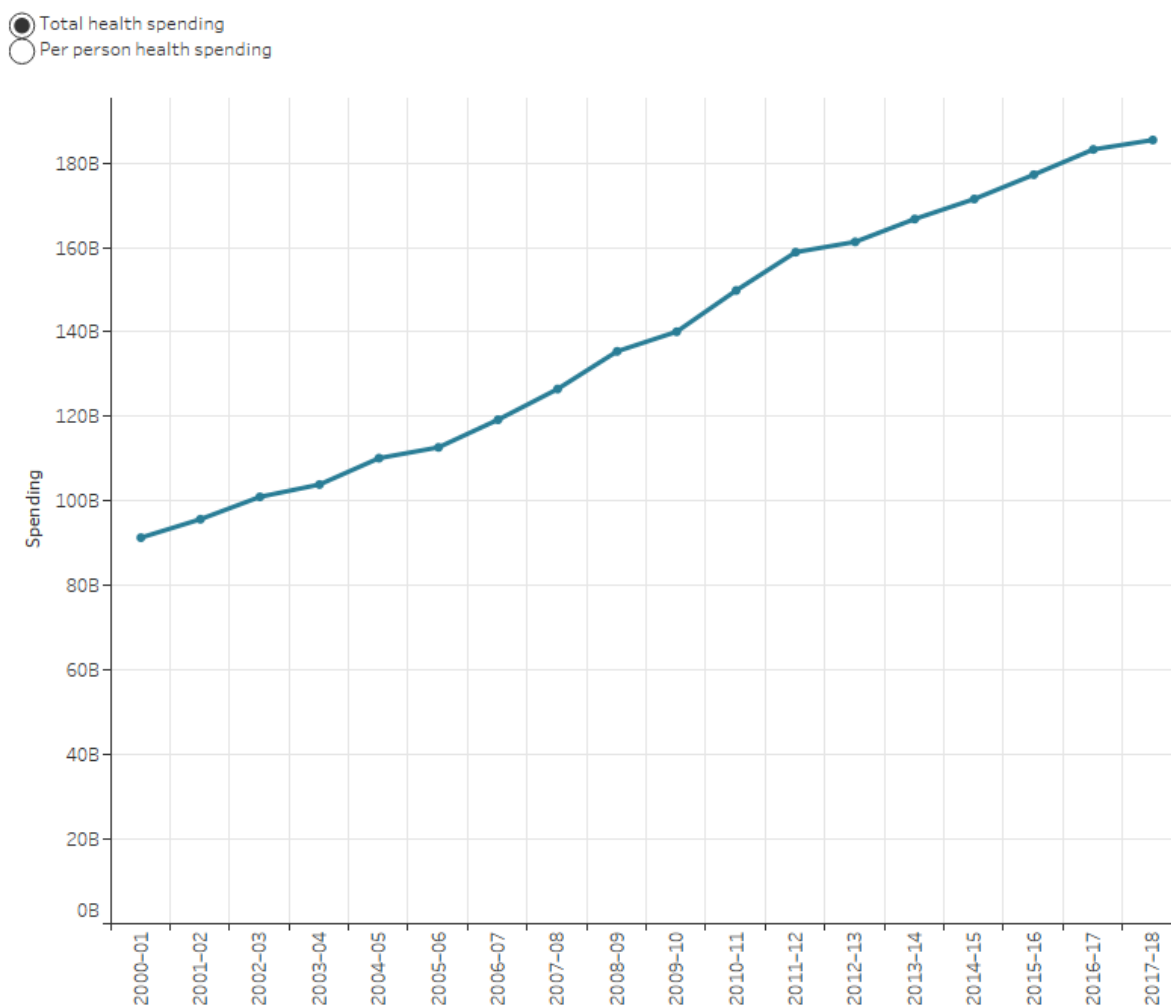
Note: Constant price health spending is expressed in 2017–18 prices.
Source: AIHW health expenditure database.
http://www.aihw.gov.au/

Health expenditure

Health expenditure is defined as spending on health goods and services that includes: hospitals (both public and private); primary health care (unreferred medical services, dental services, other health practitioners, community health, public health and medications); referred medical services; other services (patient transport services, aids and appliances, and administration); research; and capital expenditure.

The AIHW has been reporting on health expenditure in Australia for more than 3 decades. The annual estimates are based on data from the AIHW health expenditure database, which is a collation of more than 50 data sources that capture health spending by governments, individuals, insurers and other private sources (AIHW 2019b).

Relative to gross domestic product

Health spending has generally grown faster than the rest of the economy since 2000–01. The ratio of health spending to gross domestic product (GDP) increased from 8.3% in 2000–01 to 10% in 2017–18 (Figure 2). During this period, although nominal growth rates in health spending were on average higher than growth rates in GDP, both growth rates began to slow after the Global Financial Crisis (GFC) in 2007–08. Since 2015–16, the health to GDP ratio has declined.

Figure 2: Ratio of health spending to GDP, and annual growth rates, current prices, 2000–01 to 2017–18
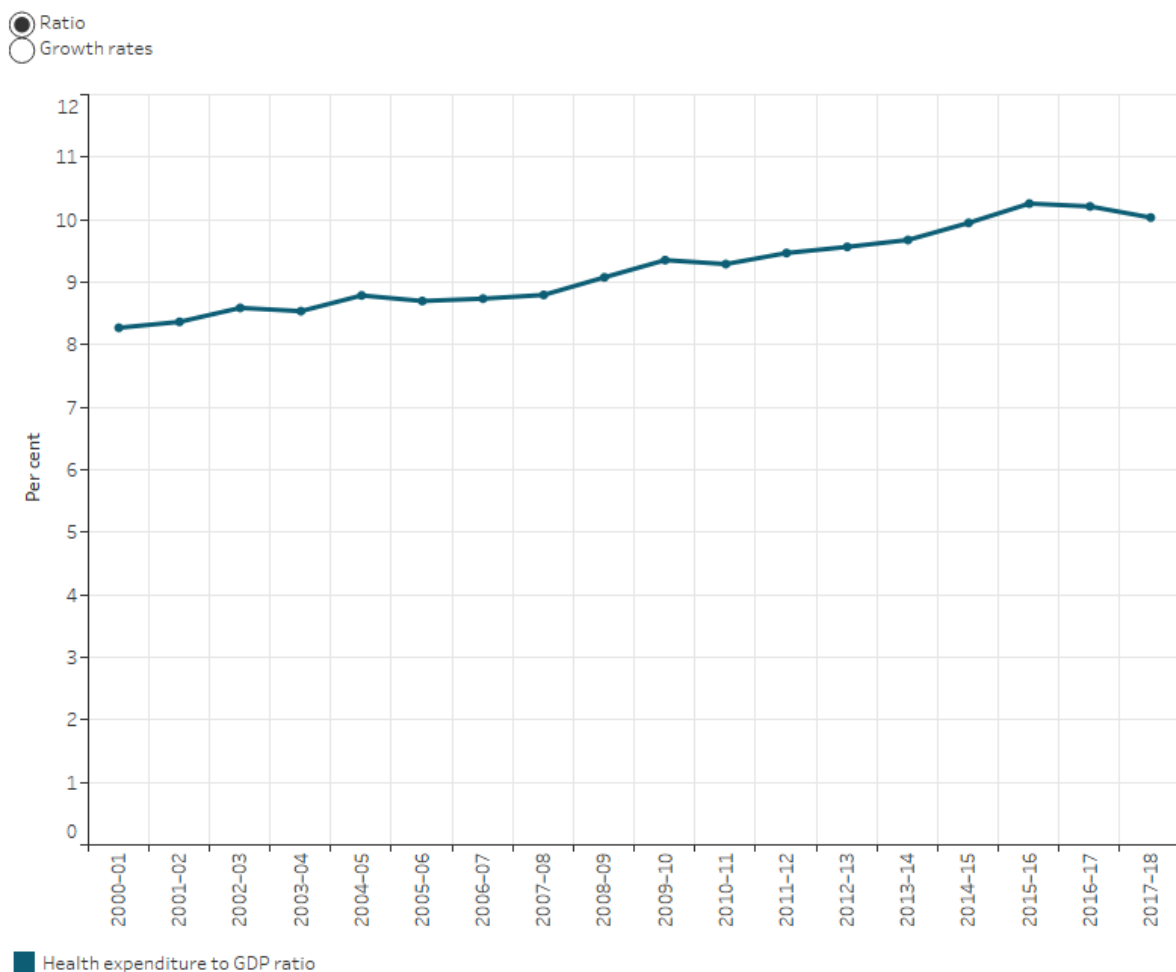
Source: AIHW health expenditure database; ABS 2019b.
http://www.aihw.gov.au/

Relative to tax revenue

About two-thirds (68%) of health spending is funded by governments, and these funds are primarily raised through taxation revenue. While government health spending as a ratio of taxation revenue was lower in 2000–01 than in 2017–18 (19% compared with

24%), there was no consistent trend during the period (Figure 3). Prior to the GFC, the ratio tended to increase each year. Following the GFC, the trend has been less consistent. The ratio peaked at 26% in 2009–10. Largely due to increases in tax revenue, the ratio declined between 2016–17 and 2017–18 from 26% to 24%.

Figure 3: Ratio of government health spending to tax revenue and annual growth rates, current prices, 2000–01 to 2017–18
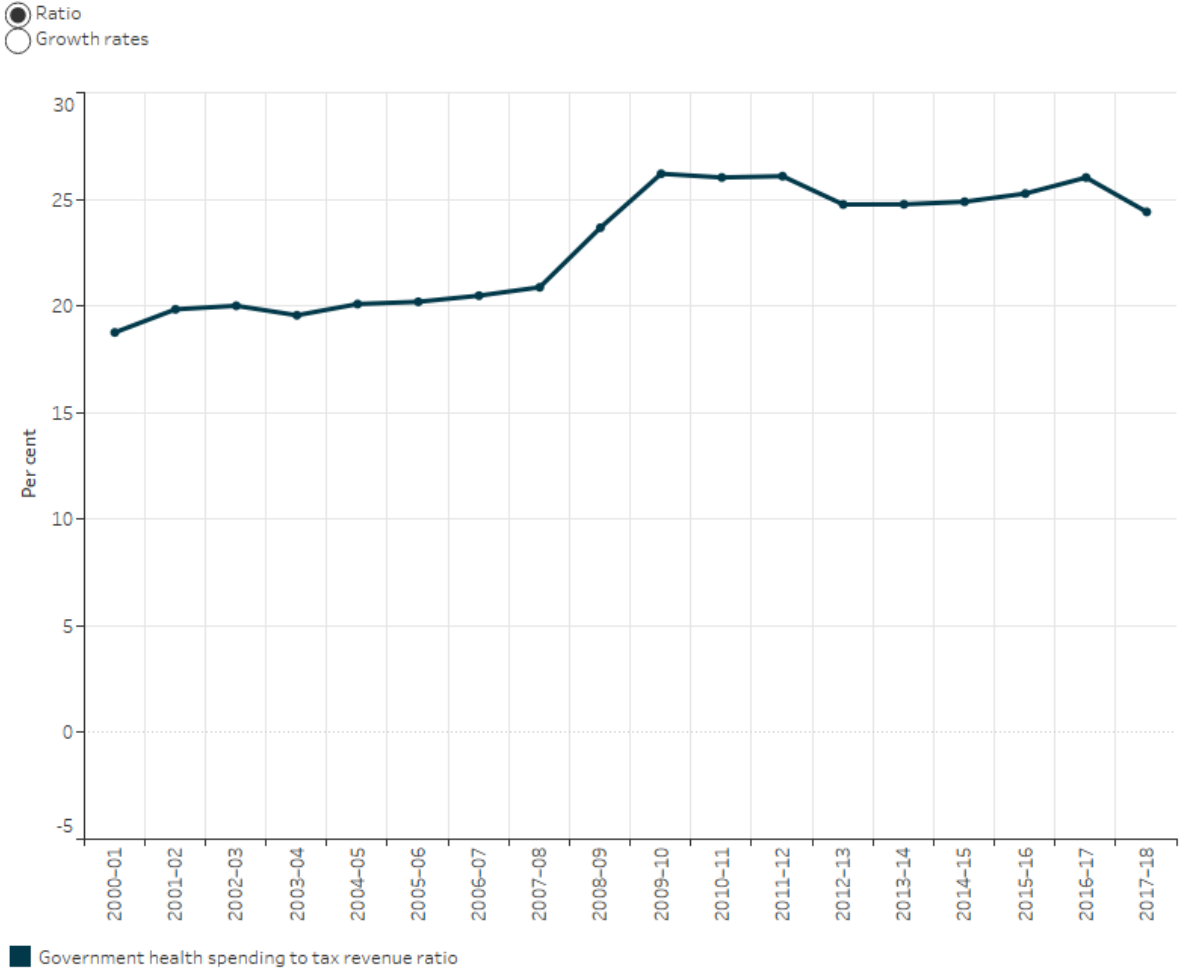
Sources: AIHW health expenditure database; ABS 2019c.
http://www.aihw.gov.au/

Relative to individual wealth

Between 2000–01 and 2017–18, personal health spending (individuals and non-government organisations, excluding private health insurers) grew by 4.9% per year on average per person, while individual wealth (net worth) grew nominally by 6.2% per year. In both 2016–17 and 2017–18, personal spending on health reflected less than 0.4% of individual wealth, the lowest since 2000–01 (Figure 4). It is important to note that these figures reflect the whole population in general and may not reflect the situation for certain individuals and population groups.

Figure 4: Ratio of per person personal health spending to per person net worth, and annual growth rates, current prices, 2000–01 to 2017–18
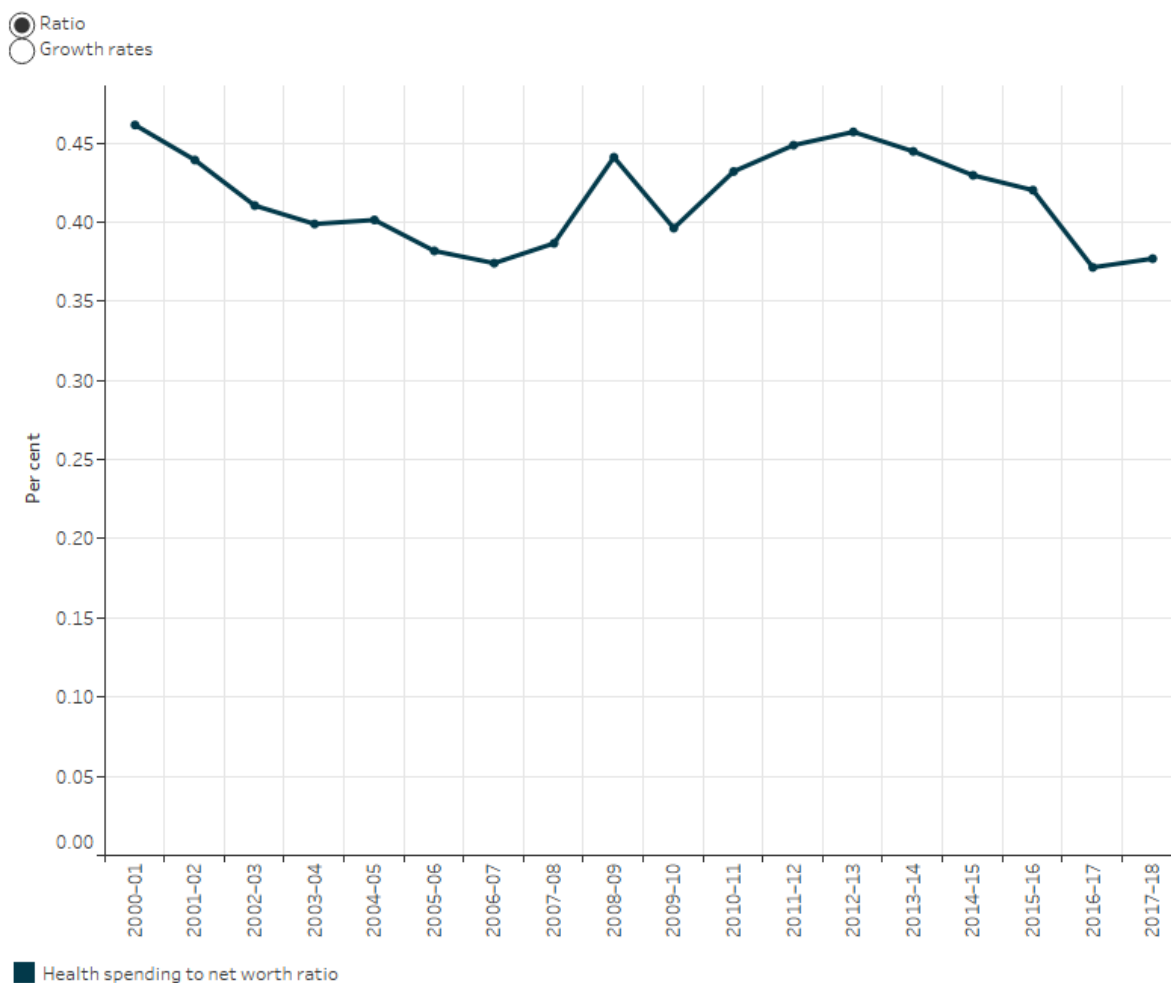
Sources: AIHW health expenditure database; ABS 2018; ABS 2019a.
http://www.aihw.gov.au/

International comparisons

Using the Organisation for Economic Co-operation and Development (OECD) System of Health Accounts, Australia's health spending to GDP ratio ranked between 18th and 8th among all OECD countries from 2000 to 2017 (Figure 5).

Before the GFC, in 2007, Australia's health spending to GDP ratio ranked 10th of OECD countries. During the GFC, many OECD countries experienced very low (even negative) GDP growth rates and their health spending to GDP ratios increased. Australia's rank in health spending to GDP ratio dropped to 16th in 2009 and 18th in 2010. In recent years (2014 to 2017), while growth in health spending was relatively high in Australia (5.0% per year on average, 13th in OECD), Australia's GDP growth rate was only 3.7% per year on average (21st in OECD). As a result, Australia's ranking grew to eighth with a ratio of 9.2% compared with the OECD median of 8.1% in 2017 (Figure 5).

See [International comparisons of health data](#).

Figure 5: Health spending to GDP ratios and Australia's rank among OECD countries, current prices and local currencies, 2000 to 2017

○ Ranking (2000 to 2017)
○ Ratios (2017)
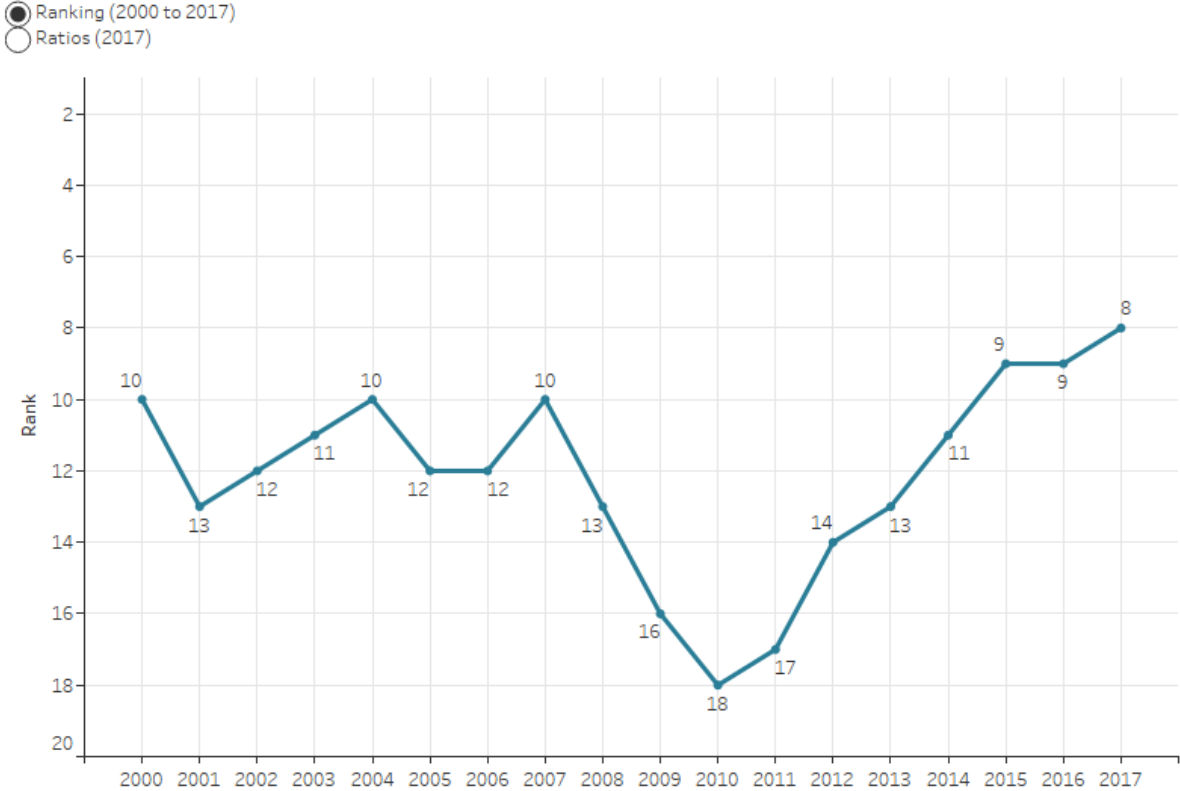
Notes
1. For comparison across OECD countries, health spending figures exclude spending by providers of long-term care facilities. Health spending figures in international comparisons are not comparable with data in other sections.
2. Due to a difference in reference year and methodology, these ratios are not comparable to *Australia's health expenditure: an international comparison* (AIHW 2019a).
Sources: AIHW health expenditure database; OECD 2019b.
http://www.aihw.gov.au/

Organisation for Economic Co-operation and Development—System of Health Accounts

The OECD is a forum where governments come together to discuss a range of issues, such as health, with the aim of improving economic and social wellbeing of communities (OECD 2019a). The OECD currently has 36 member countries including Australia, which has been a member since 1971. For more information on the OECD, see [the OECD website](#).

The OECD uses the System of Health Accounts (SHA) 2011 framework to collect and report data on health expenditure. This framework looks at the consumption, provision and financing of health care (OECD et al. 2017).

What is the money spent on?

Between 2000–01 and 2017–18, in terms of proportion of health spending, there was a shift away from primary health care to hospitals. In 2000–01, health spending on primary health care contributed about 37% of total health spending while hospitals accounted for 36%. In 2017–18, spending on hospitals made up 40% of total health spending and primary health care accounted for 34%. The remaining health spending was on referred medical services (10%), other services (7.4%), capital (5.0%) and research (3.0%). Capital spending increased in 2016–17 due to a one-off large capital spend by South Australia related to the construction of the Royal Adelaide Hospital (Figure 6).

Figure 6: Proportion of total health spending, by areas of spending, current prices, 2000–01 to 2017–18
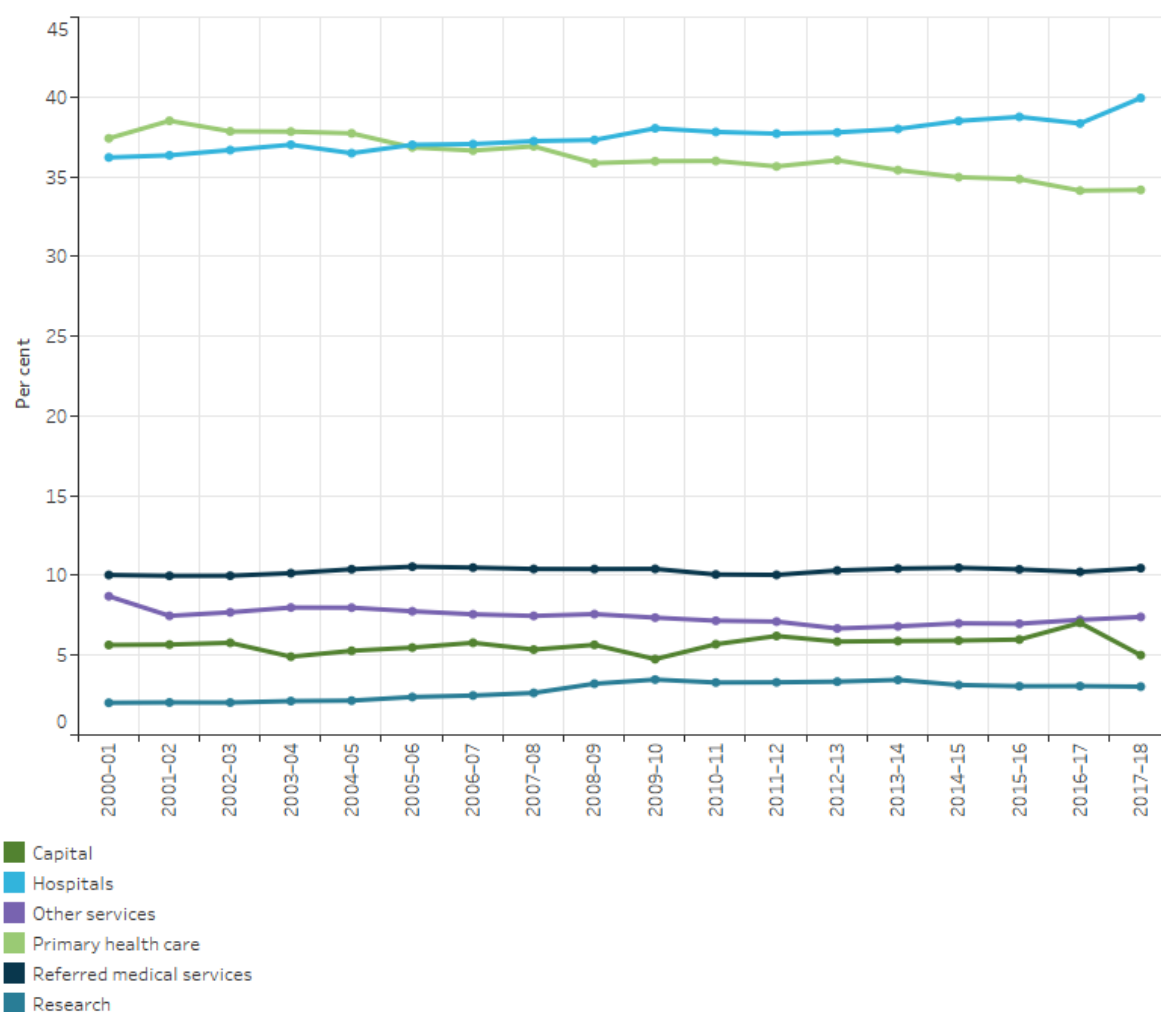
Source: AIHW health expenditure database.
http://www.aihw.gov.au/

Who pays for health?

Since 2000–01, on average, about two-thirds of total health spending has been funded by government with the remaining one-third funded by non-government sources. Between 2014–15 and 2017–18, the proportions of funding from the government sector (the Australian Government and the state and territory governments) and private health insurance providers increased while that of individuals declined. In 2017–18, government sources were responsible for 68% of health spending, with around 42% funded by the Australian Government and 27% by the state and territory governments. The remaining 32% was financed by non-government sources: 17% by individuals, 9.0% by private health insurance providers and 6.2% from other non-government sources (component figures may not add to the totals due to rounding) (Figure 7).

Figure 7: Proportion of total health spending, by source of funds, current prices, 2000–01 to 2017–18
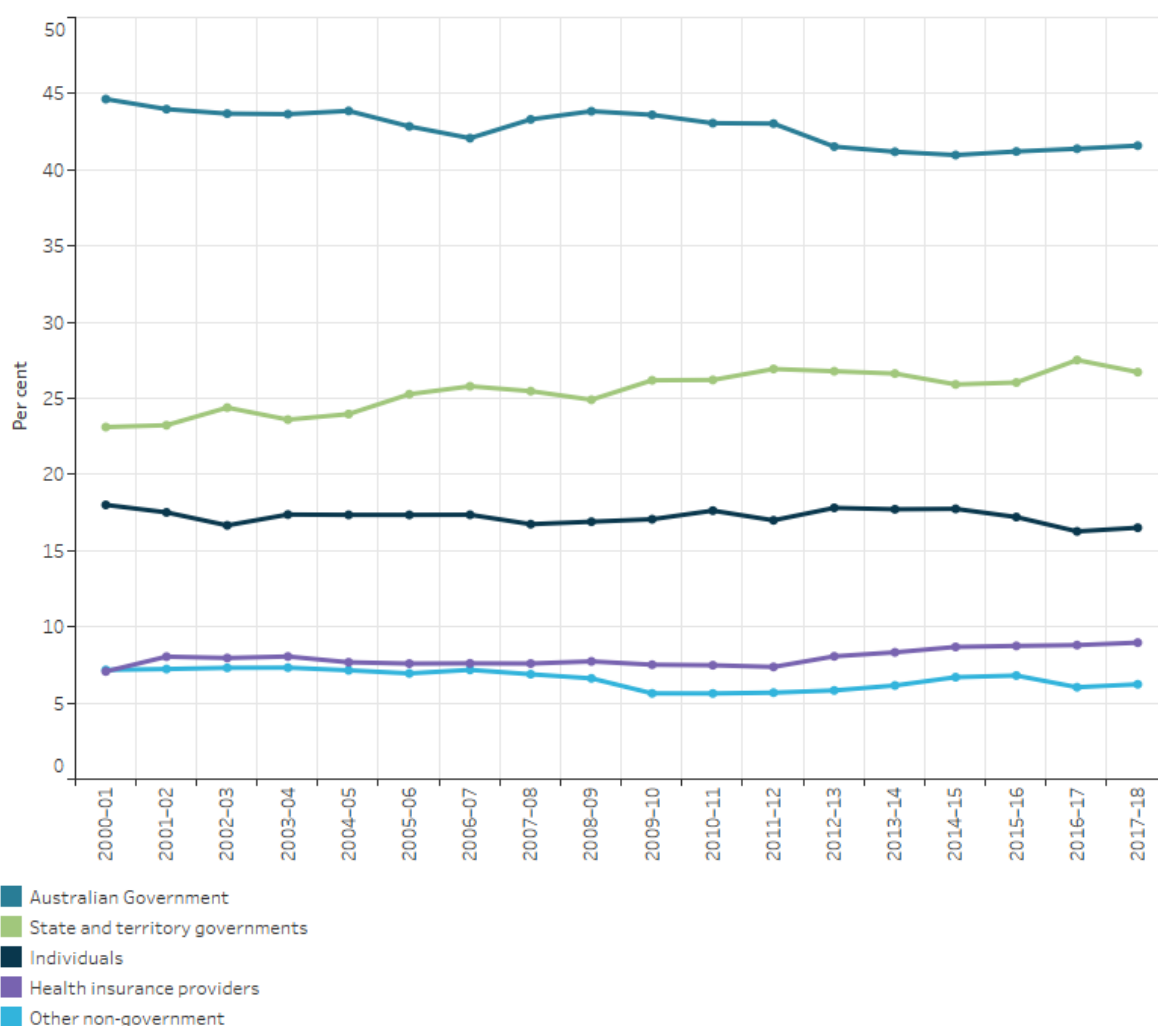
Source: AIHW health expenditure database.
http://www.aihw.gov.au/

The Australian Government's proportion of spending was highest for research (78%) and lowest for capital (1.3%). State and territory governments contributed the most for hospital (42%) and lowest for research (15%). Non-government funds accounted for the largest portion of capital (57%) and smallest for research spending (7.2%) (Figure 8).

Figure 8: Area of spending by source of funds, 2017–18

Source of fund
- Non-government
- State and territory governments
- Australian Government
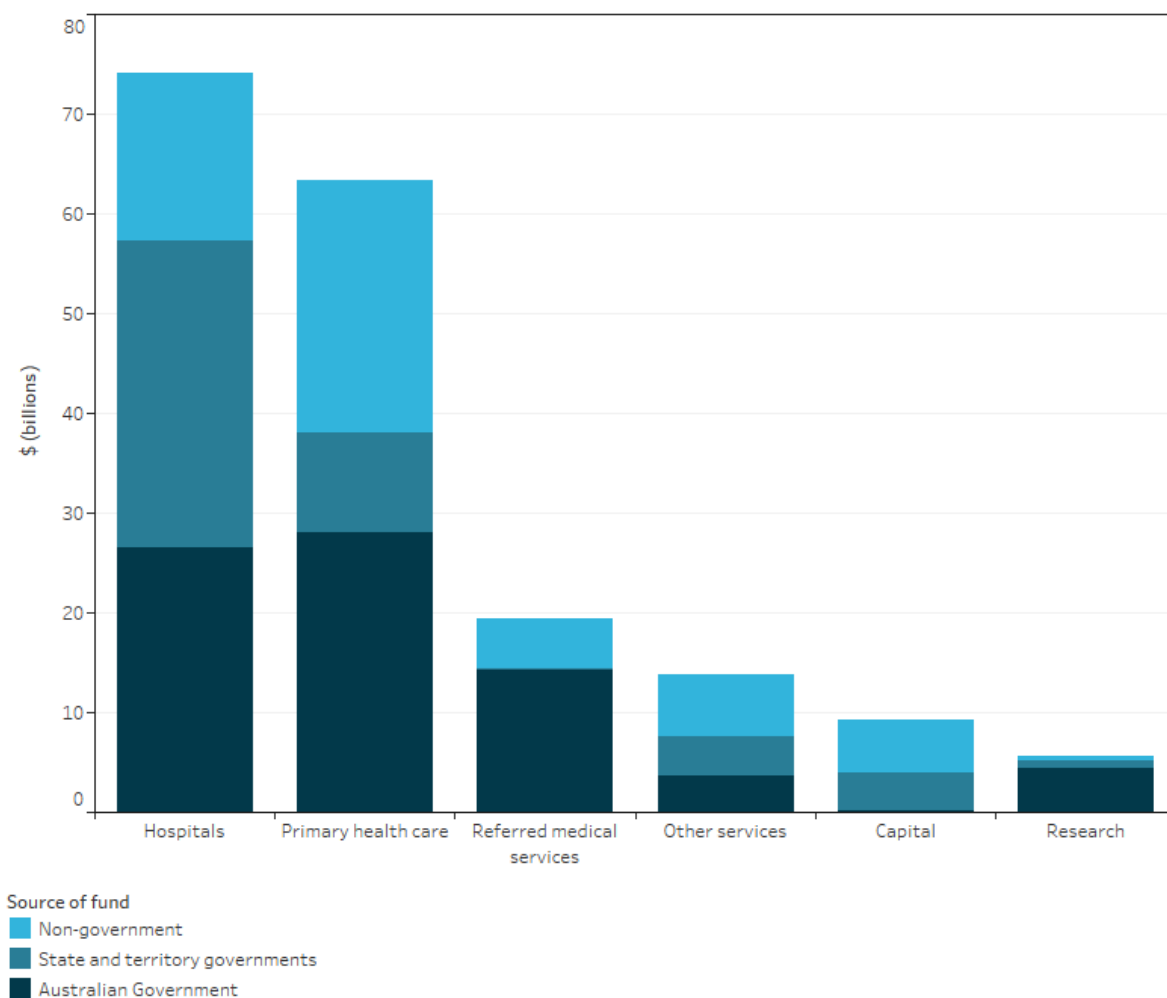
Note: There was no state and territory spending on referred medical services.
Source: AIHW health expenditure database.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on health expenditure, see:

- Health expenditure Australia 2017–18

- Australia's health expenditure: an international comparison

- Disease expenditure in Australia

Visit Health & welfare expenditure for more on this topic.

References

ABS (Australian Bureau of Statistics) 2018. Australian system of national accounts, 2017–18. ABS cat. no. 5204.0. Canberra: ABS

ABS 2019a. Australian demographic statistics, December 2018. ABS cat. no. 3101.0. Canberra: ABS

ABS 2019b. Australian national accounts: national income, expenditure and product, December 2018. ABS cat. no. 5206.0. Canberra: ABS.

ABS 2019c. Taxation revenue, Australia, 2017–18. Customised report. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019a. Australia's health expenditure: an international comparison. Cat. no. HWE 75. Canberra: AIHW

AIHW 2019b. Health expenditure Australia 2017–18. Health and welfare expenditure series no. 65. Cat. no. HWE 77. Canberra: AIHW

OECD (Organisation for Economic Co-operation and Development) 2019a. About the OECD. Paris: OECD.

OECD 2019b. Health statistics 2019. Paris: OECD. Viewed 20 November 2019.

OECD, Eurostat & WHO (World Health Organization) 2017. A system of health accounts 2011: revised edition. Paris: OECD Publishing.

Health promotion

The conditions in which we live, work and play influence our health behaviour and lifestyle choices. In 2015, 38% of disease burden was preventable and due to modifiable risk factors, such as tobacco use, overweight and obesity, high blood pressure or poor diet (AIHW 2019).

Health promotion is a broad term. It focuses on preventive health—preventing the root causes of ill health—rather than on treatment and cure, so that people remain as healthy as possible for as long as possible. Health promotion encompasses a 'combination of educational, organisational, economic and political actions' (Howat et al. 2003) to enable individuals and communities to increase control over and improve their health. This occurs with consumer participation through attitudinal, behavioural, social and environmental changes (Howat et al. 2003).

In health promotion, a mix of interventions are often used for greater effectiveness. For example, actions to address obesity use a mix of behavioural and structural approaches. These aim to target physical activity and food intake at an individual level, and to change the environment that promotes obesity (Jancey et al. 2016). Examples include policy, economic and environmental actions such as restrictions on fast food advertising to children, availability of fresh fruit and vegetables, and taxes on sugary drinks (Jancey et al. 2016; Victorian Department of Health and Human Services 2019). Health promotion through urban planning and design can increase physical activity opportunities by access to green spaces, cycling pathways and use of public transport (Giles-Corti et al. 2019). See Built environment and health.

Tangible health promotion strategies are apparent in the COVID-19 pandemic response, for example in the development of educational resources and social marketing campaigns to promote hand hygiene and social distancing (Smith and Judd 2020). This kind of messaging must instruct, inform and motivate individual self-protective behaviours, with the quality of the societal response being dependent on meeting the specific communication needs of all sub-populations (Vaughan and Tinker 2009). See Health literacy.

Health promotion success stories

Australia has a long history of health promotion. Memorable campaigns such as 'Slip Slop Slap', 'Life. Be in It' and 'Every cigarette is doing you damage' are examples of population-targeted health promotion (AIHW 2018). The compulsory wearing of

seatbelts in motor vehicles, random breath testing and 50 km/h residential street limits have been part of a more comprehensive health promotion road safety strategy. Road deaths have reduced from 30 per 100,000 population in 1970 to 4.6 per 100,000 in 2018 (BITRE 2010, 2018).

The following topics highlight some excellent examples of successful health promotion in Australia. An emphasis on the need for national-level action to complement local-level implementation is repeatedly highlighted in health promotion (WHO 2016).

Tobacco control

The tobacco control measures of all Australian governments and public health organisations have been key to Australia's success in tobacco control. Smoking rates have declined to historically low levels, particularly among children and youth. Between 1984 and 2017, the proportion of 16 and 17 year olds smoking at least once in the previous week declined from 30% to 10%, and from 20% to just 3% among 12−15 year olds (White & Williams 2016; Guerin & White 2018).

The latest data from the National Health Survey (NHS) 2017−18 estimates that 13.8% of Australians aged 18 and over are daily smokers. Rates have declined steadily over the last 30 years and after adjusting for age, the proportion of adults who are daily smokers has halved since 1989–90. For more information on Australia's smoking rates see Tobacco smoking.

In recent decades, Australia has progressively implemented a comprehensive suite of tobacco control measures including (Figure 1):

- staged tobacco excise increases
- smoke-free laws and policies
- social marketing campaigns
- measures to minimise the illicit tobacco trade
- plain packaging of tobacco products
- labelling tobacco products with graphic health warnings
- prohibiting tobacco advertising, promotion and sponsorship
- providing support for smokers to quit (Department of Health 2018a).

These measures form part of Australia's National Tobacco Strategy (NTS) 2012−2018. The NTS provides a national framework for all Australian governments and non-government organisations to work together to improve the health of Australians by reducing tobacco use and its associated harms.

Figure 1: Age-standardised daily smokers aged 18 and over, by sex and key tobacco control measures in Australia, 1989–90 to 2017–18

Point-of-sale advertising bans (1998-2006)

Further 12.5% excise rises each year on 1 Sept from 2014 to 2020

Tobacco Advertising Prohibition Act

Increase in tobacco excise

First National Tobacco Campaign

Graphic health warnings on packs

25% excise rise

Plain packaging and new larger health warnings

Advertising ban in print media

Health warning on packs

Smoke-free dining

Tackling Indigenous Smoking Initiative

Point-of-sale display bans

First 12.5% excise rises implemented

■ Males   ■ Females   ■ Persons

Notes:
1. For 1989–90 and 1995 'current daily smoker' has been reported using the category 'current smoker'. For those years, the definition of 'current smoker'—regularly smoking one or more cigarettes per day on average—aligns with the definition that has been used for the category 'current daily smoker' from 2001 onwards.
2. Proportions were age standardised to the 2001 Australian Standard Population.
3. The first National Tobacco Campaign was launched in June 1997 and aimed primarily to assist smokers aged 18-40 to quit.
Sources: ABS 2019; Customised report: National Health Survey 1989-90, 1995, 2001, 2004-05, 2007-08, 2014-15, 2017-18; Australian Health Survey 2011-13.
http://www.aihw.gov.au/

HIV prevention and treatment

Australia's response to HIV is an example of effective health promotion (Smith et al. 2016). Since the 1980s, health promotion and prevention principles have been integral to 8 National HIV Strategies, such as partnerships between government and non-government organisations, clinicians, researchers and political parties and 'active participation from affected communities' (Smith et al. 2016).

This approach has helped Australia to achieve a relatively low HIV prevalence, by international standards (Brown et al. 2014). At the end of 2018, the estimated prevalence of HIV in Australia was 0.14% (Kirby Institute 2019). Australia's current National HIV Strategy 2018–2022 prioritises access to quality prevention, testing, treatment, care and support services for all people with HIV and those at risk

(Department of Health 2018b). The strategy also prioritises addressing HIV-related stigma and discrimination. More recently, Australia has made significant steps towards providing equitable access to Pre-Exposure Prophylaxis for those at medium and high risk.

Health in All Policies

As a concept, Health in All Policies (HiAP) takes into account the health implications from policies across all levels of government and sectors to improve population health and health equity. It recognises that many of the determinants of health and health inequities originate beyond just the health sector and health policies (WHO 2014). That is, health and wellbeing are determined by a range of factors including age, sex and genetics, and individual behaviours as well as the social, cultural and economic contexts within which we live (SA Health 2020). See Social determinants of health.

HiAP has been tested across a number of countries (WHO 2010). Some of the tools that have been 'shown to be useful at different stages of the policy cycle include:

- inter-ministerial and inter-departmental committees
- community consultations
- cross-sector action teams
- integrated budgets and accounting
- Health Lens Analysis
- cross-cutting information and evaluation systems
- impact assessments
- joined-up workforce development and legislative frameworks' (WHO 2010).

Established in 2007, the South Australian HiAP approach is a whole of government initiative. It aims to achieve better public policy outcomes, deliver shared benefits for all agencies and improve population health and wellbeing. 'By incorporating a focus on population health into the policy development process of different agencies, the government is able to better address the social determinants of health in a systematic manner' (SA Health 2020).

The successful implementation of HiAP in South Australia has been supported by a strong evaluation process (SA Health 2020).

Evaluating health promotion initiatives

Health promotion activities have been shown to be cost saving, whereby the cost of implementing the intervention is offset by savings associated with reductions in treating disease (Vos et al. 2010). Monitoring and evaluation are important to assess the performance of health promotion initiatives and provide the evidence that researchers, policy makers and service providers need on what works.

Evaluating the impact and cost of community and nationwide initiatives can be difficult. Directly attributing health outcomes to a specific initiative itself is a challenge, and this is further complicated when multiple strategies are being applied at once (for example, legislation, taxation and promotion campaigns). Evidence to support the effectiveness of health promotion initiatives may not be available for many years as health impacts and benefits may not manifest until years after the intervention has been implemented.

Where do I go for more information?

For more information on health promotion, see:

- Department of Health [Preventive health](#)
- World Health Organization [What is health promotion](#)
- SA (South Australian) Health [Health in all policies](#)
- [Australian Health Promotion Association](#)
- [Public Health Association of Australia](#)

References

ABS (Australian Bureau of Statistics) 2018. [Microdata: National Health Survey, 2017–18.](#) ABS cat. no. 4324.0.55.001. Findings based on Detailed Microdata analysis. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2018. [Australia's health 2018](#). Australia's health series no. 16. Cat. no. AUS 221. Canberra: AIHW.

AIHW 2019. [Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015](#). Australian burden of disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

BITRE (Bureau of Infrastructure, Transport and Regional Economics) 2010. [Road deaths in Australia 1925–2008](#). Canberra: BITRE.

BITRE 2018. Road trauma Australia 2018 [statistical summary](#). Canberra: BITRE.

Brown G, O'Donnell D, Crooks L, Lake R 2014. Mobilisation, politics, investment and constant adaption: lessons from the Australian health-promotion response to HIV. Health Promotion Journal of Australia 2014 25:35–41. http://dx.doi.org/10.1071/HE13078

Department of Health 2018a. [Tobacco control—key facts and figures](#). Fact sheet.

Department of Health 2018b. [Eighth National HIV Strategy](#). Canberra: Department of Health.

Giles-Corti B, Badland H, Hooper P, Timperio A, Sugiyama T & Foster S 2019. Action area 1: [Built environments. In: Blueprint for an Active Australia](#). 3rd edn. Melbourne: National Heart Foundation of Australia.

SA Health 2020. South Australia's HiAP approach. Government of South Australia. Viewed 28 April 2020.

Guerin N & White V 2018. ASSAD 2017 Statistics & Trends: Australian Secondary Students' Use of Tobacco, Alcohol, Over-the-counter Drugs, and Illicit Substances. Cancer Council Victoria.

Howat P, Maycock B, Cross D, Collins J, Jackson L, Burns S & James R 2003. Towards a more unified definition of health promotion. Health Promotion Journal of Australia 14(2):82–5.

Jancey J, Barnett L, Smith J, Binns C & Howat P 2016. We need a comprehensive approach to health promotion. Health Promotion Journal of Australia 27:1–3. http://dx.doi.org/10.1071/HEv27n1_ED.

Kirby Institute 2019. HIV. What's new in 2018? https://data.kirby.unsw.edu.au/hiv Sydney: Kirby Institute, UNSW Sydney.

Smith JA, Crawford G & Signal L 2016. The case of national health promotion policy in Australia: where to now? Health Promotion Journal of Australia 27:61−65. http://dx.doi.org/10.1071/HE15055.

Smith JA & Judd J 2020. COVID-19: Vulnerability and the power of privilege in a pandemic. Health Promotion Journal of Australia 31:158-160. https://doi.org/10.1002/hpja.333

Vaughan E & Tinker T 2009. Effective Health Risk Communication About Pandemic Influenza for Vulnerable Populations. American Journal of Public Health 99: S2. https://doi.org/10.2105/ajph.2009.162537

Victorian Department of Health and Human Services 2019. Local government and place-based approaches for primary prevention of obesity—lessons from Victoria. Presentation at the National Obesity Summit, Canberra 15 February 2019.

Vos T, Carter R, Barendregt J, Mihalopoulos C, Veerman JL, Magnus A et al. 2010. Assessing cost-effectiveness in prevention (ACE–Prevention): final report. Brisbane: University of Queensland, and Melbourne: Deakin University.

White V, Williams, T. 2016. Australian secondary school students' use of tobacco, alcohol, and over-the-counter and illicit substances in 2014. Cancer Council Victoria.

WHO (World Health Organization) 2010. Adelaide statement on health in all policies: moving towards a shared governance for health and well-being. Geneva, Switzerland. Viewed 6 November 2019.

WHO 2014. Health in all policies—Helsinki Statement Framework for Country Action. Geneva, Switzerland. Viewed 6 November 2019.

WHO 2016. Promoting health in the Sustainable Development Goals: report on the 9th Global Conference for Health Promotion, Shanghai, China, 21–24 November 2016: all for health, health for all. Geneva: World Health Organization 2017 (WHO/NMH/PND/17.5). Licence: CC BY-NC-SA 3.0 IGO.

Health system overview

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/health-system-overview

Every day, millions of Australians come into contact with the health system. It may be through health promotion and disease prevention programs such as school-based vaccinations; an appointment with a general practitioner (GP); a visit to the pharmacist to pick up a prescription; or a more complex interaction, such as being admitted to hospital for surgery. A key role of the health system is to respond to these individual needs by providing safe, effective, accessible and appropriate treatment and other services.

Australia's health system is a complex mix of service providers and other health professionals from a range of organisations—from Australian and state and territory governments and the non-government sector. Collectively, they work to meet the physical and mental health care needs of Australians.

The complex structure of Australia's health system is reflected in its funding arrangements. The health system is funded by Australian and state and territory governments as well as non-government funders such as private health insurers and individuals. See Health expenditure for more information.

Who is responsible for the health system?

The Australian and state and territory governments broadly share responsibility for funding, operating, managing and regulating the health system. The private for-profit and not-for-profit sectors also play a role in operating public and private hospitals, pharmacies and medical practices, as well as providing private health insurance products.

Health services are delivered by a range of health professionals working in a variety of settings, from large hospitals (in capital cities and regional centres) to small health clinics (including in remote areas). Australia's health workforce includes GPs, surgeons and other medical specialists, nurses and midwives, dentists, allied health practitioners including Indigenous health workers, paramedics and administrative and other support staff. See Health workforce for more information.

A variety of organisations support health services. Health departments and other agencies are responsible for policy and service planning. Research and statistical organisations collect and publish information on the performance of the health system, health conditions and issues. Universities and health services train health professionals. Consumer and advocacy groups have a role in public debates on policies and regulation.

Voluntary and community organisations also provide support directly to individuals as well as through activities like fundraising for research and awareness raising through health advocacy programs.

Role of government

Australian health ministers work together to shape Australia's health system through the Council of Australian Governments (COAG) Health Council—a forum for cooperation on health issues to improve health outcomes and ensure the sustainability of the health system (COAG 2014).

Australian Health Performance Framework

In 2017, the Australian Government with the states and territories agreed to the Australian Health Performance Framework (AHPF)—a vehicle to support system-wide reporting on Australia's health and health care performance (COAG 2017).

In December 2019, the AIHW released the AHPF 'National front door' and indicator reporting platform, which serves as a navigation tool to access data on the health of Australians and the performance of the health system. AHPF indicators will be updated as new data become available. AIHW is leading a program of work to develop new indicators under the AHPF.

The main roles of each level of government in Australia's health system are described below (Biggs & Cook 2018; Department of Health 2019; Duckett & Willcox 2015).

The Australian Government:

- develops national health policy
- funds medical services through Medicare and medicines through the Pharmaceutical Benefits Scheme (PBS)
- provides funds to states and territories for public hospital services
- funds population-specific services, including community-controlled Aboriginal and Torres Strait Islander primary health care, health services for veterans, and residential aged care
- funds health and medical research
- regulates medicines and medical devices
- supports access to and regulates private health insurance.

State and territory governments:

- fund and manage public hospitals
- regulate and license private hospitals and other health premises, and regulate products with health impacts such as alcohol and tobacco
- deliver community-based and preventive services (for example, cancer screening and immunisation), ambulance services, and services to address complaints against any of these.

Local governments in some jurisdictions can be involved in:

- delivery of community and home-based health and support services
- environmental health services (for example, waste disposal, water fluoridation)
- public health activities.

Additionally, all levels of government have shared responsibilities, including education and training of health professionals, regulation of the health workforce, food standards and safety, improving the safety and quality of health care and funding of programs and services (Biggs & Cook 2018; Department of Health 2019; Duckett & Willcox 2015).

What services are available?

Many services are required to meet the health needs of Australians and deliver a high-quality health system. These include:

- Health promotion and disease prevention programs, which focus on improving health and preventing the root causes of ill health. This includes immunisation and vaccination, healthy lifestyle initiatives and cancer screening.
- Primary health care, which is often a person's first contact with the health system. It comprises frequently accessed services including general practice, dispensing medicines, allied health services and community health.
- Specialist care, which provides services for those with specific or complex conditions or issues. This includes mental health services, cancer treatment, alcohol and other drug treatment services, palliative care, and clinical assessment for surgery, as well as diagnostic services such as pathology and imaging. Specialist care includes Specialist, pathology and other diagnostic services where the patient's presentation to the specialist is recommended by another medical practitioner.
- Hospital care, which includes services provided to admitted and non-admitted patients (outpatient clinics and Emergency Department care).

Most people have exposure to preventive health measures across their life, from educational campaigns to free vaccines. People utilise health services as needed, dependent on their health needs and personal circumstances. Some may visit a pharmacy or GP infrequently; some may have regular appointments with a GP, specialists or other health practitioners; others may go to hospital for tests, treatments or emergencies.

Medicare

Australia's health system is underpinned by Medicare—a universal health insurance scheme. Medicare pays rebates for medical services and procedures provided by private practitioners in the community such as GPs and other medical practitioners, and Medicare ensures Australians have access to free hospital services for public patients in public hospitals and a range of prescription pharmaceuticals subsidised under the PBS

(Biggs 2016). Medicare is funded by the Australian Government through taxation revenue, including a Medicare Levy and Medicare Levy Surcharge (ATO 2019a). See [Medicines](), [Specialist pathology and other diagnostic services]() and [Allied health and dental services]() for more information.

Medicare is currently available to Australian and New Zealand citizens, permanent residents in Australia, and people from countries with reciprocal agreements (Department of Health 2019). Most people outside these categories have to pay full fees for health services or take out private health insurance (PrivateHealth 2019).

Private health insurance

Some medical and allied health services are not subsidised through Medicare. For example, Medicare does not usually cover costs for ambulance services, most dental services and optical aids (such as glasses and contact lenses). For these services, private health insurance is 1 option for managing these health care costs (Lewis & Willis 2018). Private health insurance can also give people with cover the option to avoid waiting lists in the public system and the ability to choose their own doctor (Biggs 2018).

The Australian Government offers a means-tested rebate to people who hold private health insurance, and imposes the Medicare Levy Surcharge on higher-income earners who do not have a particular form of private health insurance—the intent is to encourage people to take up private health insurance to reduce pressure on the publicly funded system (ATO 2019b).

See [Private health insurance]() for more information.

Hospitals

Hospitals are an important part of the health system, providing a range of services to many people. Australians admitted to public hospitals are guaranteed access to fee-free treatment as public patients. Funding of public hospital services is managed through intergovernmental agreements between the Australian Government and state and territory governments (Boxall 2014). These agreements specify the arrangements by which the Australian Government transfers funds to the states and territories to support public hospitals as well as how public hospital funding is managed more broadly. The current National Health Reform Agreement outlines an 'activity based' system whereby Australian Government funding is based on the estimated cost of the activities performed in each hospital.

See [Hospital care]() for more information.

Where do I go for more information?

For more information on the health system, see:

- [Australia's Health Performance Framework]()

- Department of Health The Australian health system

References

ATO (Australian Taxation Office) 2019a. Medicare levy. Canberra: ATO. Viewed 21 October 2019.

ATO 2019b. Private health insurance rebate. Canberra: ATO. Viewed 5 November 2019.

Biggs A 2016. Medicare: a quick guide. Canberra: Department of Parliamentary Services. Viewed 21 October 2019.

Biggs A & Cook L 2018. Health in Australia: a quick guide. Canberra: Department of Parliamentary Services. Viewed 21 October 2019.

Boxall A 2014. Explainer: what is Medicare and how does it work? Melbourne: The Conversation. Viewed 21 October 2019.

COAG (Council of Australian Governments) 2014. COAG Health Council. COAG Health Council 2014 Terms of Reference. Canberra: COAG. Viewed 5 November 2019.

COAG 2017. COAG Health Council. The Australian Health Performance Framework. Canberra: COAG. Viewed 21 October 2019.

Department of Health 2013. Health workforce: background. Canberra: Department of Health. Viewed 5 November 2019.

Department of Health 2019. The Australian health system. Canberra: Department of Health. Viewed 5 November 2019.

Duckett S & Willcox S 2015. The Australian health care system. 5th edn. South Melbourne: Oxford University Press.

Goddard M 2014. How the Pharmaceutical Benefits Scheme began. The Medical Journal of Australia. Viewed 9 October 2019.

Lewis S & Willis K 2018. Do you really need private health insurance? Here's what you need to know before deciding. Melbourne: The Conversation. Viewed 5 November 2019.

PrivateHealth 2019. Overseas visitors and overseas students. Canberra: Private Health Insurance Ombudsman. Viewed 5 November 2019.

Health workforce

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The health workforce in Australia is large and diverse, covering many occupations. These include health practitioners registered by the Australian Health Practitioner Regulation Agency (AHPRA) as well as other health professionals and health support workers. Due to data limitations regarding the other professional groups, this page presents information on the health practitioners who were registered with AHPRA.

The Australian Health Practitioner Regulation Agency

The Australian Health Practitioner Regulation Agency (AHPRA) is the statutory authority responsible for administering the National Registration and Accreditation Scheme (NRAS).

The current list of registered health professions includes Aboriginal and Torres Strait Islander health practitioners, chiropractors, Chinese medicine practitioners, medical radiation practitioners, occupational therapists, optometrists, osteopaths, pharmacists, physiotherapists, podiatrists, psychologists, oral health therapists, dental hygienists, dental therapists, dental prosthetists, dentists, nurses, midwives and medical practitioners.

Health professionals may be registered in more than 1 profession with AHPRA. This page does not include AHPRA-registered professionals who are not in the labour force. All AHPRA numbers reported refer to registered health professionals who are employed in Australia and working in their registered profession.

Overview of registered health professionals

There were more than 586,000 registered health practitioners in Australia in 2018 (the latest available data from the Australian Government Department of Health), which includes 98,400 medical practitioners; 334,000 nurses and midwives; 20,600 dental practitioners; and 133,400 allied health professionals (Table 1).

Trends

Between 2013 and 2018 the Australian registered health workforce increased by more than 82,000 professionals (Table 1).

The number of full-time equivalent (FTE) health professionals per 100,000 population (FTE rate) rose steadily for each profession group from 2013 to 2018 (Figure 1).

Nurses and midwives continue to be the largest group of registered health professionals in Australia, at about 334,000 registered in 2018 (57% of all registered health professionals).

Relative to the Australian population, allied health workers and medical practitioners showed the greatest growth in FTE rate from 2013 to 2018 (an increase of 54 and 33 FTE per 100,000 people, respectively).

Table 1: Key workforce statistics by health profession, 2013 and 2018.

Profession	Measure	2013	2018	% change
Allied health (a)	**Number of practitioners**	108,680	133,388	22.7
	FTE total	98,545	119,914	21.7
	FTE per 100,000 population	426	480	12.7
Dental practitioners (b)	**Number of practitioners**	17,847	20,589	15.4
	FTE total	16,604	19,045	14.7
	FTE per 100,000 population	72	76	5.9
Medical practitioners	**Number of practitioners**	82,408	98,395	19.4
	FTE total	88,382	103,725	17.4
	FTE per 100,000 population	382	415	8.7
Nurses and midwives	**Number of practitioners**	295,060	333,970	13.2
	FTE total	267,164	293,711	9.9
	FTE per 100,000 population	1,155	1,176	1.8
All professions	**Number of practitioners**	503,995	586,342	16.3
	FTE total	470,695	536,395	14.0
	FTE per 100,000 population	2,035	2,147	5.5

Notes:

(a) Allied health professions include Aboriginal and Torres Strait Islander health practitioners, chiropractors, Chinese medicine practitioners, medical radiation practitioners, occupational therapists, optometrists, osteopaths, pharmacists, physiotherapists, podiatrists and psychologists.

(b) Dental practitioners registered with AHPRA include oral health therapists, dental hygienists, dental therapists, dental prosthetists, and dentists.

Source: Department of Health 2020; ABS 2018.

Demographics

On average, Australia's health workforce is predominantly female, and aged 20 to 34 years. However, there have been some notable changes between 2013 and 2018. There are more young health professionals in the workforce, and the proportion of female medical and dental practitioners has risen.

Between 2013 and 2018, the FTE rate of health professionals aged 20−34 years increased 18% (699 20−34 year old FTE per 100,000 people in the population in 2018 compared with 594 FTE per 100,000 people in 2013) (Figure 1). This is in contrast to the FTE rate of health professionals aged 45−54, which decreased by 8.3%, a reduction of 43 FTE per 100,000 people over the same period.

This change was largely driven by growth in the number of younger FTE nurses and midwives and medical practitioners relative to the Australian population. From 2013 to 2018, the FTE rate for nurses and midwives and medical practitioners aged 20−34 increased by 24% (69 FTE per 100,000 people) and 16% (16 FTE per 100,000 people) respectively.

Most of Australia's health workforce is female—the ratio of FTE rates for health professionals that are women remains at around 2.5 times that of men. In terms of the overall number of health professionals, in 2018 this ratio increased to 3 times, with a total of 440,000 women and 146,000 men registered and employed in Australia's health workforce.

Nurses and midwives and the allied health professions have remained female-dominated occupations since 2013. In 2018, the ratio of FTE rates for females in these occupations was over 7 times that of males for nurses and midwives, and nearly 2 times for allied health practitioners.

The proportion of both medical and dental practitioners that are women is rising. From 2013 to 2018, the FTE rates for female medical and dental practitioners increased 20% (27 FTE per 100,000 people) and 18% (5 FTE per 100,000 people) respectively. Over the same period, the FTE rate for male medical practitioners increased 2.6% (6.5 FTE per 100,000 people) and for dental practitioners decreased 2.5% (1.1 per 100,000).

Between 2013 and 2018, of all jurisdictions the Northern Territory had the highest number of registered health professionals relative to its population (2,790 FTE per 100,000 people in 2018). However, the Northern Territory also had the lowest dental practitioner FTE rate over this period (59 FTE per 100,000 people compared with 85 per 100,000 in South Australia). Between 2013 and 2018, New South Wales had the lowest FTE rate for all professions (2,014 FTE per 100,000 people in 2018).

Figure 1: Total FTE and FTE rates, by profession, state and territory, age, and sex, 2013 to 2018
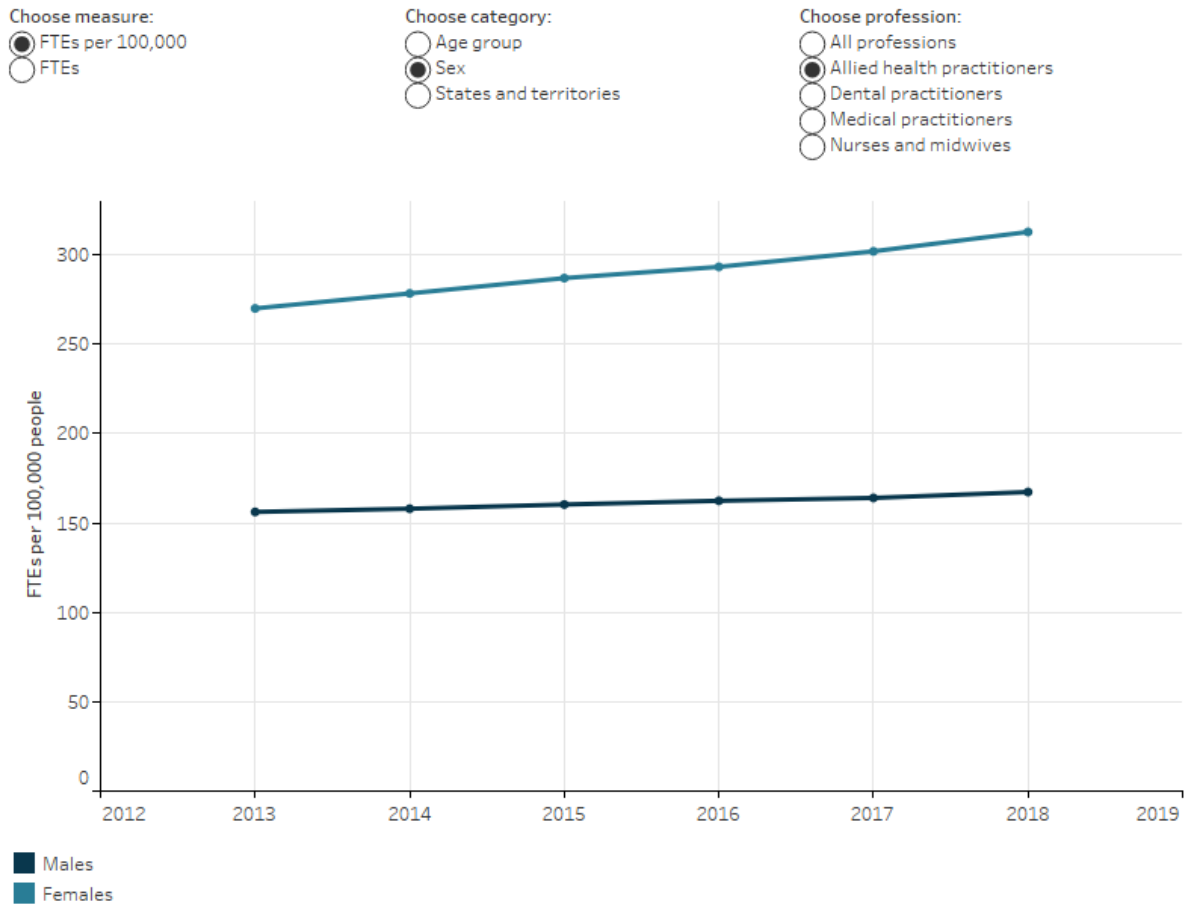
Choose measure:
- ● FTEs per 100,000
- ○ FTEs

Choose category:
- ○ Age group
- ● Sex
- ○ States and territories

Choose profession:
- ○ All professions
- ● Allied health practitioners
- ○ Dental practitioners
- ○ Medical practitioners
- ○ Nurses and midwives

■ Males
■ Females

Notes
1. Allied health professions include Aboriginal and Torres Strait Islander health practitioners, chiropractors, Chinese medicine practitioners, medical radiation practitioners, occupational therapists, optometrists, osteopaths, pharmacists, physiotherapists, podiatrists and psychologists.
2. Dental practitioners registered with AHPRA include oral health therapists, dental hygienists, dental therapists, dental prosthetists, and dentists.
Sources: ABS 2018; Department of Health 2020.
http://www.aihw.gov.au

Rural and remote areas

The accessibility of Australia's health workforce is highly dependent on the distribution of its members in areas where they are most needed. Particularly for Australians living in regional and remote areas, difficulties in availability are common for patients seeking clinical services and specialised treatments from clinicians who may not work in areas close to them. The clinical FTE rate, in contrast with the FTE rate discussed above, indicates the full-time equivalent number of health professionals working clinical hours relative to the population.

For all registered professions, the number of employed FTE clinicians working in their registered professions decreased with remoteness, a trend seen each year since 2013

(Figure 2). There were also more registered clinical FTE health professionals in *Major cities* than in all regional and remote areas of Australia combined. In 2018, there were more than 347,000 FTE clinicians working in *Major cities* compared with 115,000 in all other remoteness areas.

Relative to the populations in these areas, *Major cities* had a greater number of working FTE clinicians (1,927 clinical FTE per 100,000 people in 2018) than each of the other remoteness areas. For the other remoteness areas:

- *Inner regional* areas had 1,679 FTE per 100,000 people
- *Outer regional* areas had 1,550 FTE per 100,000 people
- *Remote* areas had 1,733 FTE per 100,000 people
- *Very remote* areas had 1,668 FTE per 100,000 people.

Choose measure:
- ● Clinical FTE per 100,000 people
- ○ Clinical FTE

Choose profession:
- ● All professions
- ○ Allied health practitioners
- ○ Dental practitioners
- ○ Medical practitioners
- ○ Nurses and midwives

Choose year:
- ● 2013
- ○ 2014
- ○ 2015
- ○ 2016
- ○ 2017
- ○ 2018

Notes
1. Allied health professions include Aboriginal and Torres Strait Islander health practitioners, chiropractors, Chinese medicine practitioners, medical radiation practitioners, occupational therapists, optometrists, osteopaths, pharmacists, physiotherapists, podiatrists and psychologists.
2. Dental practitioners registered with AHPRA include oral health therapists, dental hygienists, dental therapists, dental prosthetists, and dentists.
3. Numbers represent not all in the labour force, but those employed and working in their registered profession.
Sources: ABS 2019; Department of Health 2020.
http://www.aihw.gov.au

Major cities have greater access to clinicians

In 2018, the FTE rate for health professionals working clinical hours was highest in *Major cities* (1,927 clinical FTE per 100,000 people) compared with all other remoteness areas.

This trend is also seen when looking at each of the health profession groups, except for nurses and midwives. Both *Remote* and *Very remote* areas have a greater number of registered and working clinical FTE nurses and midwives relative to the population in these areas. In 2018, there were 1,191 FTE clinical nurses and midwives per 100,000 people in *Very remote* areas compared with 1,030 in *Major cities*.

According to reports published by Medical Deans Australia and New Zealand, using the Medical Schools Outcomes Database, graduating medical students have shown consistent preference for practising in capital cities. In 2018, 64% of surveyed medical

students indicated a preference to work in capital cities (Table 2). In contrast, only 18% of students indicated a preference to work in regional cities, small towns or small communities.

See Rural and remote health.

Table 2: First preference region of future practice, by region, 2014–2018.

First preference region of future practice		Capital city	Major urban centre	Regional city or large town	Smaller town	Small community	Total
2014	Number	1,693	352	266	78	33	2,422
	Per cent	69.9	14.5	11.0	3.2	1.4	100
2015	Number	1,240	367	231	84	36	1,958
	Per cent	63.3	18.7	11.8	4.3	1.8	100
2016	Number	1,407	361	266	97	32	2,163
	Per cent	65.0	16.7	12.3	4.5	1.5	100
2017	Number	1,342	365	262	87	35	2,091
	Per cent	64.2	17.5	12.5	4.2	1.7	100
2018	Number	1,395	380	280	89	29	2,173
	Per cent	64.2	17.5	12.9	4.1	1.3	100

Source: MDANZ 2019.

Occupations working the most hours

The FTE number is calculated based on the total hours worked in a 'standard working week', which may change depending on occupation. For example, a standard working week for medical practitioners is considered to be 40 hours. The ratio of FTEs relative to the number of health professionals therefore provides an overall indication of whether occupational groups worked longer or less than their standard hours.

Between 2013 and 2018, medical practitioners were the only occupational group whose total FTEs was greater than the number of practitioners, indicating that medical practitioners overall worked more than their full-time equivalent of 40 hours a week (Table 1). This is in contrast to allied health practitioners, nurses and midwives, and dental practitioners, where total number of practitioners exceeded total FTEs over the

same period. This may indicate increasingly part-time arrangements for these practitioners.

Overall among medical practitioners, specialists, specialists-in-training and hospital non-specialists worked longer hours (ratio was greater than 1) than their full-time equivalent (Figure 3).

Figure 3: Ratio of FTE total to number of practitioners among medical practitioners, by job area, 2013 to 2018
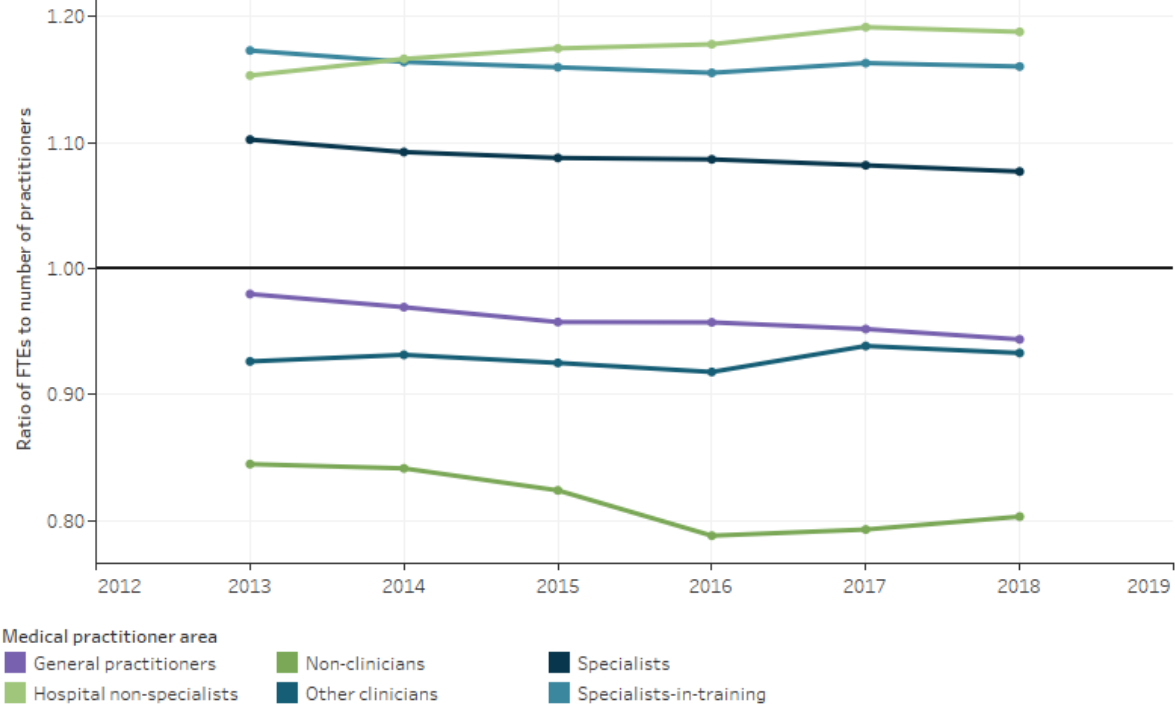
Source: AIHW analysis of Department of Health 2020 data.
http://www.aihw.gov.au

Non-registered health professions

Many people employed in the health sector work in occupations that are not registered by AHPRA and there are less available data for these groups. These members of the health workforce still play an important role in delivering health services to Australians and include, for example, dieticians, clerical workers, health information managers, welfare professionals, service workers, cleaners and gardeners.

According to the Australian Bureau of Statistics (ABS) 2016 Census of Population and Housing, more than 820,000 people reported working in the health services industry (ABS 2017). Outside of the AHPRA-registered professions, this included around 13,200 ambulance officers and paramedics; 21,000 medical technicians; 21,000 dental assistants; and 26,100 nursing support and personal care workers.

Where do I go for more information?

For more information on the health workforce, see:

- Department of Health Health workforce data tool
- Medical Deans Australia and New Zealand (MDANZ) Medical schools outcomes database reports

Visit Workforce for more on this topic.

References

AHPRA (Australian Health Practitioner Regulation Agency) 2017. Who we are. Viewed 22 June 2020.

ABS (Australian Bureau of Statistics) 2017. ABS Census TableBuilder. Canberra: ABS. Viewed 30 October 2019.

ABS 2018. Australian demographic statistics, Jun 2018. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2019. Regional population growth, Australia, 2017–18. ABS cat. no. 3218.0. Canberra: ABS.

Department of Health 2019. New arrangements for the Bonded Medical Program. Canberra: Department of Health. Viewed 15 October 2019.

Department of Health 2020. Health workforce data tool. Canberra: Department of Health.

MDANZ (Medical Deans Australia and New Zealand) 2019. National data report 2019. Sydney: MDANZ. Viewed 15 October 2019.

Hospital care

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Hospitals are very diverse in location, size and the services provided. In 2017–18, there were 693 public hospitals in Australia. The most recent data from 2016–17 show that there were 657 private hospitals (including day hospital facilities) (ABS 2018).

During 2017–18, a total of $74.0 billion was spent on Australia's public and private hospitals with $30.8 billion (42%) of this funded by state and territory governments and $26.5 billion (36%) by the Australian Government. The remaining $16.7 billion (23%) came from non-government sources. Spending per person increased by an average of 2.1% per year between 2013–14 and 2017–18 after adjusting for inflation (2.2% for public hospital care and 2.0% for private). See Health expenditure.

Both public and private hospital sectors provide services for admitted and non-admitted patients (outpatient clinics and emergency department care).

Admitted patient services

Admitted patient services, or hospitalisations, are provided when a patient is formally admitted to a hospital. Hospitalisations can either be on the same day or involve a stay in hospital of 1 or more nights. A hospitalisation may be for medical, surgical, or other acute care, childbirth, mental health care, subacute care (for example rehabilitation or palliative care) or non-acute care (for example, maintenance care for a person suffering limitations due to a health condition). Some admitted patient services can also be provided via 'hospital-in-the-home' programs, where patients receive admitted care in a combination of in and outside the hospital settings.

In 2017–18, there were 62,000 beds in public hospitals in Australia. The number of hospital beds increased by 1.3% per year between 2013–14 and 2017–18. This trend coincided with a decrease in the average length of stay over time (an average of 2.2% decline per year), meaning fewer beds are used to support more episodes of care. The number of public hospital beds per 1,000 population was relatively stable between 2013–14 and 2017–18, ranging between 2.5 and 2.6 beds per 1,000 population.

The most recent data, from 2016–17, show that there were 34,000 hospital beds in private hospitals (including day hospital facilities)—a rate of 1.4 beds per 1,000 population, up from 1.3 beds per 1,000 population in 2012–13 (ABS 2018). The average decrease per year in the average length of stay over this period was 1.2%.

In 2018–19, there were 11.5 million hospitalisations—6.9 million in public hospitals and 4.6 million in private hospitals. Between 2014–15 and 2018–19, the total number of

hospitalisations increased by an average of 3.3%—faster than the average population growth of 1.6% over the same period. Hospitalisations increased by an average of 3.7% each year in public hospitals and 2.6% in private hospitals.

In 2018–19, 33% of all hospitalisations were for patients who were admitted and discharged on the same day in a public hospital and 27% were for 1 or more nights in a public hospital. Same-day hospitalisations in private hospitals accounted for 29% of all hospitalisations, and 11% of hospitalisations were overnight or longer in a private hospital.

The average length of stay in hospital is decreasing; between 2014–15 and 2018–19, the average length of stay in hospital decreased from 2.8 days to 2.7 days. The average length of stay in hospital was longer in public hospitals, at 3.0 days, and was 2.2 days in private hospitals in 2018–19. This difference in average length of stay is influenced by the differing patient characteristics, illnesses and procedures in public and private hospitals as well as differing administrative and clinical practices.

Why do people go to hospital?

The reason that a patient was admitted to hospital can be described in various ways, including the mode and urgency of admission, the type of care required or the principal diagnosis. The principal diagnosis is the diagnosis established after study (for example, at the completion of the hospitalisation) to be chiefly responsible for the episode of admitted patient care. Diagnoses are categorised using the International Statistical Classification of Diseases and Related Health problems, 10th Revision, Australian Modification (ICD-10-AM).

Overall, the most common reason a patient is admitted to hospital is for *Other factors influencing health status*. *Other factors influencing health status* includes examinations, investigations, observation, evaluation, screening, immunisation and other health management. The most common reason for admission to hospital varies with age and sex. The visualisation below presents the 5 most common reasons for a stay in hospital for males and females by age group, according to the patients' principal diagnosis (Figure 1).

In 2018–19:

- patients aged under 5 often stayed in hospital for *Respiratory system* issues and *Perinatal period conditions* following birth
- patients aged 5–14 primarily stayed in hospital for *Injury and poisoning*, and *Digestive system diseases*. Males aged 15–24 also stayed in hospital for the same reasons, whereas females of this age group mostly stayed for pregnancy and childbirth-related reasons, as well as *Digestive system diseases*
- similar to the age group before them, females aged 25–44 predominantly stayed in hospital for pregnancy and childbirth, whereas males of that age stayed in hospital for *Other factors influencing health status*

- patients aged 45–64 stayed in hospital for *Other factors influencing health status* and *Digestive system diseases*
- male patients aged 65 and over primarily came to hospital for *Other factors influencing health status* and *Neoplasms* (cancer). Female patients aged 65 and over primarily came to hospital for *Other factors influencing health status* and *Musculoskeletal system diseases*.

Figure 1: Top 5 most common reasons for a stay in hospital (ICD-10-AM), by sex and age group, 2018–19

Source: National Hospital Morbidity Database. http://www.aihw.gov.au/

Elective surgery

Surgery that is planned and can be booked in advance is classified as elective surgery. Note that the data presented here does not include the time period when some elective surgeries were temporarily postponed due to COVID-19.

In 2018–19:

- around 2.3 million elective admissions involved surgery, with 66% (more than 1.5 million) of these occurring in private hospitals
- people living in *Very remote* areas were least likely to have an elective admission involving surgery
- people living in areas classified as being in the lowest (most disadvantaged) socioeconomic areas had lower rates of elective admissions involving surgery than people living in areas classified as being in the highest (least disadvantaged) areas.

Elective surgery waiting times in public hospitals

Information on elective surgery waiting times is available only for patients who were admitted from public hospital waiting lists. These patients are assessed clinically by a surgeon, who determines the urgency of their need for surgery, before being placed on a waiting list. Waiting time for elective surgery is calculated from the time a patient is placed on the waiting list until they are admitted for surgery.

In 2018−19, 893,000 patients were added to public hospital elective surgery waiting lists. Between 2014–15 and 2018–19 the number of patients added increased by an average of 2.5% per year. About 758,000 patients were admitted from public hospital elective surgery waiting lists in the same year. Between 2014–15 and 2018–19, the number of admissions from public hospital elective surgery waiting lists increased by an average of 2.1% each year.

The median waiting time for public hospital elective surgery in 2018–19 was 41 days. That is, 50% of patients were admitted for their awaited procedure within 41 days. This is an increase from a median waiting time of 35 days in 2014–15 (Figure 2).

Figure 2: Elective surgery waiting times, by selected surgical procedure and state/territory, 2014–15 to 2018–19

Measures	Surgical specialty	Highlight State
Days waited at 90th percentile	Cardio-thoracic surgery	No items highlighted

Legend: New South Wales, Western Australia, Australian Capital Territory, Victoria, South Australia, Australia, Queensland, Tasmania
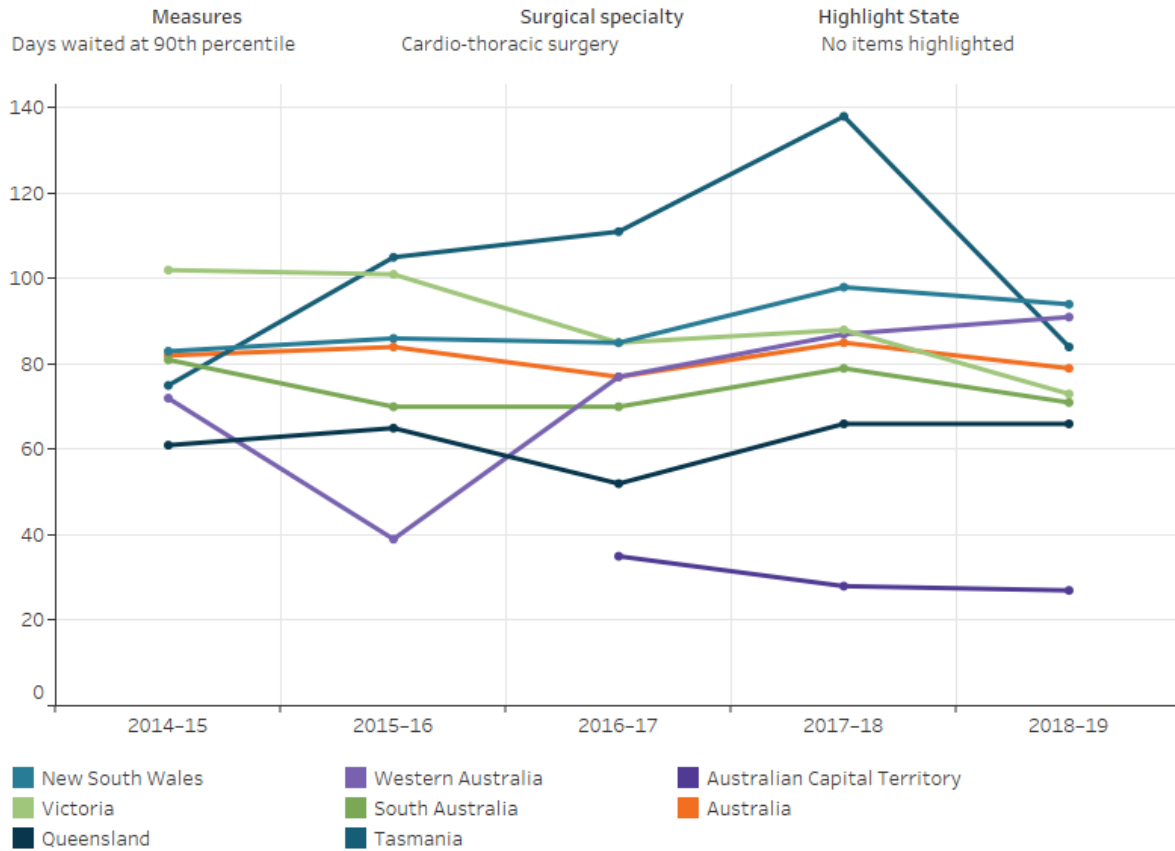
Notes

1. Waiting time statistics not published where there were fewer than 100 admissions.
2. Interpretation of changes over time should take into account changes in coverage.
3. For 2015–16 data for the Australian Capital Territory were not available.
4. In 2016–17 Paediatric surgery was not reported for New South Wales, Victoria, Queensland and the Northern Territory. In 2017–18 Paediatric surgery was not reported for Victoria, Queensland and the Northern Territory. These differences in reporting should be taken into consideration when comparing these data over time.

Source: National Elective Surgery Waiting Times Data Collection.

http://www.aihw.gov.au/

Non-admitted patient services

Non-admitted patient care includes care provided in emergency departments and outpatient clinics. Public hospitals provide the majority of non-admitted patient services.

The activities not included in this section are the dispensing of medicines to patients not admitted to the hospital, district nursing services, some community health services provided by hospitals, and patients admitted to hospital from emergency departments.

Outpatient clinics

In outpatient clinics, patients consult specialist medical practitioners, have diagnostic services or other procedures, or are provided with allied health or specialist nursing care—without being admitted to hospital.

In 2017–18, 39 million outpatient clinic service events were reported for 601 public hospitals and 29 other services that provided outpatient care for public patients on behalf of a public hospital.

Emergency departments

Emergency departments are a critical part of Australia's health care system, providing care for patients who require urgent medical, surgical or other attention. Most larger public hospitals have purpose-built emergency departments. Some smaller public hospitals can provide emergency services through informal arrangements. Accident and emergency services can also be provided by private hospitals, but national data are available only for public hospital emergency departments.

Emergency department presentations

In 2018–19, there were 8.4 million presentations to public hospital emergency departments. This was an average of more than 23,000 each day across Australia. Between 2014–15 and 2018–19, the number of emergency department presentations increased by an average of 3.2% each year.

In 2018–19:

- patients aged under 5 (11%) and patients aged 65 and over (22%) were over-represented in emergency department presentations, compared with the overall population
- among patients aged 0–14, more boys than girls presented to emergency departments (56% and 44%, respectively)
- 26% of patients arrived by ambulance, air ambulance or helicopter rescue service.

Emergency department waiting times

Emergency department waiting time is the time elapsed from presentation in the emergency department to commencement of clinical care. In 2018–19, nationally, 50% of patients had been seen within 19 minutes; 90% were seen within 100 minutes.

A patient is said to be 'seen on time' if the time between presentation at the emergency department and the commencement of their clinical care is within the time specified by the triage category they are assigned.

Figure 3: Measurement of time patients spend in emergency departments
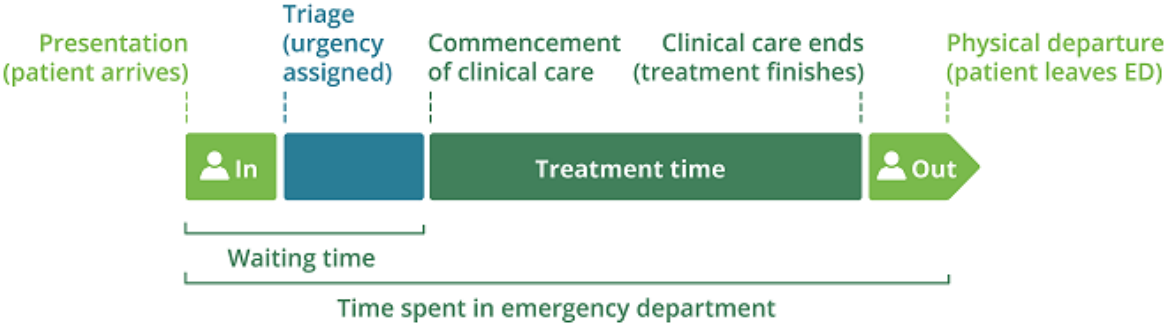
Note: The length of the segments is illustrative only

In 2018–19, about 71% of emergency department presentations were seen on time, including:

- almost 100% of *Resuscitation* patients (within 2 minutes)
- 75% of *Emergency* patients (within 10 minutes)
- 63% of *Urgent* patients (within 30 minutes)
- 73% of *Semi-urgent* patients (within 60 minutes)
- 91% for *Non-urgent* patients *(*within 120 minutes).

The proportion of emergency department presentations that were seen on time decreased from 74% in 2014–15 to 71% in 2018–19 (Figure 4).

Figure 4: Emergency department waiting times, by triage category and state/territory, 2014–15 to 2018–19

Measures
ED stay completed within 4 hours

Triage category
1. Resuscitation

Highlight State
No items highlighted

State

- New South Wales
- Victoria
- Queensland
- Western Australia
- South Australia
- Tasmania
- Australian Capital Territory
- Northern Territory
- Australia
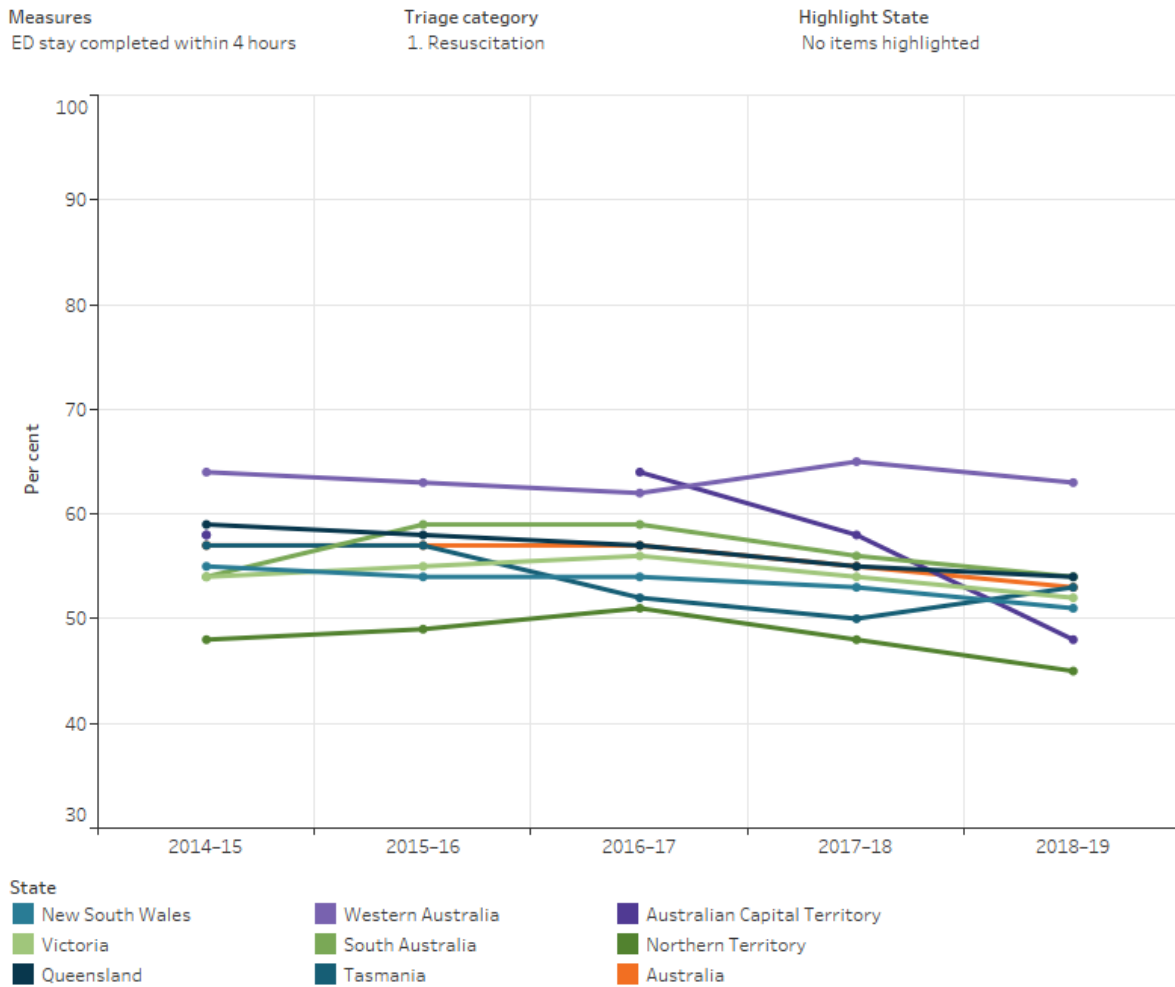
Note: For 2015–16 data for the Australian Capital Territory were not available.
Source: National Non-Admitted Patient Emergency Department Database.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on hospital care, see:

- MyHospitals
- Hospitals at a glance 2017–18
- Radiotherapy in Australia 2017–18
- Health expenditure Australia 2017–18
- Principal Diagnosis data cubes

References

ABS (Australian Bureau of Statistics) 2018. Private hospitals, Australia, 2016–17. ABS cat. no. 4390.0. Canberra: ABS.

Immunisation and vaccination

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Immunisation is a safe and effective way to protect against harmful communicable diseases and, at the population level, prevent the spread of these diseases among the community. Several vaccine-preventable diseases, such as measles, rubella and diphtheria, are now rare in Australia as a result of Australia's high immunisation rates. See Infectious and communicable diseases.

The Australian Government provides free vaccines to eligible people, including young children, older Australians, Aboriginal and Torres Strait Islander people, and others who are at greater risk of serious harm from vaccine-preventable diseases, such as pregnant women. Additional vaccines may also be funded through state and territory programs, through the workplace or bought privately by prescription.

It is important to maintain high immunisation rates to ensure that these diseases cannot spread through the community.

What is the burden of vaccine-preventable diseases?

The Burden of Vaccine Preventable Diseases in Australia study estimated the immediate and future burden of newly diagnosed cases of disease (including premature death) and found that the rate of burden had decreased by nearly a third between 2005 and 2015. The decrease was driven by falls for diseases for which vaccines have been introduced in the past 20 years, such as human papillomavirus (HPV), pneumococcal disease and rotavirus (Table 1). The rate of burden decreased considerably among infants, children, and adolescents and young adults—age groups which are the focus of national and state and territory vaccination programs (AIHW 2019).

Table 1: Number of cases and burden (DALY per 100,000 population) due to selected vaccine-preventable diseases, Australia, 2005 and 2015

Disease	Year widespread vaccination introduced	Number of cases			DALY per 100,000 population		
		2005	2015	% change	2005	2015	% change
Rotavirus	**2007**	241,000	47,700	−80	1.9	0.3	−85

Chickenpox	**2005**	95,200	55,300	–42	1.7	0.4	–75
Human papillomavirus	**2007 for girls, 2013 for boys**	545,600	291,000	–47	48.2	15.8	–67
Pneumococcal disease	**2001 for at-risk infants, 2005 for all infants and those aged 65 and over**	1,824	1,576	–14	20.4	15.1	–26
Hepatitis A	**2005**	1,200	720	–40	0.4	<0.1	–75
Hepatitis B	**Early 1980s for at-risk groups, 2000 for all infants**	580	340	–41	2.1	1.2	–44
Meningococcal disease	**2003**	369	201	–46	6.5	2.7	–58

DALY   disability-adjusted life years (see Glossary)

Note: Rates age-standardised to the 2001 Australian population.

Childhood immunisation rates

All Australian children are expected to have received specific immunisations by a certain age according to the National Immunisation Program Schedule. Fully immunised status is measured at ages 1, 2 and 5 and means that a child has received all the scheduled vaccinations appropriate for their age.

In 2019, the immunisation rate for all children aged 1 was 94.3%; it was 91.6% for 2 year olds and 94.8% for 5 year olds (Figure 1). For Indigenous children in 2019, the national immunisation rates for children aged 1 and 2 were lower than the rates for all children. In contrast, the immunisation rate for 5 year old Indigenous children was higher than the rate for all children (96.9% compared with 94.8%).

Figure 1: Immunisation rates for all children aged 1, 2 and 5, 1999 to 2019
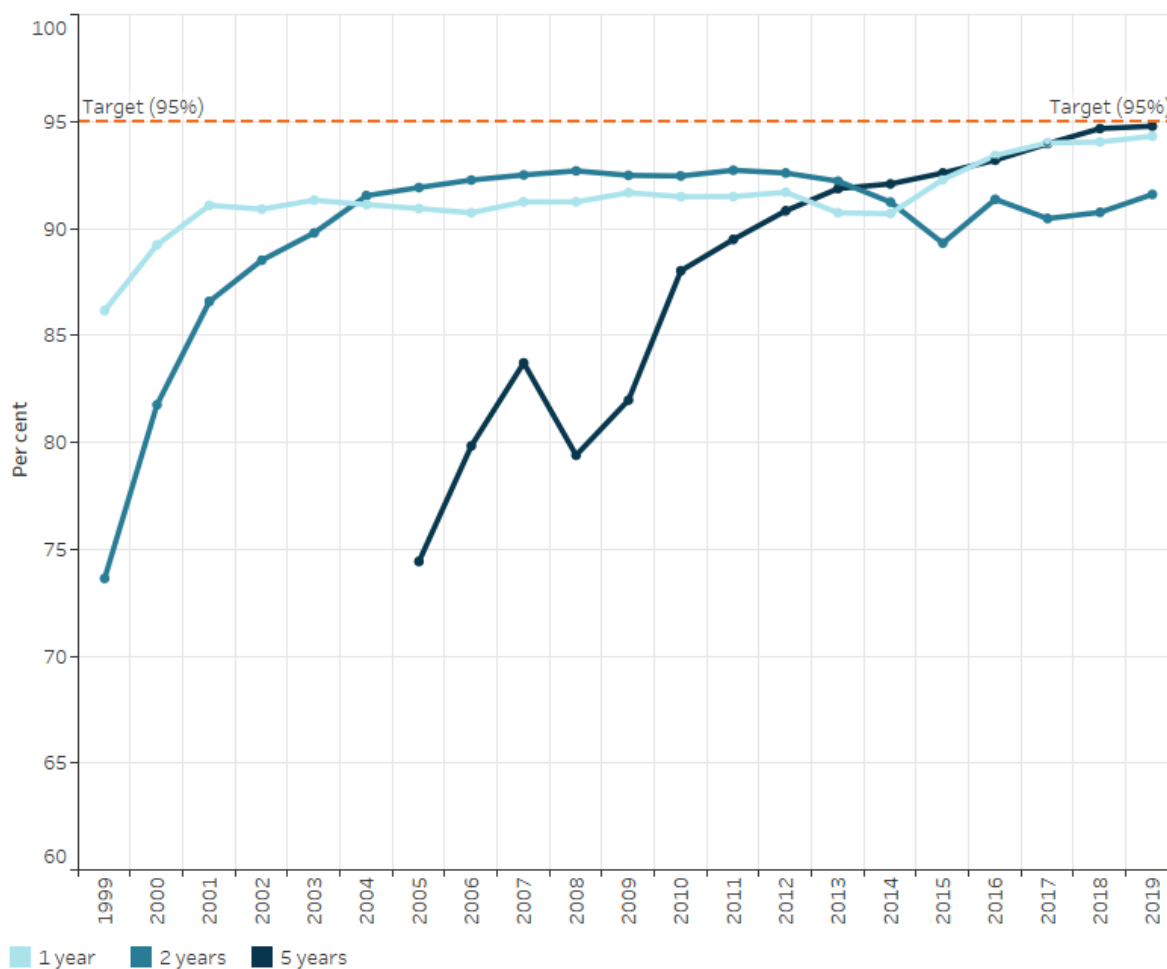
Source: Department of Health 2020.
http://www.aihw.gov.au

Figure 1: Immunisation rates for all children and Indigenous children aged 1, 2 and 5, 1999 to 2019

The immunisation rate for:

- 1 year olds remained relatively stable between 2001 and 2012. The slight fall in the rate for 2013 and 2014 may have been due to a change in the definition of 'fully immunised'

- 2 year olds increased markedly from 1999 to 2004 and remained relatively stable above 90% until 2013. Changes in the definition of 'fully immunised', made in 2014, may have contributed to the drop in 2015

Australia's health snapshots 2020

- 5 year olds increased from 74.4% in 2005 to 94.8% in 2019. Children who have had catch-up immunisations are included as 'fully immunised' even if they were not fully immunised when they were aged 1 or 2.

See [Health of children](#).

Adolescent immunisation rates

A national HPV vaccination program (using the quadrivalent HPV vaccine, which protects against 4 types of HPV) was introduced for school-aged girls in 2007 and extended to boys in 2013. A new vaccine was introduced in 2018, protecting against 9 types of HPV. Of young people turning 15 in 2017, around 80% of girls and nearly 76% of boys were fully immunised against HPV (NHVPR 2019).

Adolescent vaccination is administered by state and territory health services through school vaccination programs which also include vaccinations for diphtheria, tetanus and whooping cough and meningococcal disease.

See [Health of young people](#).

Adult vaccination

In 2009, the Adult Vaccination Survey estimated that almost 3 in 4 (75%) Australians aged 65 and over were vaccinated against influenza. The same survey showed that pneumococcal vaccine coverage among the target population was 54% (AIHW 2011).

To date there has been no regular and nationally consistent source of data with which to estimate vaccination coverage in adolescents and adults. Population surveys have previously been used to estimate vaccination coverage in the adult population or in selected population groups.

The Australian Immunisation Register is a national register that details all funded vaccinations and most privately purchased vaccines given to individuals of all ages who live in Australia. It was set up in 1996 as the Australian Childhood Immunisation Register and renamed following its expansion in 2016. Adult vaccination data captured in the register will be reported when reliable coverage estimates can be obtained.

Where do I go for more information?

For more information on immunisation and vaccination, see:

- [The burden of vaccine preventable diseases in Australia](#)
- [Vaccine-preventable diseases](#)
- Department of Health [National Immunisation Program](#)
- Department of Human Services [Australian Immunisation Register](#)
- [National Centre for Immunisation Research and Surveillance](#) website

Visit [Immunisation](#) for more on this topic.

References

AIHW (Australian Institute of Health and Welfare) 2011. [2009 Adult Vaccination Survey: summary results](#). Cat. no. PHE 135. Canberra: AIHW. Viewed 15 November 2019.

AIHW 2019. [The burden of vaccine preventable diseases in Australia](#). Cat. no. PHE 263. Canberra: AIHW. Viewed 15 November 2019.

Department of Health 2020. [Childhood immunisation coverage](#). Canberra: Department of Health. Viewed 19 February 2020.

NHVPR (National HPV Vaccine Program Register) 2019. [Coverage Data](#). Melbourne: Victorian Cytology Service. Viewed 15 November 2019.

Medicines in the health system

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/medicines-in-the-health-system

Medicines can contribute to the quality of life of Australians by curing or relieving the symptoms of illness. They can also prevent complications in existing health conditions or delay the onset of disease.

In 2017–18, Australians spent an estimated $22.3 billion on medicines (including both prescribed and over-the-counter)—which includes spending by governments, non-government sources and individuals (AIHW 2019).

Medicines can be obtained in a number of ways including via prescription provided by a general practitioner (GP), specialist or other health practitioner; to admitted patients in hospital; and purchased over the counter from community pharmacies or other outlets (such as supermarkets). Presently a complete data source for all medicines is not available.

The focus of the medicines described in this section is those provided under the Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceutical Benefits Scheme (RPBS). Typically, these PBS and RPBS medicines are dispensed through community pharmacies and private hospitals, although some are available through eligible public hospitals to day patients and patients on discharge, or through other arrangements such as the Remote Area Aboriginal Health Services.

In 2017–18, 302.6 million prescriptions were dispensed under the PBS and RPBS—an increase of 1.5% on 2016–17.

What is the PBS and the RPBS?

The PBS and the RPBS are Australian Government programs that subsidise the cost of many medicines in Australia. The PBS is available for current Medicare card holders and the RPBS for Department of Veterans' Affairs Health Card holders.

The PBS began in 1948 and has expanded over time. Today, around 5,300 brands of medicines, used to treat a wide range of health conditions, are listed on the Schedule of Pharmaceutical Benefits. The RPBS subsidises pharmaceuticals available under the PBS and additional medicines and items (for example, wound dressings) for eligible veterans, war widows and widowers, and their dependants.

Spending on prescription medicines

In 2017–18, the Australian Government recorded $11.9 billion in spending on all PBS and RPBS medicines—$485 per person. This was a decrease of 2.9% in spending compared with 2016–17, largely related to a decrease in demand for relatively high cost hepatitis C medicines. Demand for these medicines peaked in 2016 following PBS listing of new hepatitis C medicines, and subsequently declined as these medicines resulted in a sustained virological response for many people (see section below).

This trend increased the average price of PBS medicines and, therefore, a slightly different picture emerges after adjusting for inflation: on this basis, Australian Government spending increased 1.8% between 2016–17 and 2017–18 (in real terms)—slightly less than the average yearly growth rate in the five years to 2017–18 of 2.4%.

The Australian Government uses a range of mechanisms to manage the sustainability of the PBS, including price disclosure, statutory price reductions, and agreements such as Special Pricing Agreements and Risk Sharing Agreements (Department of Health 2017b, 2018b, 2020a, 2020b).

For all prescriptions dispensed in 2017–18, 70% were above co-payment—indicating that the patient paid the relevant co-payment and the remaining cost was subsidised by the Australian Government (see Figure 1). The remaining 30% of medications were under the co-payment threshold (and so the patient paid the full cost of the medicine and no government subsidy was applied).

In total, consumers paid $3.0 billion towards PBS and RPBS prescriptions (for both above and under co-payment prescriptions), which was 20% of the total expenditure on PBS and RPBS medicines in 2017–18. The Australian Government contributed the remaining 80% of total expenditure.

What is the 'co-payment'?

Under the PBS and the RPBS, the Australian Government sets a maximum 'co-payment' amount that people pay towards the cost of their medicines. The Australian Government pays pharmacies the difference between a consumer's co-payment and the PBS price of a medicine, as listed on the Schedule of Pharmaceutical Benefits. Some prescriptions are priced below the co-payment amount for a patient, so the consumer pays the total cost and the government does not contribute.

Prescriptions priced above the maximum co-payment for a patient are referred to as 'above co-payment' prescriptions, and attract a subsidy from the Australian Government. Those priced below are referred to as 'under co-payment' prescriptions, and don't receive a subsidy.

The maximum co-payment a patient pays depends on their level of entitlement; for example, whether a patient has concessional status and/or whether the safety net threshold (which

determines an upper limit for patient co-payments) has been met. Current and historical co-payments can be found on the PBS website.

Figure 1: PBS and RPBS prescriptions and benefits

Display
⦿ Prescriptions
◯ Government expenditure (constant prices)*
◯ Government expenditure (current prices)†

Measure
◯ Number of prescriptions (millions)
⦿ Age-standardised rate (per 100 people)

■ Above co-payment prescriptions   ■ Under co-payment prescriptions   ■ Total prescriptions
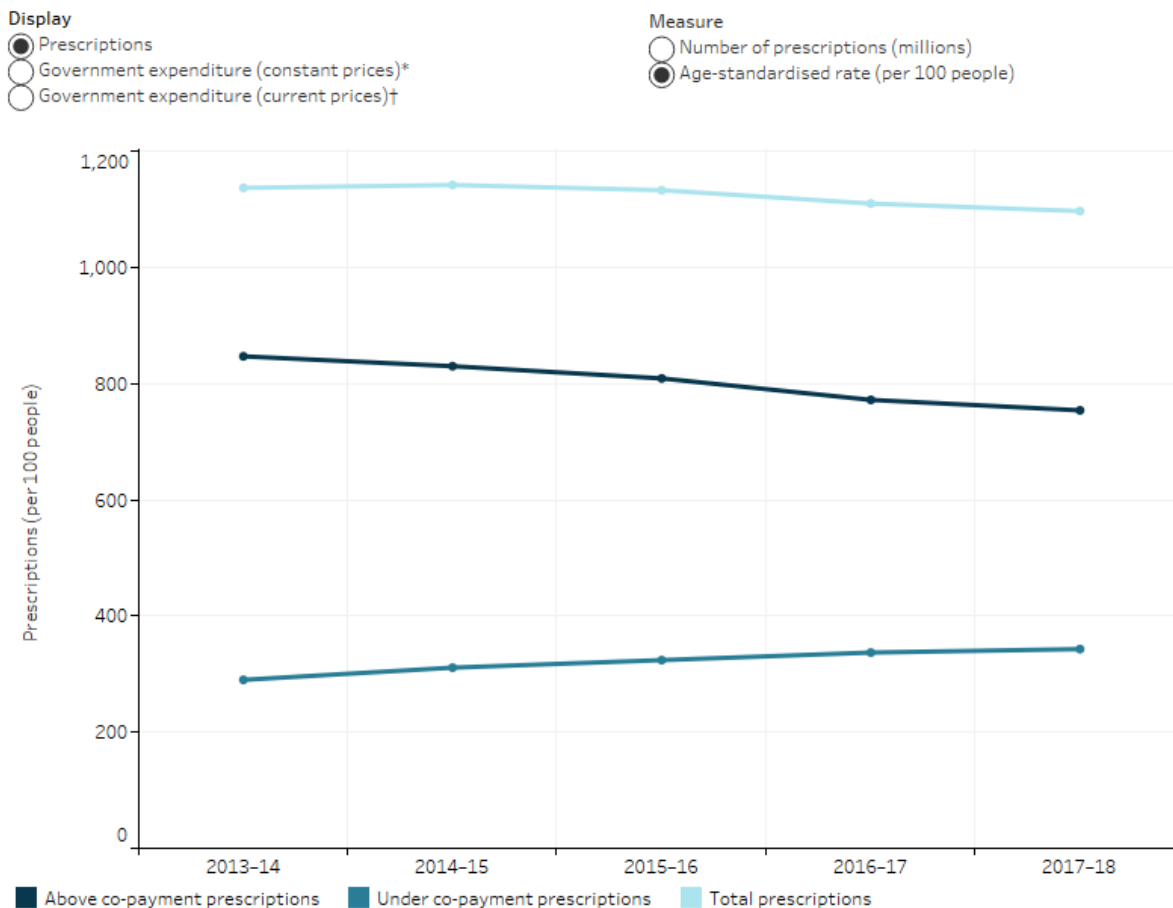
Notes
Age-standardised rates have been directly age standardised to the 2001 Australian population, using 5-year age groups.
Government expenditure figures expressed in *constant prices or †current prices (please refer to glossary) and exclude scripts supplied through Remote Area Aboriginal Health Services or the Opiate Dependence Treatment Program.
Sources: AIHW analysis of Department of Health PBS and RPBS data, ABS 2011 and ABS 2018.
http://www.aihw.gov.au/

Types of prescribed medicines dispensed

In 2017–18, medicines used to treat cardiovascular conditions were the most commonly dispensed. These medicines accounted for 94.5 million PBS and RPBS prescriptions (31% of all PBS and RPBS prescriptions in 2017–18), and 8.4% of government expenditure. Cardiovascular medicines include cholesterol-lowering medicines (such as statins)—raised cholesterol is a major risk factor for developing cardiovascular disease. See Biomedical risk factors for more information.

How are medicines grouped?

Medicines are organised into Anatomical Therapeutic Chemical (ATC) classification groups according to the body system or organ on which they act (see the World Health Organization Collaborating Centre for Drug Statistics Methodology for further information on the ATC classification system.

Also dispensed in high volumes were nervous system medications (22% of all PBS and RPBS prescriptions), which include analgesics (painkillers), antipsychotics and antidepressants. While antineoplastic and immunomodulating agents accounted for only 1.5% of all prescriptions, they had the highest government expenditure (32%), and the highest increase in expenditure among ATC groups between 2016–17 and 2017–18. These medicines are commonly used to treat cancer and other conditions such as multiple sclerosis and Crohn's disease.

Hepatitis C medicines

New direct-acting antiviral medicines used to treat people with chronic hepatitis C were listed on the PBS and RPBS in March 2016. These medicines experienced an initially high uptake, but their use has since begun to decline as use of the drugs can result in a sustained virological response for a high proportion of people (Department of Health 2017a). In the last 3 months of the 2015–16 financial year (the first full quarter after these medicines were available under PBS/RPBS arrangements), there were 56,200 prescriptions for these medicines. In current prices, this amounted to expenditure of $947.2 million by the Australian Government.

In the last quarter of 2016–17, there were 27,300 prescriptions for the direct-acting antiviral medicines, with a total Australian Government expenditure of $430.5 million. By the last quarter of 2017–18, the number of prescriptions for hepatitis C medicines supplied to patients had fallen by 52% (compared to the last quarter of 2016–17) to 13,100, and government expenditure had fallen by 37% to $273.0 million.

The availability of these medicines accounts for the large changes in government expenditure for the anti-infectives for systemic use ATC group between 2015–16 and 2017–18 (Figure 2).

Figure 2: Use of primary allied health services in the private setting, 2008–09 to 2018–19

Choose year:
2018–19
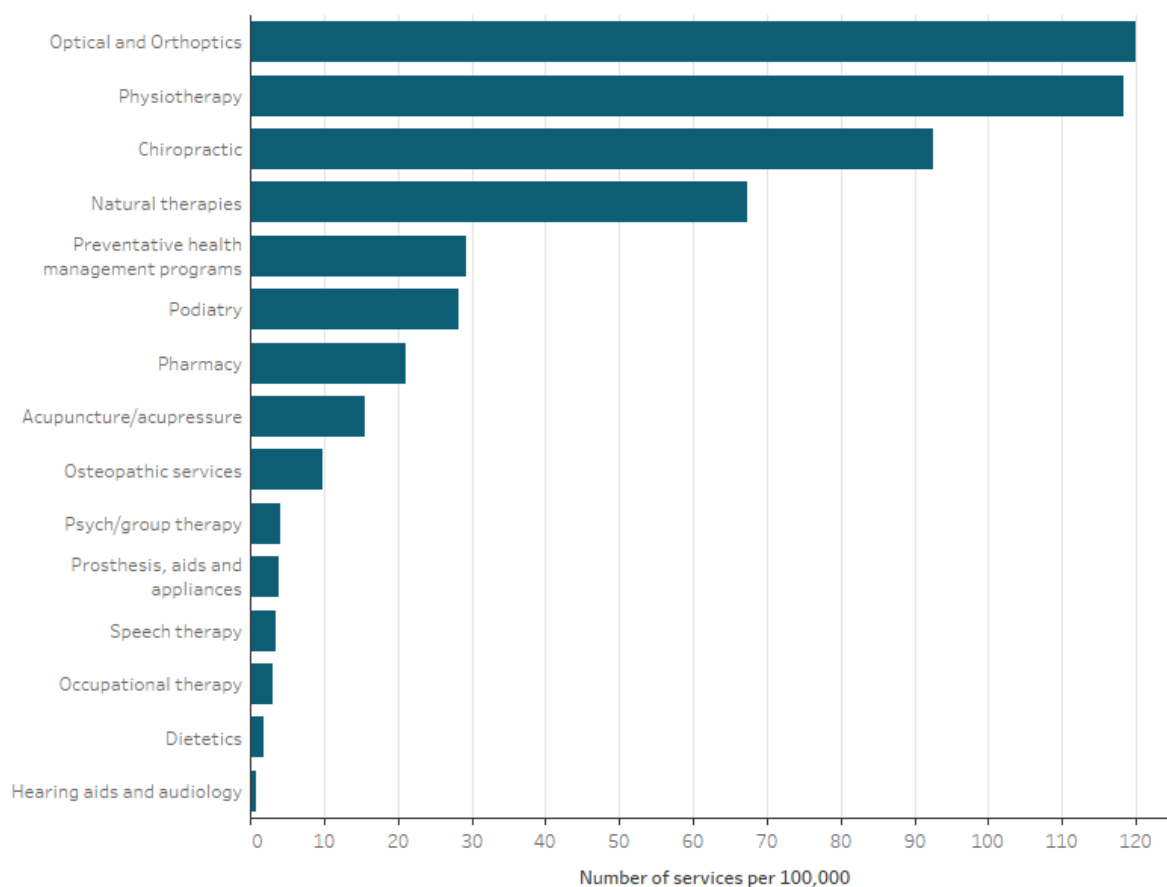
Notes
1. Maternity services and community, home and district nursing are not visualised due to small number of services. See data table for details on these services.
2. Optical and Orthoptics are combined in this visualisation. See data table for details on the services individually.
Source: APRA 2019.
http://www.aihw.gov.au/

Top 10 prescribed medicines

As noted, medicines used to treat cardiovascular conditions account for the highest volume of PBS and RPBS prescriptions compared with other ATC groups. Consistent with this, the medicines with the most prescriptions are the cholesterol-lowering medicines Rosuvastatin and Atorvastatin. After these medicines, Esomeprazole and Pantoprazole (medicines used to treat gastric reflux and ulcers) have the highest number of prescriptions; these fall under the alimentary tract and metabolism ATC group.

The medicines accounting for the most government expenditure has been less consistent over the last 5 years, mainly because of the listing of new drugs used to treat hepatitis C between 2015–16 and 2017–18. See Figure 3 (below) for a listing of the top 10 medicines over the last 5 years by selected measures.

Figure 3: Top ten medicines, by selected measures

Display
Government expenditure (current prices)†

Year
2017–18

Drug name

Drug	Government expenditure (current prices) ($millions)

Sofosbuvir + Velpatasvir — ~695
Aflibercept — ~325
Adalimumab — ~322
Ledipasvir + Sofosbuvir — ~245
Ranibizumab — ~220
Nivolumab — ~215
Sofosbuvir — ~205
Denosumab — ~190
Trastuzumab — ~170
Pembrolizumab — ~148

Government expenditure (current prices) ($millions)

ATC group

■ Antiinfectives for systemic use
■ Antineoplastic and immunomodulating agents
■ Musculo-skeletal system
■ Sensory organs

Notes
(a) ATC is a classification of medicines according to the body system/organ on which they act. This figure is broken down by ATC level 1, which is the top level in the hierarchy.
Government expenditure figures expressed in *constant prices or †current prices (please refer to glossary).
Source: AIHW analysis of Department of Health PBS and RPBS data.
http://www.aihw.gov.au/

Medicines made available under special arrangements

Programs under section 100 of the *National Health Act 1953* enable alternative arrangements to access medicines where these arrangements are considered more appropriate. These include the following programs: Highly Specialised Drugs; Efficient Funding of Chemotherapy; Botulinum Toxin; Growth Hormone; In Vitro Fertilisation (IVF); Opiate Dependence Treatment and Remote Area Aboriginal Health Services. Some medicines covered by s.100 arrangements are restricted to specific conditions, supplied through hospitals, require specialised medical supervision, and/or are high in cost.

In 2017–18, the Highly Specialised Drugs (HSD) and Efficient Funding of Chemotherapy (EFC) programs accounted for 50% and 42% of all accrued expenditure for s.100 programs respectively (Department of Health 2018a).

While government spending on all medicines available through normal PBS arrangements has remained relatively stable, spending on s.100 programs has been increasing—it grew 44% in the 5 years between 2013–14 and 2017–18, which equates to an average annual increase of 9.6%. In contrast, spending on medicines through normal PBS arrangements has increased by 1.5% in total over the 5 years (adjusted for inflation).

The increased cost of the s.100 programs may be due to the steady rise in prescriptions for medicines such as Pembrolizumab (available through the EFC program) and Lenalidomide (available through the HSD program), which are used to treat cancers. Furthermore, the recent introduction of new medicines such as Nivolumab (also used to treat cancers such as melanoma and non-small cell lung cancer) and Sofosbuvir combinations used to treat hepatitis C are a significant source of s.100 program expenditure.

Who can prescribe medicines?

Medicines are primarily prescribed by medical practitioners (GPs and specialists), however certain other types of health practitioners can also prescribe selected medicines.

In 2017–18, GPs prescribed the most PBS and RPBS medicines—around 89% of all prescriptions dispensed. The most commonly dispensed medicines, by authorised occupational group, are outlined in Table 1.

Table 1: Most common medicines by number of prescriptions dispensed, by selected occupational groups, 2017–18

Occupational group	Most common medicines	Used to treat...
GPs	Rosuvastatin, Atorvastatin; Esomeprazole, Pantoprazole	High cholesterol; Gastric reflux and ulcers
Specialists	Latanoprost; Methylphenidate	Glaucoma and other eye diseases; Attention deficit hyperactivity disorder
Dentists	Amoxicillin	Bacterial infections

Occupational group	Most common medicines	Used to treat...
Optometrists	Latanoprost; Fluorometholone	Glaucoma and other eye diseases; Eye conditions due to inflammation or injury
Nurse practitioners	Cefalexin; Atorvastatin; Esomeprazole, Pantoprazole	Bacterial infections; High cholesterol; Gastric reflux and ulcers
Midwives	Cefalexin	Bacterial infections

Note: Some medicines may be used to treat a variety of conditions (indications) and this article refers to just some of the common conditions treatable by these medicines.
Source: Therapeutic Goods Administration, Consumer Medicines Information (CMI) and Product Information (PI) documents for selected medicines.
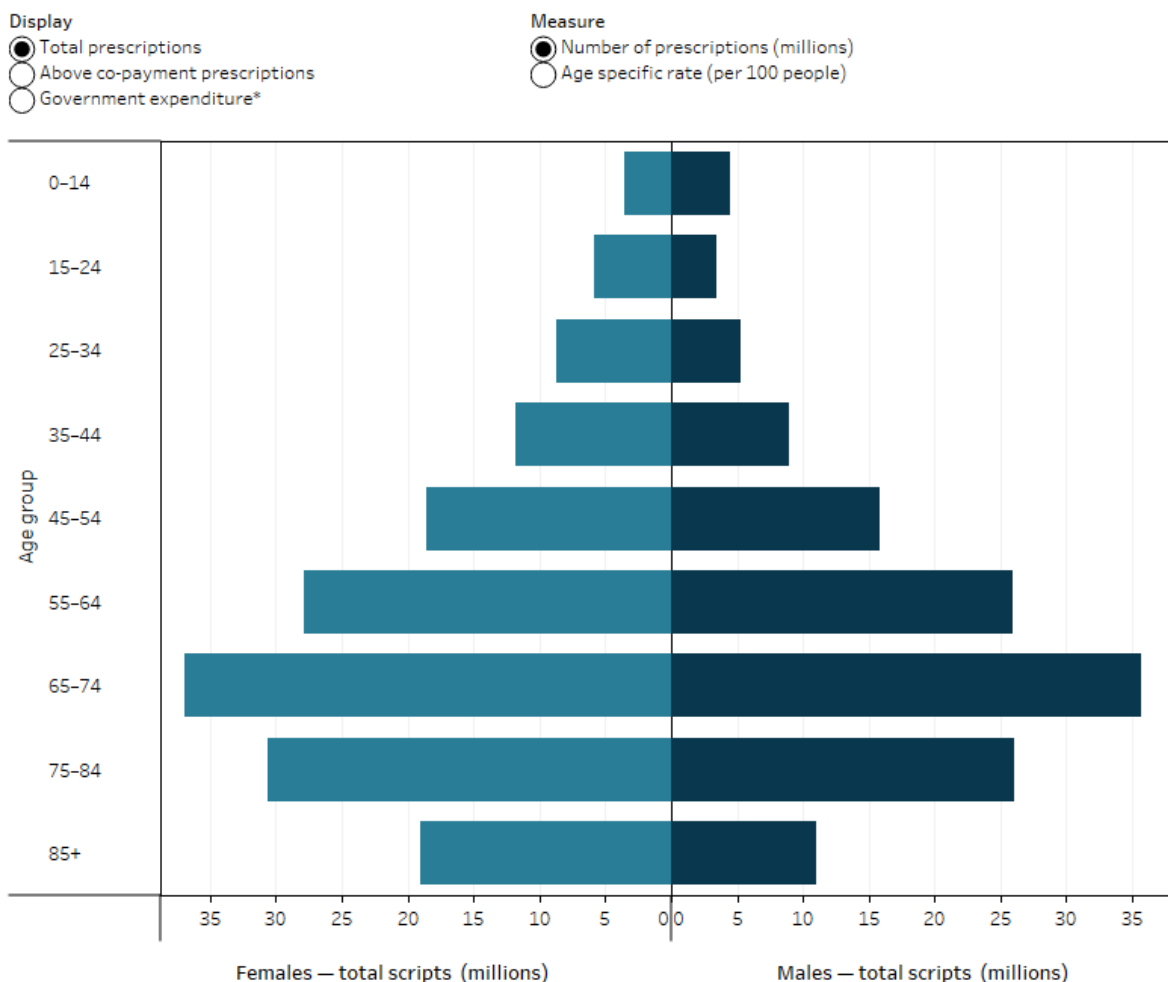
Who received these medicines?

In 2017–18, PBS prescriptions were dispensed to 17.0 million Australians (69% of the population). Population dispensing rates increased with age—young people aged 0–14 had the lowest rates of dispensed prescriptions (173 per 100 people), and the highest rates were among those aged 85 and over (6,077 prescriptions per 100 people). Similar patterns were seen for both males and females (Figure 4).

Over half of PBS and RPBS medicines were dispensed to people aged 65 and over (53%). Within specific age groups, people aged 65 to74 had the highest number of dispensed prescriptions and accounted for the highest Australian Government expenditure.

When adjusting for the difference in population age structure, the overall rate of dispensed prescriptions fell slightly (3.5%) between 2013–14 and 2017–18 from 1,137 to 1,097 prescriptions per 100 population (Figure 1). This was particularly the case for above co-payment prescriptions, where age-standardised dispensing rates per 100 people fell 11% (from 847 to 754 per 100 people).

The fall in subsidised prescription rates occurred for all age groups with the exception of those aged 85 and over. It was most apparent for the 55–64 age group, for which the age-specific prescribing rate fell 16%, and the 0–14 age group with a 13% fall. This is at least in part due to the reduction in cost for medicines leading to more scripts to fall under the patient co-payment amount. This flow on effect results from various factors including the introduction of generic medicines onto the PBS and other Australian Government measures focussed on the sustainability of the PBS.

Figure 4: Total prescriptions and government expenditure, by age and sex, 2017–18

Display
- ● Total prescriptions
- ○ Above co-payment prescriptions
- ○ Government expenditure*

Measure
- ● Number of prescriptions (millions)
- ○ Age specific rate (per 100 people)

Females — total scripts (millions)   Males — total scripts (millions)

Notes
*Government expenditure figures expressed in constant prices (please refer to glossary).
Source: AIHW analysis of Department of Health PBS and RPBS data, ABS 2011 and ABS 2018.

http://www.aihw.gov.au/

Over-the-counter medicines

In addition to prescribed medicines, certain types of medicines and other health care products may be available from supermarkets, health food outlets or from pharmacies without a prescription. Among over-the-counter medicines sold in pharmacies, natural health products were the largest-selling items, with an estimated expenditure in 2016–17 of $1.4 billion. These include vitamin and mineral supplements, herbal medicines, homeopathic preparations and probiotics. Analgesics were the second-largest-selling group ($392.2 million) (Figure 5).

Compared with the previous year, growth in sales in 2016–17 was greatest for smoking cessation aids, at 7.2% and allergy products at 6.9%.

Figure 5: Over-the-counter medicines sold by pharmacies, 2015–16 and 2016–17

Select Display
Units
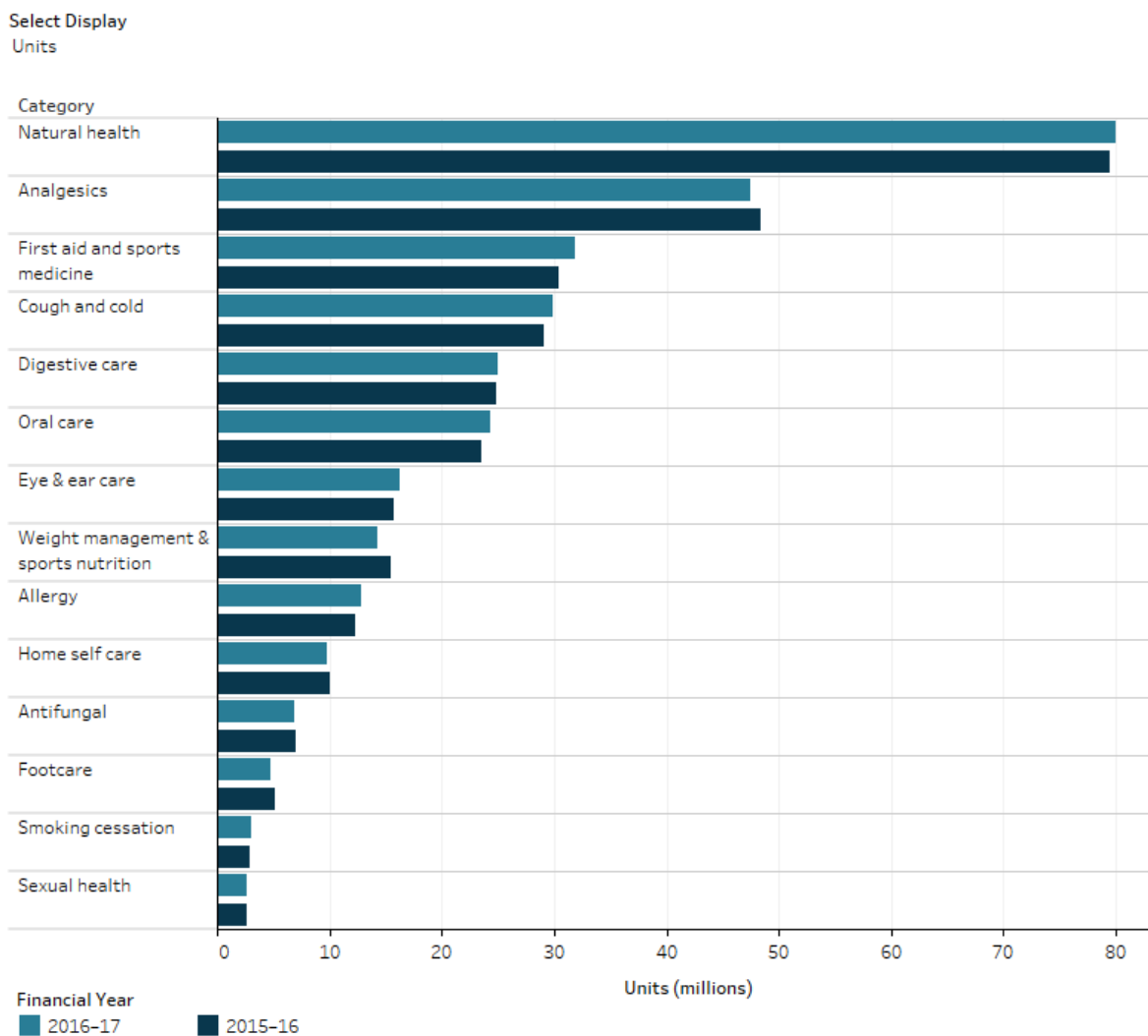
Source: IRi Health and Beauty Over-the-Counter Report, 2016 and 2017 (unpublished).
http://www.aihw.gov.au/

Where do I go for more information?

For more information on medicines in the health system, see:

- Department of Human Services Medicare Statistics
- Department of Health PBS Statistics
- Pharmaceutical Benefits Scheme website

References

ABS (Australian Bureau of Statistics) 2011. ABS Australian Demographic Statistics, Jun 2011. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2018. ABS Australian Demographic Statistics, Jun 2018. ABS cat. no. 3101.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019. Health expenditure Australia 2017–18. Cat. no. HWE 077. Canberra: AIHW.

Department of Health 2017b. What are Deeds of Agreement? Canberra: Department of Health. Viewed 25 February 2020.

Department of Health 2017a. What is hepatitis C?—fact sheet for consumers. Canberra: Department of Health. Viewed 25 February 2020.

Department of Health 2018a. Expenditure and Prescriptions Twelve Months to 30 June 2018. Canberra: Department of Health. Viewed 21 February 2020.

Department of Health 2018b. Anniversary Price Reductions. Canberra: Department of Health. Viewed 25 February 2020.

Department of Health 2020a. Price Disclosure. Canberra: Department of Health. Viewed 25 February 2020, 12 March 2020.

Department of Health 2020b. First New Brand Price Reductions. Canberra: Department of Health. Viewed 25 February 2020.

IRI (Information Resources Incorporated) 2018a. National Australia Grocery 2016–17. Unpublished data. Melbourne: IRI.

IRI 2018b. National Australia Pharmacy 2016–17. Unpublished data. Melbourne: IRI.

Mental health services

In any year in Australia, around 1 in 5 (20%) people aged 16–85 will experience mental illness (ABS 2008). Mental illness can affect not just the individual, but also their family, friends and the community—in 2015, *Mental and substance use disorders* were responsible for around 12% of the total disease burden in Australia (AIHW 2019). See Mental health for more information.

People with mental illness can access a variety of support services, which are delivered by governments, and by the private and not-for-profit sectors.

Mental health treatment, care and support is provided in a range of settings and services, including:

- specialised hospital services—public and private
- residential mental health services
- community mental health care services
- private clinical practices
- non-government organisation services
- primary care services
- allied health services.

Mental health-related care may also be delivered through other services such as disability and homelessness support services.

Health care professionals who provide treatment, care and support within the mental health system include:

- general practitioners
- psychiatrists and other medical staff
- psychologists
- nurses—registered and enrolled
- social workers
- other allied health professionals
- mental health consumer and carer workers
- other personal care staff.

Service use

A considerable number of support services are provided to people with a mental illness each year. For example, state and territory community mental health care services provided around 9.5 million service contacts in 2017–18 (Table 1).

Table 1: Selected mental health-related services provided, 2017–18/2018–19

Service type	Volume	Selected findings
Medicare-subsidised mental health-related services[a]	12.1 million services in 2018–19	General practitioners (GPs) (31%) were the largest providers of these services.
People accessing Medicare-subsidised mental health-related services	2.7 million people in 2018–19	Almost 11% of Australians accessed these services, up from 5.7% in 2008–09.
Mental health-related prescriptions[b]	39.0 million prescriptions in 2018–19	4.3 million patients (17% of the Australian population) received these prescriptions 71% of prescriptions were for antidepressant medication[b].
Public sector community mental health care service contacts	9.5 million contacts in 2017–18	Aboriginal and Torres Strait Islander patients received community mental health care services at around 3 times the rate of non-Indigenous patients.
Emergency department (ED) services (public hospitals)	287,000 presentations in 2017–18	287,000 presentations to public Australian EDs were mental health-related, which was 3.6% of all presentations (up from 2.9% in 2011–12).
Overnight admitted patient hospitalisations	260,250 hospitalisations in 2017–18	For females aged 12–17, the population rate of overnight separations with specialised care has doubled between 2006–07 and 2017–18.
Same-day admitted patient hospitalisations	61,300 hospitalisations in 2017–18	For patients aged 18–24, there has been a greater than 3-fold increase, between 2006–07 and 2017–18, in the population rate of same day separations with specialised psychiatric care.

(a) Includes psychiatrists, GPs, clinical psychologists, other psychologists and other allied health services. These services are billed as mental health-related items, which underestimates the total mental health-related activity, especially for services provided by GPs.

(b) Prescriptions subsidised and under co-payment under the Pharmaceutical Benefits Scheme and Repatriation Pharmaceutical Benefits Scheme.

Spending

About $9.9 billion, or $400 per person, was spent on mental health-related services in Australia in 2017–18; $9.4 billion of this was government mental health expenditure, representing 7.6% of total government health expenditure. Total spending on mental health increased (in real terms) by an annual average of 1.1% per person from 2013–14 to 2017–18. The total expenditure in 2017–18 included:

- about $6.0 billion, or $244 per person, spent on state and territory specialised mental health services (including $2.6 billion on public hospital services for admitted patients and $2.3 billion on community mental health care)

- about $1.2 billion, or $50 per person, spent on Medicare-subsidised services. This spending increased by an annual average of 3.8% per person from 2013–14 to 2017–18

- about $534 million, or $22 per person, spent on mental health-related prescriptions subsidised under the Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceutical Benefits Scheme (RPBS), mostly to subsidise antipsychotic (49%) and antidepressant (33%) medications.

Between 2007–08 and 2017–18, recurrent per person spending on state and territory specialised mental health services has increased (in real terms) from $209 to $244. This includes increases from:

- $62 to $84 for specialised psychiatric units or wards in public acute hospitals (average annual increase of 3.0%)

- $82 to $91 for community mental health care services (average annual increase of 1.0%)

- $12 to $15 for residential mental health services (annual average increase of 2.3%)

- $15 to $18 for grants to non-government organisations (average annual increase of 2.0%)

- $10 to $13 for other indirect expenditure (average annual increase of 2.5%).

During the same period, per person spending decreased from $27 to $23 for public psychiatric hospitals (average annual decrease of 1.8%).

See Health expenditure.

Workforce

A variety of professionals deliver care and support to people with mental illness, including psychologists, psychiatrists, mental health nurses, GPs, social workers, counsellors and peer workers. Available workforce data for some of these professions indicate that in 2017:

- there were about 26,300 registered psychologists, 22,200 mental health nurses and 3,400 psychiatrists in Australia
- about 4 in 5 (79%) psychologists were women while about 3 in 5 (61%) psychiatrists were men
- 3 in 10 (30%) mental health nurses were men compared with about 1 in 10 (11%) people in the general nursing workforce
- 1 in 3 (33%) mental health nurses and about 2 in 5 (44%) psychiatrists were aged 55 and over. The age profile of registered psychologists was younger, with around 7 in 10 (72%) aged under 55.

In 2017–18, there were about 33,500 full-time equivalent (FTE) staff employed in state and territory specialised mental health care services. Nationally, this equates to 135 FTE staff per 100,000 population. In 2016–17, about 3,500 FTE staff were employed in private hospital specialised mental health services, equating to 15 FTE staff employed per 100,000 population.

See Health workforce.

Safety and quality

In Australia, there has been a sustained effort to minimise the use of restrictive practices, such as seclusion and restraint, in mental health care settings.
The National Mental Health Commission's Position Statement on seclusion and restraint in mental health calls for leadership across a range of priorities, including 'national monitoring and reporting on seclusion and restraint across jurisdictions and services' (NMHC 2015).

See Safety and quality of health care.

Restrictive practices

Seclusion is defined as the confinement of a patient at any time of the day or night alone in a room or area from which free exit is prevented. Restraint is defined as the restriction of an individual's freedom of movement by physical or mechanical means. Reducing and, where possible, eliminating the use of seclusion and restraint is a policy priority in Australian mental health care and has been supported by changes to legislation, policy and clinical practice.

The rate of seclusion has fallen in specialised acute public hospital mental health services over the past decade—from 13.9 seclusion events per 1,000 bed days in 2009–

10 to 7.3 events per 1,000 bed days in 2018–19 (Figure 1). This is equivalent to an average annual fall of 7.0% over this period. There has also been a reduction in the duration of seclusion events, which fell by an annual average of 9.0% between 2014–15 and 2018–19.

The use of mechanical restraint has fallen from 1.7 events per 1,000 days of patient care in 2015–16 to 0.6 in 2018–19. The use of physical restraint has remained relatively stable, since reporting began in 2015–16, at about 10 to 11 events per 1,000 days of patient care (Figure 1).

Figure 1: Rate of seclusion and restraint events, public sector acute mental health hospital services, 2009–10 to 2018–19
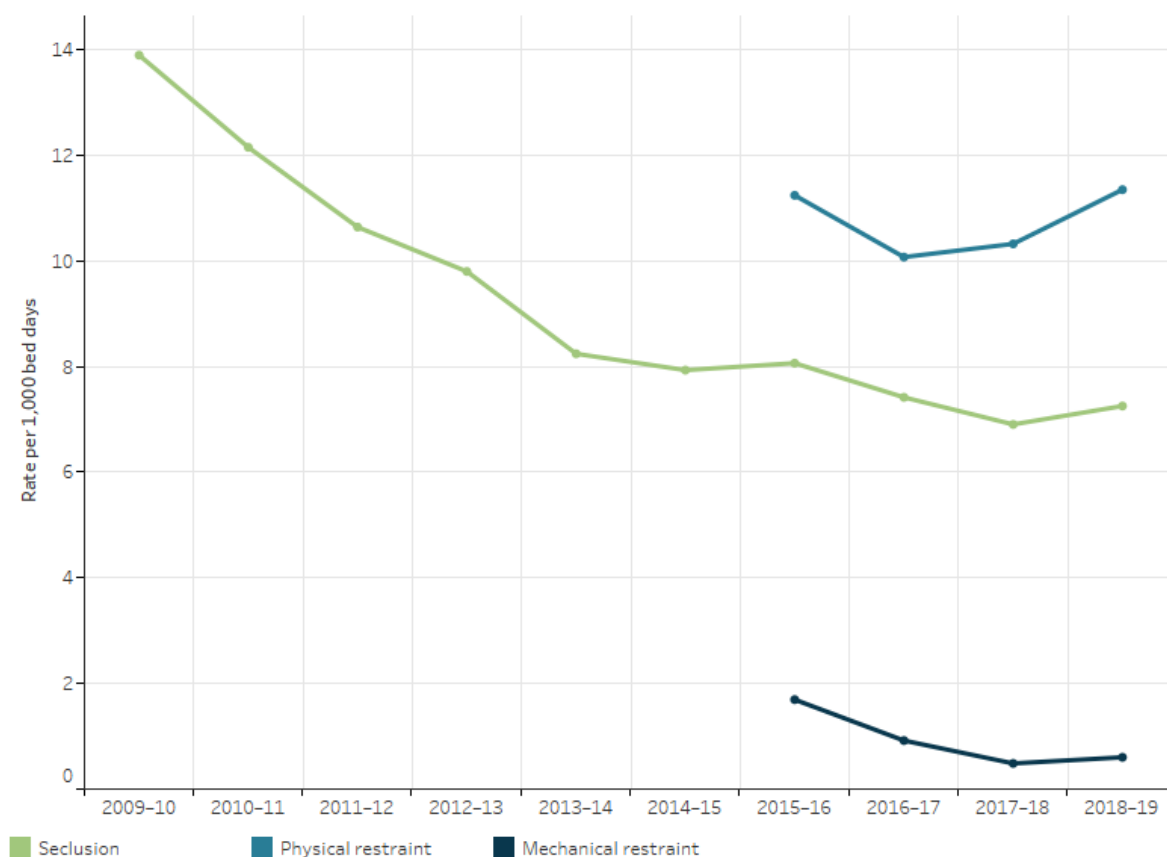
Notes

1. Rate is calculated as the number of restrictive practice (seclusion or restraint) events per 1,000 bed days for public sector acute specialised mental health hospital services.

2. Data on restraint was included in the Mental Health Seclusion and Restraint National Best Endeavours Data Set from 2015–16 onwards.

3. For detailed notes, see notes in data tables within Mental Health Services in Australia. https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia/report-contents/restrictive-practices

Source: AIHW 2020.

http://www.aihw.gov.au

Patient experience

The Your Experience of Service (YES) survey is designed to gather information from mental health consumers about their experiences of care. To date, New South Wales,

Victoria and Queensland state specialised mental health services have implemented the YES survey and it is expected that data from other jurisdictions will become available once they have fully implemented the survey. Each state has chosen a method of administration that best suits its local needs. New South Wales uses a 'continuous' approach, where consumers are offered the YES survey at the end of each episode of care. Victoria and Queensland use a 'snapshot' approach, where consumers are offered the YES survey over a particular time of the year (2 or 3 months in Victoria and 4 or 6 weeks in Queensland). Therefore, comparisons between jurisdictions with different methods should be made with caution. In 2017–18, more than 28,600 YES surveys were collected by 85 mental health service organisations across New South Wales, Victoria and Queensland. The results of the survey estimated that:

- in admitted care in 2017–18, 69% of respondents in New South Wales, 50% in Victoria and 47% in Queensland reported a positive experience of service
- in ambulatory (non–admitted) care in 2017–18, 79% of respondents in Queensland, 78% in New South Wales and 74% in Victoria reported a positive experience of service
- in residential care in 2017–18, 79% of respondents in Queensland and 78% in Victoria reported a positive experience of service.

See Patient experience of health care and Physical health of people with mental illness.

Where do I go for more information?

For more information on mental health services, see:

- Mental health services in Australia: in brief 2019.

Visit Mental health services for more on this topic.

If you or someone you know needs help please call:

- Lifeline 13 11 14
- Beyond Blue 1300 22 4636
- Kids Helpline 1800 55 1800

References

ABS (Australian Bureau of Statistics) 2008. National Survey of Mental Health and Wellbeing: summary of results, Australia, 2007. ABS cat. no. 4326.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease Study series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2020. Mental Health Services in Australia. Web report. Viewed 30 January 2020.

NMHC (National Mental Health Commission) 2015. Position statement on seclusion and restraint in mental health. Sydney: NMHC.

Palliative care services

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/palliative-care-services

Palliative care aims to prevent and relieve suffering and improve the quality of life for people with a life-limiting condition and their families (WHO 2019). Although the terms are sometimes used interchangeably, *end-of-life care* refers to care for people who are likely to die within the next 12 months (ACSQHC 2015).

In Australia, government agencies, as well as private and not-for-profit bodies, deliver palliative care. Palliative care occurs in almost all health care settings, including neonatal units, paediatric services, general practices, community settings and residential aged care services.

Specialist palliative care services operate from professional inpatient services, hospices and community-based specialist services (Department of Health 2019). The demand for palliative care services is likely to increase in the future due to a growing and ageing population, as the disease burden is greater among older age groups (AIHW 2019; WHO 2014).

Data on this page

Current data sources do not allow for reporting on aspects of palliative care and end-of-life care provided in Australia. For example, the AIHW does not have access to data on topics such as palliative care-related expenditure; community-based palliative care services; Medicare Benefits Schedule-subsidised services provided by general practitioners and non-palliative care medical specialists; and the number of palliative care beds in hospitals, both acute and subacute. The AIHW is working with Australian and state and territory governments, as well as other relevant stakeholders to expand the available national palliative care and end-of-life care information. A Palliative Care and End-of-Life Care Data Development Working Group, reporting to the Australian Health Ministers' Advisory Council, is steering the development of a set of national priorities for such information over the next 10 years.

Hospitalisations

A person may receive palliative care (hospitalisations that involved specialist palliative care) or other end-of-life care (hospitalisations where a diagnosis of palliative care was recorded, but that care was not necessarily delivered by a palliative care specialist) as an admitted patient in hospital, and may require one or more hospitalisations while receiving this care. Some of these patients will die in hospital.

Admitted patient data from public and private hospitals show that, in 2017–18:

- there were 79,900 palliative care-related hospitalisations, 57% for palliative care, and 43% for other end-of-life care
- just over one-third (36%) of all admitted patients who died in hospital had received palliative care
- over half (55%) of palliative care hospitalisations recorded a principal diagnosis of cancer.

From 2013–14 to 2017–18, palliative care hospitalisations increased by around one sixth (or 17%) to 45,600 (Figure 1), a similar rate to the increase for all hospitalisations over the same period.

See Hospital care.

Figure 1: Palliative care hospitalisations, 2013–14 to 2017–18
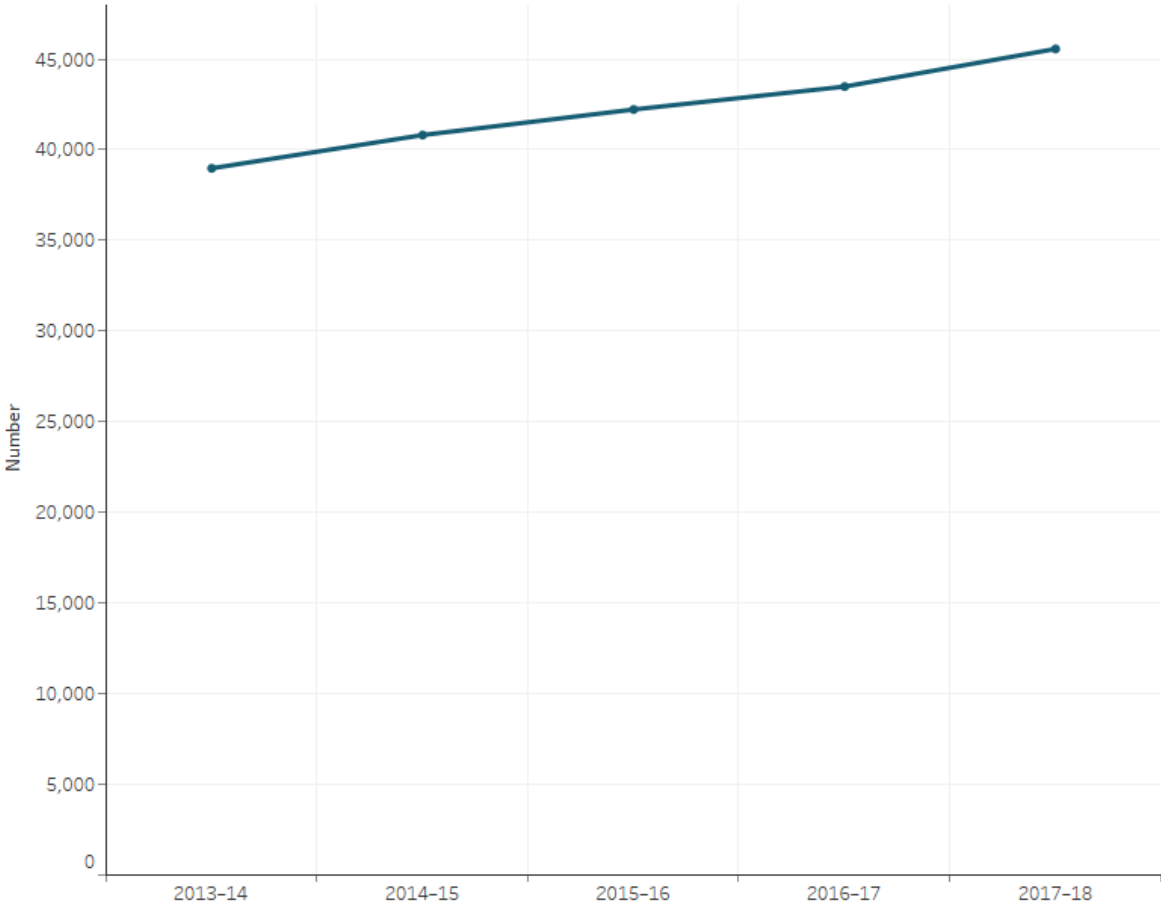
Notes

1. Palliative care hospitalisations are those that involved specialist palliative care.

2. In *Australia's health* 2018, palliative care hospitalisations also included hospitalisations for other end-of-life care. In *Australia's health* 2020, palliative care hospitalisations do not include hospitalisations for other end-of-life care.

3. For further information regarding the data and exclusions see Technical information in Palliative care services in Australia http://www.aihw.gov.au/pcsia

Source: National Hospital Morbidity Database 2020.

http://www.aihw.gov.au

Medicare services

The Royal Australian College of Physicians describes palliative medicine as 'the specialist care of people with terminal illnesses and chronic health conditions in community, hospital and hospice settings'. Palliative medicine physicians work collaboratively with a multidisciplinary team of health professionals to 'provide end-of-life care, provide relief from pain and symptoms of illness, and optimise the quality of life for a patient' (RACP 2020). Some of these services may be subsidised under Australia's universal health insurance scheme, Medicare. In 2018–19:

- 16,800 patients received a Medicare-subsidised palliative medicine specialist service
- 89,400 Medicare-subsidised services were provided by palliative medicine specialists
- $7.0 million was paid in benefits for Medicare-subsidised palliative medicine specialist services, at an average of $416 per patient
- Western Australia recorded 725.8 subsidised palliative medicine specialist services per 100,000 population, more than double the national average rate of 355.0.

Between 2014–15 and 2018–19, Medicare benefits paid for all palliative medicine specialist services increased by 31%.

Medications for palliative care treatment

The use of prescription medications to provide 'relief from pain and other distressing symptoms' (WHO 2014) is an important part of palliative care. In most cases, this involves medications being prescribed by the treating clinician. In 2004, the Australian Government introduced the Pharmaceutical Benefits for Palliative Care Section as a subsection of the Pharmaceutical Benefits Scheme (PBS) schedule to improve access to essential and affordable medications for patients receiving palliative care. Palliative care-related prescriptions, as described below, refer to medications prescribed by approved prescribers and subsequently dispensed by approved suppliers (community pharmacies or eligible hospital pharmacies) under the Pharmaceutical Benefits for Palliative Care Section. It should be noted that patients receiving palliative care can also access medications in the general listings of the PBS/Repatriation Pharmaceutical Benefits Scheme (RPBS) schedule, such as oxycodone; however, these medications are not included in the following information.

In 2017–18:

- more than 1.1 million palliative care-related prescriptions were provided to more than 550,000 patients
    - the majority (94%) of these medications were prescribed by a general practitioner; other clinicians prescribed 5.2% and palliative medicine specialists prescribed less than 1%
- $20.6 million was spent in benefits for medications included in the PBS/RPBS Palliative Care Section (an average of $67 per patient). The average cost per patient

ranged from $56 in the Northern Territory to $150 per patient in the Australian Capital Territory.

See Medicines in the health system.

Workforce

The palliative care workforce consists of a number of professional groups, including specialist palliative medicine physicians, palliative care nurses, general practitioners, pharmacists, other medical specialists (such as oncologists and geriatricians), as well as other health workers, support staff and volunteers.

Nationally, in 2017, there were 250 employed specialist palliative medicine physicians and 3,400 employed palliative care nurses. The majority of doctors employed as specialist palliative medicine physicians were women (64%), which is double the female proportion of all employed medical specialists (32%).

See Health workforce.

Outcomes

The Australian Palliative Care Outcomes Collaboration (PCOC) is a national palliative care outcomes and benchmarking program. PCOC's primary objective is to systematically improve patient outcomes, including pain and symptom control. As participation in PCOC is voluntary, data reported by the program represents a subset of specialist palliative care services delivered in Australia.

For the 133 specialist palliative care services participating in PCOC in 2018:

- more than three-quarters (77%) of PCOC episodes were characterised by a cancer diagnosis
- inpatient (hospital/hospice) services were more likely to achieve better outcomes for patients across all benchmarks than community care services
- 94% of patients' care commenced on the day of, or the day after, the date they were ready for palliative care
- almost 9 in 10 (88%) patients had urgent needs (i.e. *unstable phase*) managed in 3 days or less
- over half (56%) of patients who began experiencing moderate to severe distress from pain had this improved to absent/mild distress.

Where do I go for more information?

For more information on palliative care services, see:

- Palliative care services in Australia
- Department of Health Palliative care website

- [Palliative Care Australia](#) website
- [Pharmaceutical Benefits Scheme](#) website
- [Palliative Care Outcomes Collaboration](#)

Visit [Palliative care services](#) for more on this topic.

References

ACSQHC (Australian Commission on Safety and Quality in Health Care) 2015. [National consensus statement: essential elements for safe and high-quality end-of-life care](#). Sydney: ACSQHC.

AIHW (Australian Institute of Health and Welfare) 2019. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease Study series no. 19. Cat. no. BOD 22. Canberra: AIHW.

Department of Health 2019. [National Palliative Care Strategy 2018](#). Canberra: Department of Health.

RACP (Royal Australian College of Physicians) 2020. [Australasian Chapter of Palliative Medicine](#). Sydney: RACP. Viewed 25 March 2020.

WHO (World Health Organization) 2014. [Global atlas of palliative care at the end of life](#). Geneva: WHO.

WHO 2019. [WHO definition of palliative care](#). Geneva: WHO. Viewed 30 August 2019.

Patient experience of health care

When you last visited a doctor, did you feel your doctor took the time to understand your medical history? Did you feel listened to and respected? Did you need to repeat yourself when seeing different health professionals? These elements of the patient experience are key to how Australians feel about the quality of the health care services they receive.

Why is patient experience important?

Patient experiences provide a unique perspective on health care that not only contributes to measuring system performance (NHIPPC 2017), but also provides insights into patient journeys and their quality of care. Patient engagement is increasingly recognised around the world as an integral part of quality health care and a critical component of people-centred services (WHO 2016). Taking the time to understand a patient's needs, preferences, beliefs and attitudes, and adapting care to meet their expectations, is central to an effective patient–doctor relationship (AIHW 2019).

Australia's health performance framework

The Australian Health Performance Framework is used to guide the reporting of Australia's health performance, ensuring the needs of different populations and levels of the health system are considered. Identified areas of assessment include ensuring service is person-centred and culturally appropriate, and that patients have autonomy in their care. Outcomes of studies such as the Patient Experience Survey (PEx) and the Coordination of Health Care study can inform the indicators within such frameworks.

Doctors who engage effectively with both their patients and other health care providers are key to facilitating proper coordination of health care and good patient health outcomes. Patients who are engaged—who are listened to, respected, and included in decisions made about their care—are better able to make informed decisions about their health (WHO 2016).

How are patient experiences measured?

Tools to measure patient experience, such as patient surveys, are internationally recognised as a key marker of quality of care (Raleigh et al. 2015). It is important that monitoring of patient experiences continues so that Australians continue to receive equitable, high-quality health care and any gaps between different populations can be reduced.

The AIHW monitors and reports on patient experiences of health care services in Australia through the Australian Bureau of Statistics' (ABS) Patient Experience Survey (PEx). PEx data have been reported annually since 2010–11, and results from the PEx 2018–19 are presented below. The AIHW also reports on patient experiences with mental health services specifically, through the Your Experience of Service (YES) survey. For patient experiences with mental health services, see Mental health services.

With patient experience information predominantly obtained through surveys, it is important to note that performance is as reported through the eyes of patients. Differences in patients' reported experiences are likely to be influenced by a mix of health provider practice and the expectations of the patients themselves.

In collaboration with the ABS, the AIHW is also conducting the Coordination of Health Care (CHC) study. The study was designed to provide information on patients' experiences of coordination and continuity in care across Australia. The 2016 Survey of Health Care (SHC) was a key component of the CHC study. It focused on Australians aged 45 and over who had at least 1 GP visit in the previous 12 months. Thirty-five thousand people responded on their experiences related to care received during 2015–16. The next part of the CHC study will link results from the SHC to other data sets, including hospital and emergency data.

Patient experiences

Experiences with general practitioners

In general, most people reported positive experiences of health care provided by general practitioners (GPs). Three-quarters felt that their GPs always listened carefully to them (75%) and spent enough time with them in their appointments (76%). A slightly greater proportion of people (81%) felt their GPs always showed respect for what they had to say (Figure 1).

Men were slightly more likely than women to report that their GP always listened carefully, showed respect and spent enough time with them. Similarly those in better health tended to report higher satisfaction than those in poorer health.

Reported patient experiences did not vary greatly between city, regional or remote areas across Australia. There was, however, a slight decline in patients' experiences with their GPs with increasing socioeconomic disadvantage. For example, 78% of people who were in the highest socioeconomic areas felt they were always listened to by and spent enough time with their GP, compared with 73% of those in the lowest socioeconomic areas.

See [Primary health care](#).

Experiences with medical specialists

In general, people rated their experiences with medical specialists more positively than their experiences with GPs. Overall, 80% of people felt they were always listened to by their medical specialists, while 7.0% felt this happened only sometimes, rarely or never. Similar proportions felt that medical specialists spent enough time with them for their appointments and showed respect.

Similar to experiences with GPs, males tended to rate their experiences with medical specialists more highly than females in general, and those with better self-assessed health were more likely to report that their medical specialist always listened carefully, showed respect and spent enough time with them (Figure 1).

As with GPs, there were no substantial differences between city, regional or remote areas, but those in the lowest socioeconomic areas were slightly less likely than those in the highest socioeconomic areas to feel that their medical specialist always showed them respect. However, these patients were still more satisfied with their specialists than they were with their GPs.

See [Specialist, pathology and other diagnostic services](#).

Figure 1: Patient experience with GPs and medical specialists, by sex, self-assessed health status, remoteness area and socioeconomic area, 2018–19

Source: ABS 2019.
http://www.aihw.gov.au/

Coordination of health care

Coordination of health care aims to ensure that the patient journey through the health system is smooth. It requires different professionals to collaborate and communicate effectively across different health care settings. The quality of this coordination affects patients' experience of their health care, as well as treatment and health outcomes. For patients with complex health needs, such as those with multiple chronic conditions, good coordination of health care is especially important.

What is coordination of health care?

Coordination of health care is defined as 'the deliberate organisation of patient care activities between two or more participants involved in a patient's care to facilitate the appropriate delivery of health care services' (Victorian Department of Health and Human Services 2018). Having access to well-coordinated and good-quality health care is essential to enhancing patients' understanding, control and self-management of their illness (Bywood et al. 2011; Jeon et al. 2010).

Information sharing between health care providers is essential for the provision of safe and high-quality health care. The 2016 Survey of Health Care, part of the Coordination of Health Care study, focused on people aged 45 and over who had seen a GP in the previous 12 months. In 2016, almost all (98%) patients reported their GP was aware of their health care history, with a similar proportion (92%) feeling their health professional understood their health care needs and preferences well, and that they received enough information about their care and treatment (also 92%).

Patients living in *Remote and very remote* areas were more likely to say their GP was not informed of visits to other providers than people living in *Major cities* (19% compared with 10% of those living in *Major cities*). Those with no usual GP were 2–3 times as likely to report poor sharing of information as those with a usual GP. Additionally, of the patients who visited an emergency department, about 1 in 4 (23%) said this information was not shared with their usual GP or place of care.

Most patients in this study reported positive experiences with GPs for quality of care provided, with better experiences of care reported by patients who were in better health, were better educated, spoke English and lived in cities.

It was also found that:

- nearly all (98%) patients had a usual GP or place of care
- those who spoke English at home were more likely to report having a usual GP or place of care than those who spoke another language (98% compared with 94%)
- almost 9 in 10 (89%) patients felt they were involved in decisions about their care and a similar proportion (93%) felt test results were explained in a way they understood (Figure 2)
- those aged 75 and over were more likely to feel they received excellent or very good quality care from their usual GP or in their usual place of care than younger patients.

Figure 2: Results for patient-reported experiences of care, by sex, remoteness area and socioeconomic area, 2016

Source: AIHW 2018.
http://www.aihw.gov.au/
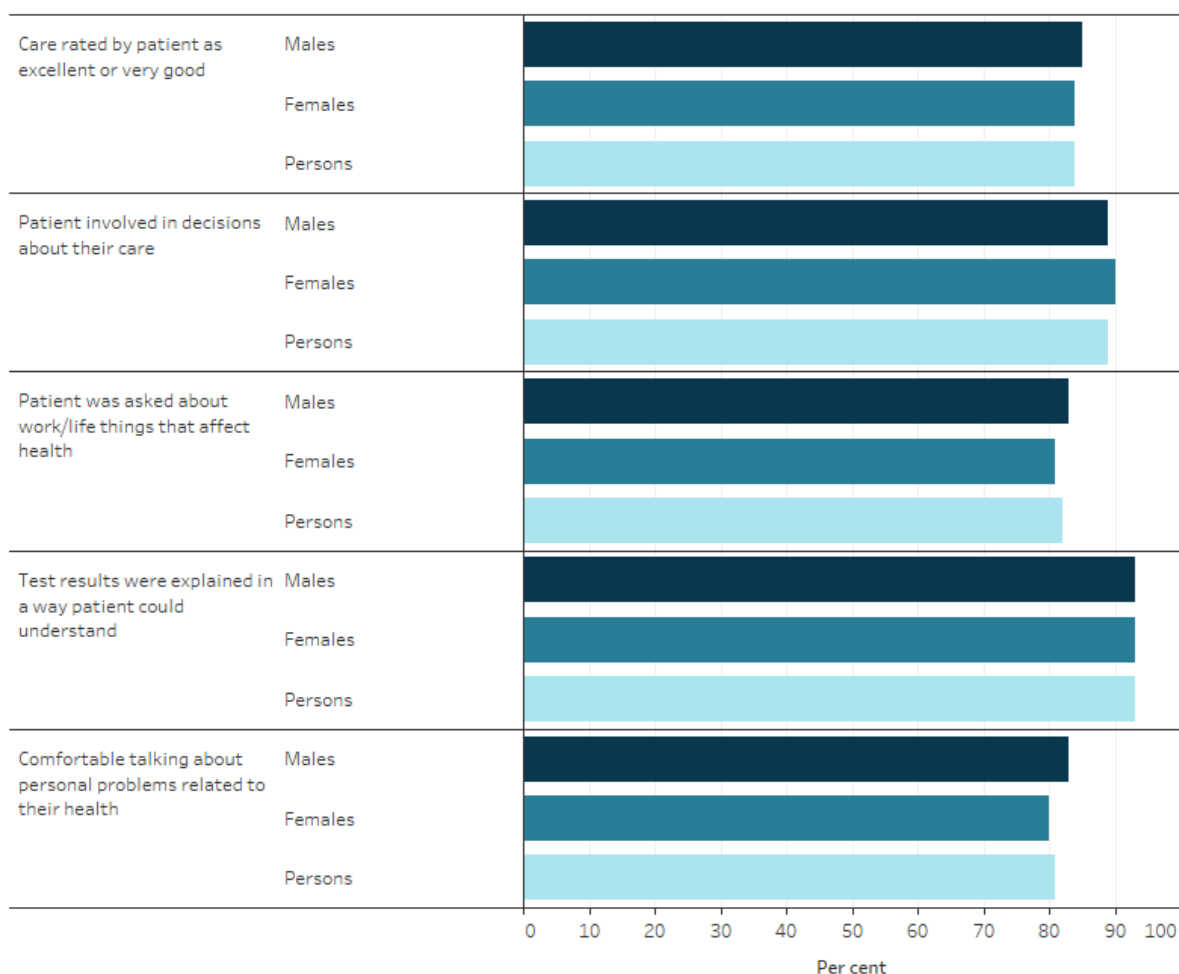
Where do I go for more information?

For more information on patient experience of health care, see:

- Coordination of health care: experiences of information sharing between providers for patients aged 45 and over 2016

- Patient experiences in Australia by small geographic areas in 2017–18

- Australian Health Performance Framework

- Australian Bureau of Statistics (ABS) Survey of Health Care, Australia, 2016

- ABS Patient Experiences in Australia: summary of findings, 2018–19

Visit Primary health care for more on this topic.

References

ABS (Australian Bureau of Statistics) 2017. Survey of Health Care, Australia, 2016. ABS cat. no. 4343.0. Canberra: ABS.

ABS 2019. Patient experiences in Australia: summary of findings, 2018−19. ABS cat. no. 4839.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2018. Coordination of health care—experiences with GP care among patients aged 45 and over, 2016. Cat. no. CHC 2. Canberra: AIHW.

AIHW 2019. Coordination of health care: experiences of information sharing between providers for patients aged 45 and over, 2016. Cat. no. CHC 3. Canberra: AIHW.

Bywood P, Jackson-Bowers E & Muecke S 2011. Initiatives to integrate primary and acute health care, including ambulatory care services. PHCRIS (Primary Health Care Research & Information Service) policy issue review. Adelaide: PHCRIS.

Jeon Y, Kraus S, Jowsey T & Glasgow N 2010. The experience of living with chronic heart failure: a narrative review of qualitative studies. BMC Health Services Research 10:77.

NHIPPC (National Health Information and Performance Principal Committee) 2017. The Australian Health Performance Framework. Viewed 18 October 2019.

Raleigh V, Thompson J, Jabbal J, Graham C, Sizmur S & Coulter A 2015. Patients' experience of using hospital services. London: The King's Fund.

Victorian Department of Health and Human Services 2018. Care coordination. Melbourne: Victorian Department of Health and Human Services. Viewed 24 October 2019.

WHO (World Health Organization) 2016. Patient engagement: technical series on safer primary care. Viewed 23 October.

Primary health care

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/primary-health-care

Primary health care is the front line of Australia's health care system. It is often the first point of contact a person has with the health system. Effective primary health care can help avoid unnecessary hospitalisations and improve health outcomes (AMA 2017; OECD 2017).

Primary health care encompasses a range of services delivered outside the hospital that generally do not need a referral. This includes unreferred medical services, for example, general practitioner (GP) visits, dental, other health practitioner, pharmaceutical, and community and public health services (AIHW 2019c).

Primary health care professionals include GPs, nurses, allied health professionals, pharmacists, dentists and Aboriginal and Torres Strait Islander health workers and practitioners (Department of Health 2018a).

Health professionals deliver primary health care services in various settings, including allied health practices, community health centres, general practices, and through communication technology. The emerging use of telehealth and online health information websites such as healthdirect is playing an increasing and integral role in supporting primary health care service delivery.

During the COVID-19 disease pandemic, the Australian Government expanded Medicare-subsidised telehealth services for all Australians and increased Practice Incentive Payments. The new MBS items allowed Australians to access essential primary health services from home, to limit the potential exposure of patients and health practitioners to the virus. Additional incentives to GPs and other health practitioners provided support to practices to remain open, ensure continuity of care and reduce burden on hospitals (Department of Health 2020).

What is the scale and nature of primary health care?

Primary health care services account for a large proportion of health care services in Australia. In 2018–19, 83% of Australians aged 15 and over reported seeing at least 1 GP in the previous 12 months, and half (49%) visited a dentist, hygienist or dental specialist (ABS 2019b).

The National Health Survey conducted in 2014–15 estimated that, of the 92% of Australians who consulted at least 1 health professional, 28% saw a primary health

professional other than a GP such as a pharmacist (8.1%), physiotherapist (8.0%) or an optician or optometrist (6.5%) (ABS 2017a).

Measuring primary health care service use

In Australia, most GPs and a limited range of allied health services are subsidised for Medicare card holders under the Medicare Benefits Schedule (MBS). In addition, government, non-government and private organisations are involved in funding and delivering primary health care outside the Medicare arrangements. See Health expenditure and Specialist, pathology and other diagnostic services for more information.

This section examines published data from the MBS, private health insurance benefits and Aboriginal and Torres Strait Islander health services reports. While these data are comprehensive and provide useful insights, outside of these sources data on primary health services are limited.
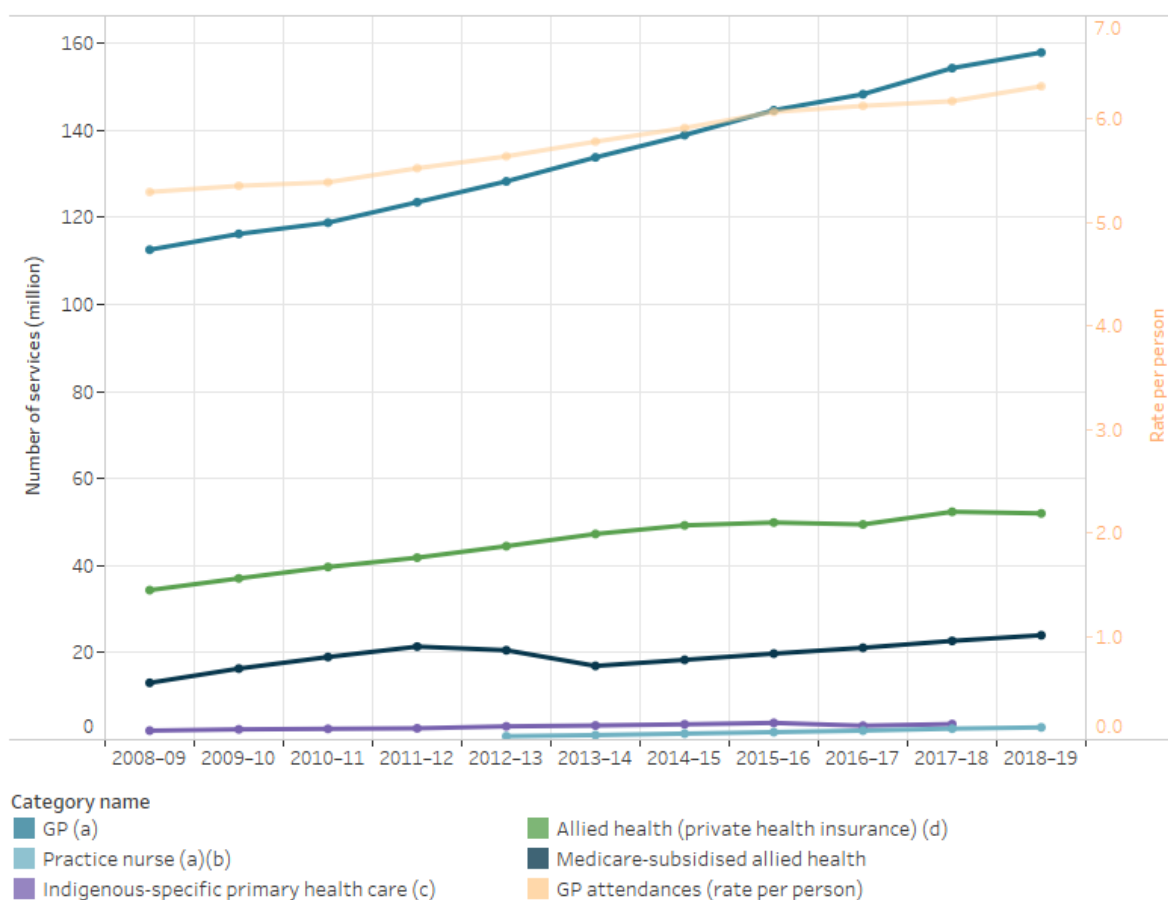
Primary health care services

Over the 10 years to 2018−19, the rate of primary health care services claimed per person has increased. Nationally there were 158 million GP attendances, or 6.3 per person, in 2018–19, up from 5.3 per person (113 million) in 2008–09 (claimed through Medicare) (ABS 2019a; Department of Health 2019a).

For some primary health care services, there was more usage than 7–10 years ago (not controlling for population). Nationally there were:

- 2.8 million practice nurse attendances in 2018–19 (claimed through Medicare), up from 806,000 attendances in 2012–13 (the latest comparable period) (Department of Health 2019a)

- 571,00 nurse practitioner attendances in 2018–19, up from 70,400 in 2011–12 (the latest comparable period) (DHS 2019)

- 3.6 million Indigenous-specific primary health care service attendances in 2017–18, a 72% increase from 2008–09 (2.1 million) (AIHW 2019a).

Figure 1 presents an overview of the scale, trends and type of primary health care services used in Australia over the past decade.

Figure 1: Use of primary health care services, 2008–09 to 2018–19

Category name

- ■ GP (a)
- ■ Practice nurse (a)(b)
- ■ Indigenous-specific primary health care (c)
- ■ Allied health (private health insurance) (d)
- ■ Medicare-subsidised allied health
- ■ GP attendances (rate per person)

Notes
(a) Excludes services delivered to admitted hospital patients.
(b) Excludes number of services prior to 2012-13 due to changes to the MBS item codes.
(c) Results for 2018–19 were unavailable at the time of publication.
(d) Includes services claimed through general ('extras') private health insurance cover, excluding dental
(e) Includes allied health and optometry services claimed through Medicare.
Sources: ABS 2019a; AIHW 2019a; APRA 2019; DHS 2019; Department of Health 2019a.
http://www.aihw.gov.au/

Allied health

Allied health professionals encompass a broad group of health practitioners, excluding doctors, nurses and dentists (AHPA 2020a). Many primary allied health services are provided in the private setting (AHPA 2020b). Figure 2 provides an overview of allied health services claimed through private health insurance over the decade to 2018−19. For public allied health services, see Allied health and dental services.

Figure 2: Use of primary allied health services in the private setting, 2008–09 to 2018–19

Choose year:
2018–19

Number of services per 100,000
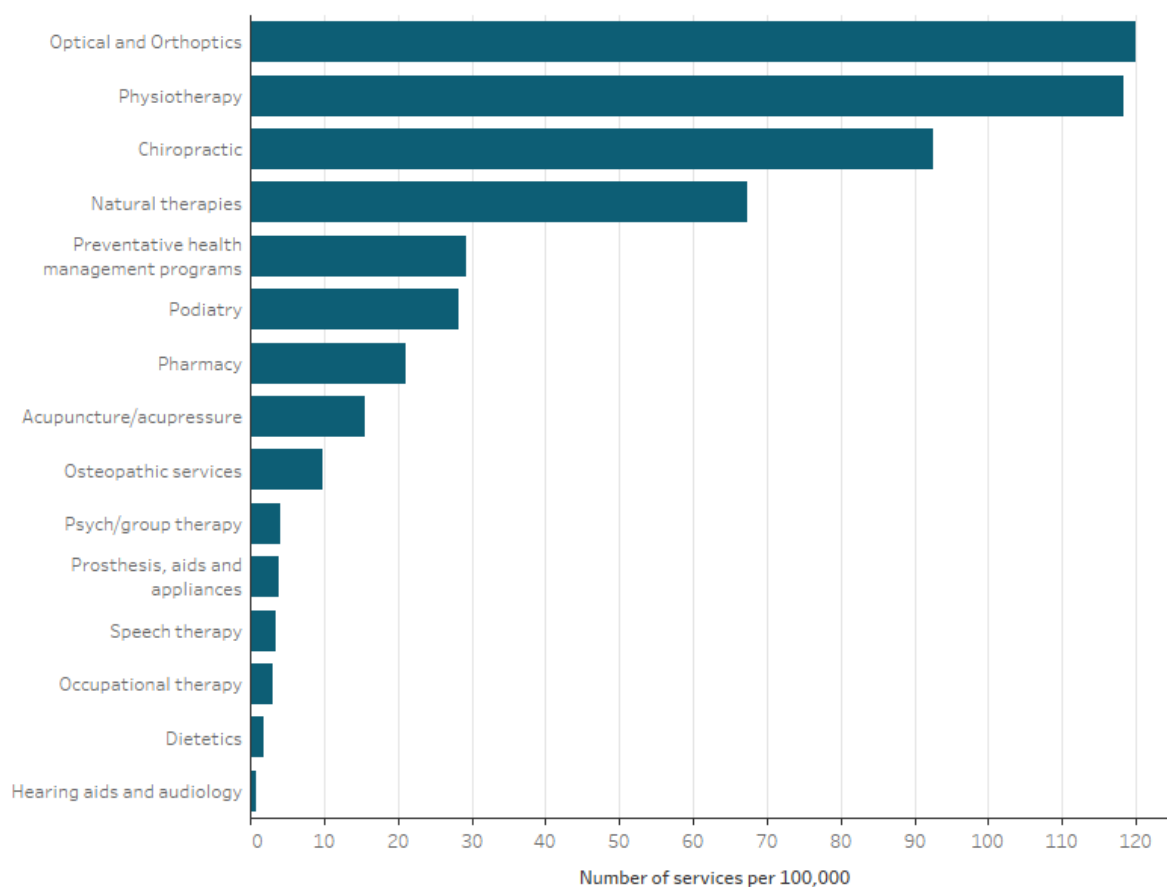
GP visits and experiences

Of those who saw a GP, more than 6 in 7 people (85%) reported visiting a GP multiple times a year, according to the Australian Bureau of Statistics (ABS) Patient Experiences in Australia 2018–19 survey (ABS 2019b). Over one-third (38%) of people visited a GP 2 to 3 times a year and 12% reported they saw their GP 12 or more times. Generally, the number of GP visits increased with age, with almost half (49%) of people aged 75 and over reporting 4 to 11 GP visits a year.

Overall, most people reported having positive experiences with GPs. In 2018–19, 81% of patients felt their GP always showed respect, 75% felt their GP always listened and 76% felt their GP spent enough time with them (ABS 2019b).

According to the 2016 Survey of Health Care, an estimated 1 in 4 (24%) patients aged 45 and over reported that there was a time when they felt they needed to see a GP but did

not go. Of these patients, half (50%) reported that one of the reasons was that they could not get an appointment when needed (AIHW 2020). See Patient experience of health care.

Reasons for seeing a GP

GPs treat a broad range of health issues, and are often the first point of contact many people have with the health system. A report based on a survey of 1,200 GPs conducted in 2019 by the Royal Australian College of General Practitioners found that psychological issues (for example, anxiety, depression and mood disorders) are the most commonly managed health concern by GPs. Since 2017, the proportion of patients presenting with psychological issues has increased from 61% in 2017 to 65% in 2019. Other commonly managed health concerns in 2019 were musculoskeletal (for example, arthritis) (40%), respiratory (for example, asthma) (39%) and endocrine and metabolic conditions (for example, diabetes) (34%) (RACGP 2019).

The NPS MedicineInsight general practice insights report analysed data from 534 general practices (6.6% of all general practices) and more than 2.7 million patients (13% of patients who visited a GP) nationally, who had at least 1 encounter with a GP in 2017–18. Within the study sample there were 13.8 million clinical GP encounters—an average of 5 GP encounters per patient per year. Hypertension (15%), depression (14%) and dyslipidaemia (13%) were the most common conditions recorded among patients (at any time in the medical record) of the selected non-communicable conditions measured in this report (NPS MedicineWise 2019).

Spending

In 2017−18, primary health care accounted for over one-third (34% or $63.4 billion) of Australia's total health expenditure. Of this expenditure, Australian Government programs (including MBS and PBS) spent $28.1 billion, non-government entities (individual, private health insurers and other private sources) spent $25.3 billion, and state and territory governments spent $10.0 billion. In comparison, hospital services accounted for nearly 40% ($74.0 billion), and referred medical services for 11% ($19.4 billion) of the total health expenditure.

Between 2007–08 and 2017−18, Australian Government expenditure on primary health care grew 3.3% each year in real terms—an increase of $7.8 billion over the decade (AIHW 2019c). See Health expenditure.

Patient access

Access to primary health care services helps reduce the number of avoidable hospital visits, improves population health and reduces inequality. It is important for the prevention and treatment of risk factors and conditions as well as improving health outcomes (Swerissen & Duckett 2018).

For many Australians, complex health needs, geographical, cultural and socioeconomic factors may influence their ability to access primary health care. For instance, people living in rural and remote areas tend to have poorer access to health care, due to the uneven distribution of many health professionals in Australia (Department of Health 2018b). See Rural and remote health.

Understanding primary health care

The availability of reliable high-quality data on our primary health care system is limited. In particular, there is a gap in understanding the patient journey and experiences—this includes the reasons patients attend primary health care, diagnoses and conditions treated, actions taken and their outcomes. This makes it difficult to report on primary health care with the same rigour as is applied to hospital care, and to identify and monitor areas where improvements might be needed.

The AIHW is currently working to make an enduring data asset to address gaps in primary health care data. Key issues raised at the data asset consultation workshops with consumers, clinicians, commissioners of primary health care, and researchers included improving the visibility of:

- primary health service needs in rural and remote communities

- the wide range of primary health care professionals operating in the primary health care sector—for example, nurse practitioners, allied health workers and dental health workers (see Primary health care data development) (AIHW 2019b).

This section examines data from the ABS Patient Experience Survey (ABS 2019b) to explore the experiences of people using primary health care. While as much detail as possible is included in this section, this provides only a partial picture of primary health care.

Access to primary health care has improved over time

Access to GPs and after hours GPs has changed over the years. Between 2013–14 and 2018–19, the proportion of people who delayed or did not seek GP care decreased from 30% to 23% and from 34% to 30% for after-hours GP care (Figure 3).

Figure 3: Proportion of people who delayed or did not seek GP or after hours GP care when needed, aged 15 and over, 2013–14 to 2018–19
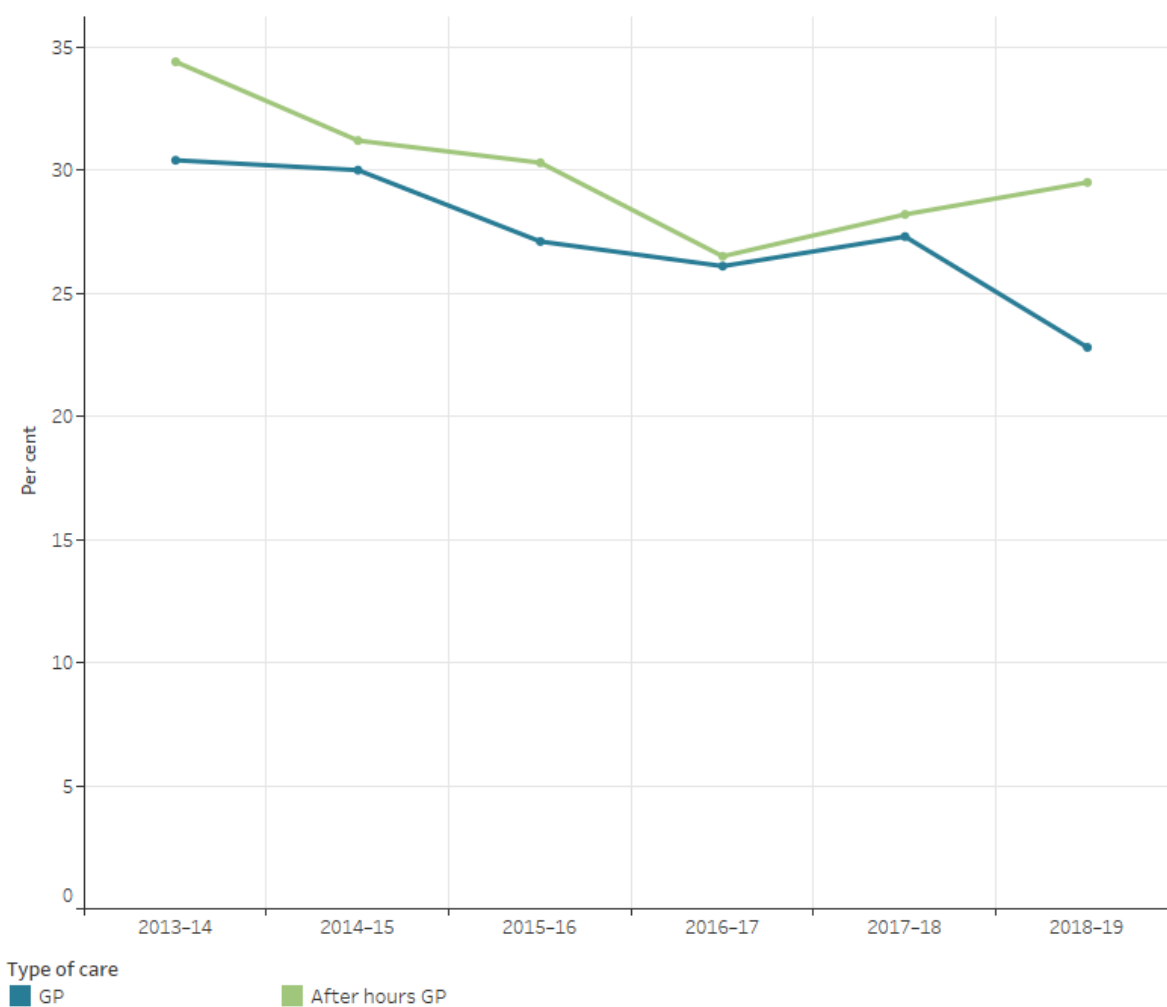
Source: ABS 2014, 2015, 2016, 2017b, 2018, 2019b.
http://www.aihw.gov.au/

Cost barriers

There were notable differences in those who reported delaying or not seeking GP care due to cost among various populations groups.

The 2018–19 Patient Experience Survey estimated that, of those who reported delaying or not seeking GP care:

- 3.4% of people delayed or did not see a GP due to cost, and 20% stated that cost was not a reason
- people living in *Outer regional*, *Remote* and *Very remote* areas were 1.3 times as likely to report cost as a barrier to seeing a GP, compared to people living in *Major cities* (Figure 4).

The proportion of people reporting cost as a barrier for seeking GP care may vary by the availability of bulk-billing services.

MBS data show that:

- in 2018–19, the bulk-billing rate for GPs outside of the hospital was 86% (136 million attendances), an increase from 80% (89 million) in 2008–09 (Department of Health 2019a)

- in 2017–18, the rate of bulk-billed GP services was lower in regional Primary Health Network (PHN) areas (569 services per 100 people) than in metropolitan PHN areas (621 services per 100 people), after adjusting for age (AIHW 2019d)

- in 2016–17, patients living in metropolitan PHN areas were less likely to have out-of-pocket costs (48%) than patients in regional PHN areas (53%) (AIHW 2018).

It should be noted that the above bulk-billing rates refer only to services where a bulk-billing option was provided. It should also be interpreted that these rates do not describe the proportion of patients who were entirely bulk-billed for their services.

Figure 4: Proportion of people aged 15 and over who delayed or did not seek care at least once when needed due to cost, by type of care and disadvantage, 2018–19

Disadvantage
○ Remoteness
○ Self-assessed health status
● Socioeconomic area
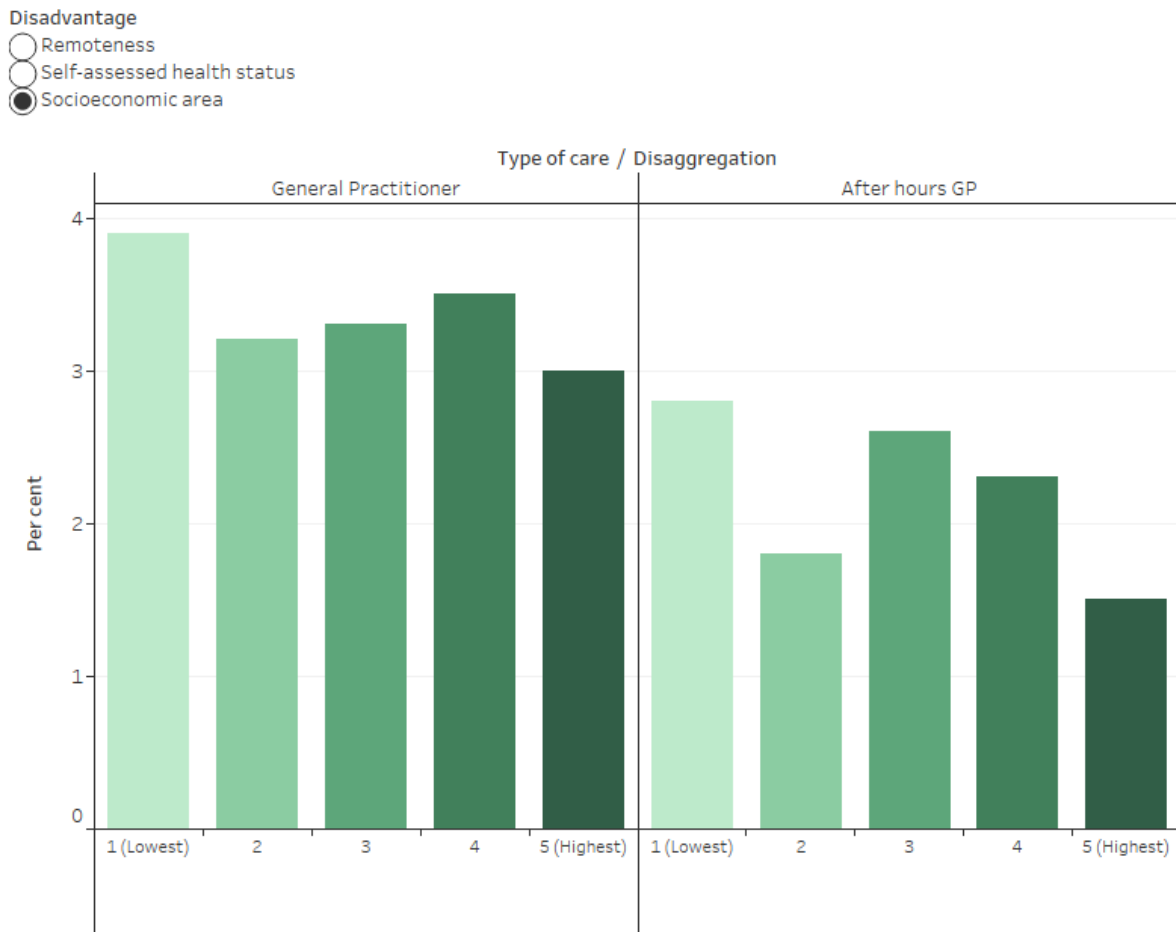
Notes
1. Socioeconomic areas are based on area of residence using the ABS Index of Relative Socio-Economic Disadvantage.
2. Remoteness is classified according to the Australian Statistical Geography Standard (ASGS) 2016 Remoteness Areas structure based on area of residence.
Source: ABS 2019b.
http://www.aihw.gov.au/

Waiting times

In general, most people (81%) reported having acceptable waiting times to get an appointment with a GP in 2018–19. Only 1 in 5 people (19%) reported waiting longer than acceptable, but this varied by age group. People aged 65 and over were most likely to report experiencing acceptable waiting times, while younger age groups (25–54) were more likely to feel they waited longer than felt acceptable (Figure 5).

Figure 5: Acceptable wait times to get an appointment with a GP, people aged 15 and over, 2018–19
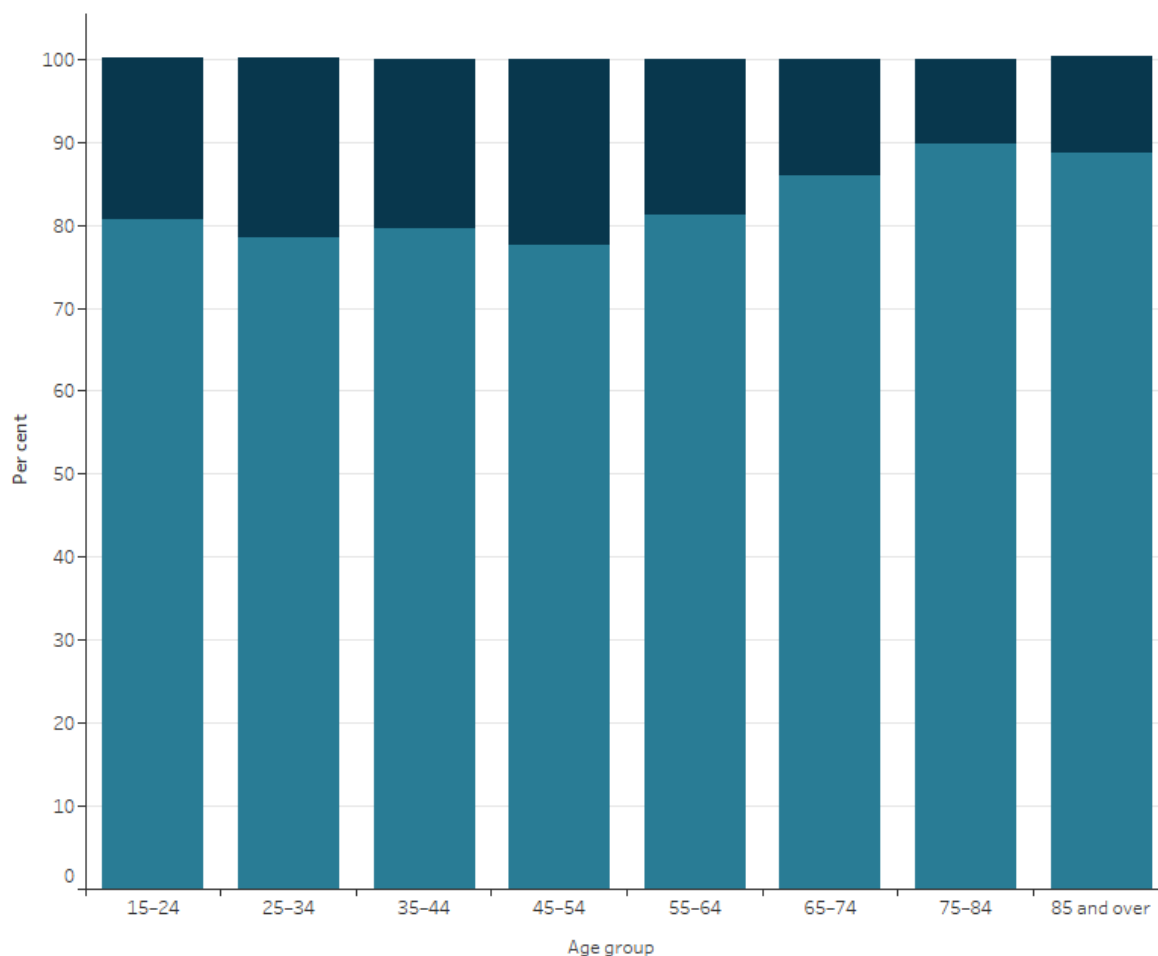
Acceptable wait times
- ■ Waited longer than felt acceptable to get an appointment with a GP
- ■ Did not wait longer than felt acceptable to get an appointment with a GP

Source: ABS 2019b.
http://www.aihw.gov.au/

Challenges and strategies

The Australian health care system faces ongoing challenges including the provision of effective, equitable and coordinated care, an ageing population, workforce pressures, rising prevalence of risk factors (for example, Overweight and obesity and Insufficient physical activity), and the increased incidence of chronic disease and multiple chronic diseases (see Chronic conditions and comorbidity). Various initiatives aim to address these challenges.

National Health Plan

In August 2019, the Hon. Greg Hunt, MP, Minister for Health, announced the Government's Long Term National Health Plan. The plan aims to build a 'mentally and physically healthy

Australia', with mental health being rated equally alongside physical health. The plan also aims to facilitate better support to manage and prevent conditions such as cancer, diabetes, heart disease and mental illness.

Priorities for primary health care include implementing a 10-year primary health care plan and supporting more flexible care models to improve preventive care and management of chronic issues (Department of Health 2019b).

Health Care Homes

The intent of the Health Care Homes (HCH) program is to deliver coordinated, team-based care for the management of an eligible patient's chronic conditions. The program bases care on the needs and goals of the patient, to facilitate a partnership between the patient, their families and carers, their treating general practitioner and health care team.

Stage 1 of the HCH trial began on 1 October 2017. In December 2018, the Australian Government announced the extension of the program for an additional 18 months to 30 June 2021.

Some of the data captured during the trial will be collected specifically for a program evaluation. The evaluation stream data will be provided to the HCH program evaluators, Health Policy Analysis, by patients, HCHs, Primary Health Networks, the Department of Human Services, the Department of Health, the AIHW and state and territory governments (Department of Health 2019e).

Practice Incentives Program Quality Improvement

The Practice Incentives Program (PIP) provides incentives for general practices to carry out continuous improvement and quality care activities, enhance capacity and improve access and health outcomes for patients. From 1 August 2019, there are 8 incentives under the PIP including teaching; eHealth; Indigenous health; after hours; aged care access; the procedural general practitioner payment; rural loading and a new PIP Quality Improvement (QI) incentive.

General practices enrolled in the PIP QI Incentive commit to implementing continuous quality improvement activities that support them in their role of managing their patients' health. They also commit to electronically submitting the PIP Eligible Data Set to their local PHN quarterly (Department of Health 2019c).

The incentives program builds on the 68% of general practices that already voluntarily share their practice data with PHNs for quality improvement and population health purposes (Department of Health 2019d).

Improving primary health care data

Primary health care is a vital component of Australia's health care system, encompassing a broad range of professions and services. Despite this, the availability of primary health

care system data is limited. This limits the ability to assess the positive impact of this sector on the health of Australians and/or identify where improvements are needed. The AIHW is working to improve primary health care data, through the development of the National Primary Health Care Data Asset.

Where do I go for more information?

For more information on primary health care, see:

* [Primary health care data development](#)

* [Healthy community indicators, Primary health care](#)

* [Rural & remote health, Access to health care](#)

* Department of Health [Australia's Long Term National Health Plan 2019](#)

* Department of Health [National Rural Health Commissioner](#)

Visit [Primary health care](#) for more on this topic.

References

ABS (Australian Bureau of Statistics) 2014. [Patient experiences in Australia: summary of findings, 2013–14](#). ABS cat. no. 4839.0. Canberra: ABS.

ABS 2015. [Patient experiences in Australia: summary of findings, 2014–15](#). ABS cat. no. 4839.0. Canberra: ABS.

ABS 2016. [Patient experiences in Australia: summary of findings, 2015–16.](#) ABS cat. no. 4839.0. Canberra: ABS.

ABS 2017a. [National Health Survey: health service usage and health related actions, Australia, 2014–15.](#) ABS cat. no. 4364.0.55.002. Canberra: ABS.

ABS 2017b. [Patient experiences in Australia: summary findings, 2016–17](#). ABS cat. no. 4839.0. Canberra: ABS.

ABS 2018. [Patient experiences in Australia: summary findings, 2017–18](#). ABS cat. no. 4839.0. Canberra: ABS.

ABS 2019a. [Australian demographic statistics, June 2019](#): Table 4. Estimated resident population, states and territories (number). ABS cat. no. 3101.0. Canberra: ABS.

ABS 2019b. [Patient experiences in Australia: summary findings, 2018–19](#). ABS cat. no. 4839.0. Canberra: ABS.

AHPA (Allied Health Professions Australia) 2020b. [Access to allied health services](#). Viewed 17 March 2020.

AHPA 2020a. [What is allied health?](#) Viewed 14 February 2020.

AIHW (Australian Institute of Health and Welfare) 2018. [Patients' out-of-pocket spending on Medicare services 2016–17](#). Cat. no. HPF 35. Canberra: AIHW.

AIHW 2019a. Aboriginal and Torres Strait Islander health organisations: online services report—key results 2017–18. Cat. no. IHW 212. Canberra: AIHW.

AIHW 2019b. Developing a National Primary Health Care Data Asset: consultation report. Cat. no. PHC 1. Canberra: AIHW.

AIHW 2019c. Health expenditure Australia 2017–18. Cat. no. HWE 077. Canberra: AIHW.

AIHW 2019d. Medicare-subsidised GP, allied health and specialist health care across local areas: 2013–14 to 2017–18. Cat. no. PHE 254. Canberra: AIHW. Viewed 28 February 2020.

AIHW 2020. Coordination of health care: experiences of barriers to accessing health services among patients aged 45 and over. Cat. no. CHC 04. Canberra: AIHW.

AMA (Australian Medical Association) 2017. General Practice in Primary Health Care—2016. Viewed 30 January 2020.

APRA (Australian Prudential Regulation Authority) 2019. Private Health Insurance Benefits Trends September 2019. Viewed 6 December 2019.

Department of Health 2018a. Fact sheet: Primary Health Care. Australian Government. Canberra: Department of Health. Viewed 19 September 2019.

Department of Health 2018b. National Rural Generalist Taskforce: advice to the National Rural Health Commissioner on the Development of the National Rural Generalist Pathway December 2018. Canberra: Department of Health. Viewed 1 October 2019.

Department of Health 2019a. Annual Medicare Statistics—financial year 1984−85 to 2018−2019 . Canberra: Department of Health. Viewed 26 September 2019.

Department of Health 2019b. Australia's Long Term National Health Plan: to build the world's best health system. Canberra: Department of Health. Viewed 5 December 2019.

Department of Health 2019c. Fact sheet: Improvement measures. Canberra: Department of Health. Viewed 17 February 2020.

Department of Health 2019d. Fact Sheet: What practices need to know. Canberra: Department of Health. Viewed 4 October 2019.

Department of Health 2019e. Health Care Homes: Handbook for general practice and Aboriginal Community Controlled Health Services, Version 1.7. Canberra: Department of Health. Viewed 31 January 2019.

Department of Health 2020. COVID-19 National Health Plan – Primary Care Package – MBS Telehealth Services and Increased Practice Incentive Payments Services. Australian Government: Canberra: Department of Health. Viewed 6 April 2020.

DHS (Department of Human Services) 2019. Medicare Australia Statistics. Canberra: DHS. Viewed 5 December 2019.

NPS MedicineWise 2019. General practice insights report July 2017–June 2018. Sydney: NPS MedicineWise. Viewed 5 December 2019.

OECD (Organisation for Economic Co-operation and Development) 2017. Health at a glance 2017: OECD indicators. Paris: OECD. Viewed 5 December 2019.

RACGP (The Royal Australian College of General Practitioners) 2019. General practice: health of the nation 2019. Melbourne: RACGP. Viewed 25 November 2019.

Swerissen H & Duckett S 2018. Mapping primary care in Australia. Grattan Institute. Viewed 6 September 2019.

Private health insurance

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https://www.aihw.gov.au/reports/australias-health/private-health-insurance

In Australia, private health insurance is a voluntary form of insurance that provides financial assistance for the cost of specified health services. Depending on the type of cover, private health insurance can fully or partly cover the costs of hospital services and or the costs of other general treatment health services, such as physiotherapy and dental treatment (PHIO 2019).

The role of private health insurance

For Australians wishing to access private health care, the private health insurance system helps them mitigate the risks associated with, potentially large, unexpected health care costs. Unlike other types of insurance such as car and life insurance, the Australian private health insurance system is not 'risk-rated' but is 'community rated'. This means that insurance cannot be refused to any person, regardless of their risk profile (such as having pre-existing conditions or smoking) and likely usage of health services (Department of Health 2019a). It also means that private health insurers are not allowed to charge people more for the same level of cover just because they are more likely to use the health services covered by their policy.

Types of cover

Hospital health insurance cover is generally for the cost of in-hospital treatment and other hospital costs such as accommodation and theatre fees, in either public or private facilities.

General treatment health insurance cover is generally for non-hospital medical services that are not covered by Medicare, such as dental, optical, physiotherapy, other therapies and ambulance. It is also known as 'ancillary' or 'extras' insurance.

In Australia, private health insurance cannot cover services that are provided outside hospital and are listed on the Medicare Benefits Schedule (MBS) (Department of Health 2019b). This includes some services provided by general practitioners and medical specialists, as well as diagnostic testing.

When a person signs up to private health insurance or changes their private health insurance policy, they may be required to serve a waiting period before they can claim benefits under the new policy. The maximum waiting periods an insurer can impose are regulated by legislation.

Who has private health insurance?

At June 2019, 11.2 million Australians (44% of the population) had some form of private patient hospital cover, and 13.6 million (53%) had some form of general treatment cover (APRA 2019).

The proportion of the population covered by some form of hospital cover (including those covered by a combined hospital and general treatment policy) was lowest for those aged 25–29: 26% of females were covered, and 21% of males (Figure 1). As an incentive to encourage more young people to take out private health insurance, from 1 April 2019 insurers are able to offer up to 10% discount on premiums for people aged 18–25, and similar discounts to those aged 26–29 (Department of Health 2019c).

The proportion of the population covered increased from age 30, when 'lifetime health-care cover' loadings apply (see box below). The highest proportion of males covered was those aged 65–69 (55%) and for females was 70–74 (58%) (APRA 2019).

Figure 1: Demographics of insured persons at June 2019, and as a proportion of the Australian population as at December 2018

Select view:
○ Number ('000s)
● Proportion
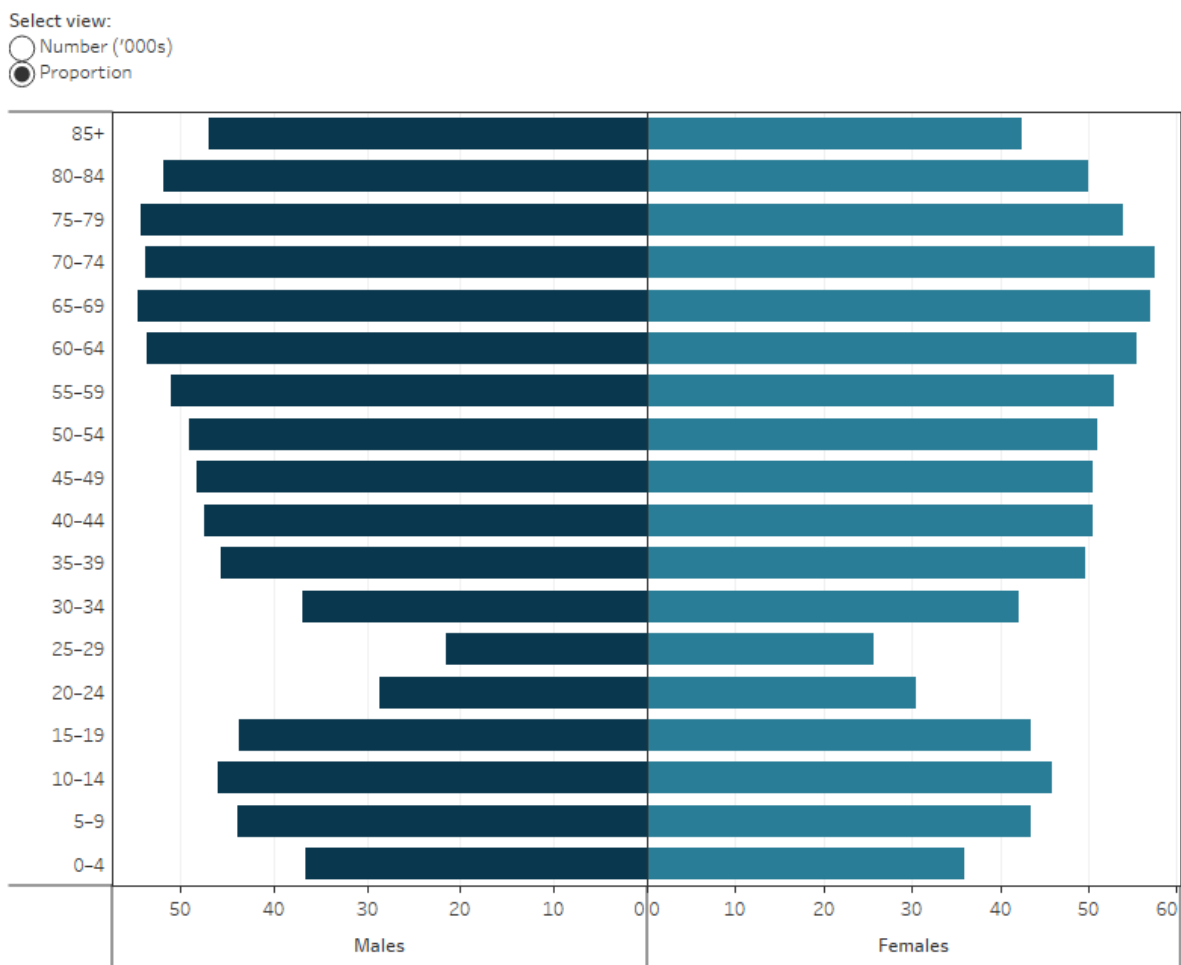
Note: This figure includes all persons covered by a hospital treatment policy, including those covered by a combined hospital and general treatment policy.
Sources: APRA 2019; ABS 2019a.
http://www.aihw.gov.au/

People living in *Major cities* are the most likely to have private health insurance (ABS 2019b). In 2019, the Australian Government introduced reforms to allow private health insurers to offer travel and accommodation benefits for hospital policies, aimed at benefiting patients living in regional and rural areas who need to travel for treatment (Department of Health 2017).

Government surcharges and incentives

Medicare levy

The Medicare levy partially funds services provided through Medicare. The levy is 2.0 % of a person's taxable income. An additional Medicare levy surcharge is applied if people have taxable income above a specified level and do not have private patient hospital cover. The

surcharge is levied on a scale between 1.0% and 1.5% depending on taxable income (ATO 2019).

Private health insurance rebate

The Australian Government offers a private health insurance rebate to subsidise the costs of private health insurance premiums. Introduced in 1999, the rebate applies to policies for hospital, general treatment and or ambulance cover. In 2017–18, the Australian Government spent $5.9 billion on the private health insurance premium rebate. It should be noted that this rebate amount differs from figures published by other organisations, as the former removes management expenses and other costs not directly related to the provision of health goods and services (AIHW 2019a).

There are 2 ways to claim rebates on private health insurance premiums:

- People pay the full premium, and claim the rebate as a tax offset at the end of the financial year.

- Insurers offer members a reduced premium, for which they are reimbursed directly from the Australian Government (PHIO 2019).

Lifetime Health Cover

Lifetime Health Cover (LHC) aims to encourage younger people to buy and maintain private hospital insurance cover. People who take up health insurance early in their adult life will avoid paying the LHC loading. Those who take up insurance later in life will pay a 2.0% loading on top of their premium for every year they are aged over 30. LHC applies to hospital cover only (PHIO 2019).

Over recent decades, the Australian Government has introduced a range of initiatives to encourage individuals to take out private health insurance. The number of people with private health insurance hospital cover increased 33% in 2000 when the private health insurance rebate and LHC changes were introduced, and continued increasing from 2004–05 to 2016–17. In 2017–18, private health insurance membership (with hospital cover) declined for the first time since 2003–04 (APRA 2019). The proportion of population with hospital cover decreased from 2015–16 to 2017–18. The net benefits paid by private health insurers (both total and per person covered) continue to rise (Figure 2) (AIHW 2019a).

Figure 2: Private health insurance membership, total net benefits paid and net benefits paid per person covered, 1997–98 to 2017–18

Select view
○ Number of people ('000s)
● Proportion of population with hospital cover (%)
○ Total net benefits paid ($ million)
○ Net benefits paid per person covered ($)
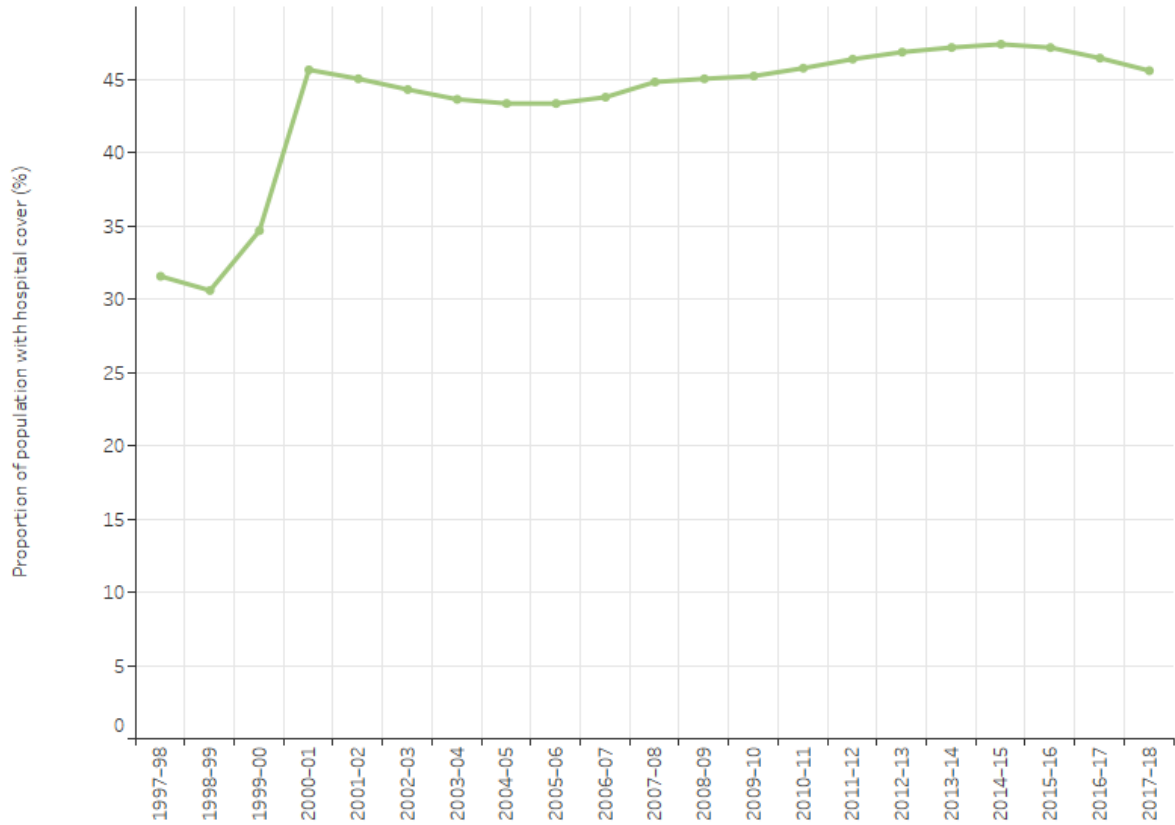
Note: Membership is reported in calendar years for hospital cover; expenditure is calculated in financial year.
Sources: APRA 2019; AIHW 2019b.
http://www.aihw.gov.au/

What services do private health insurers cover?

General treatment

In 2018–19, dental (53%) and optical (17%) services were the 2 largest areas of expenditure by private health insurers for general treatment (Figure 3) (APRA 2019).

Medical services in hospitals

In 2018–19, the largest areas of expenditure by private health insurers for hospital services were anaesthesia (25%) and medical specialists, including consultant physicians and psychiatrists (9.2%) (Figure 3).

Figure 3: Proportion of benefits paid by private health insurers by service type, hospital and general treatment cover, 2018–19
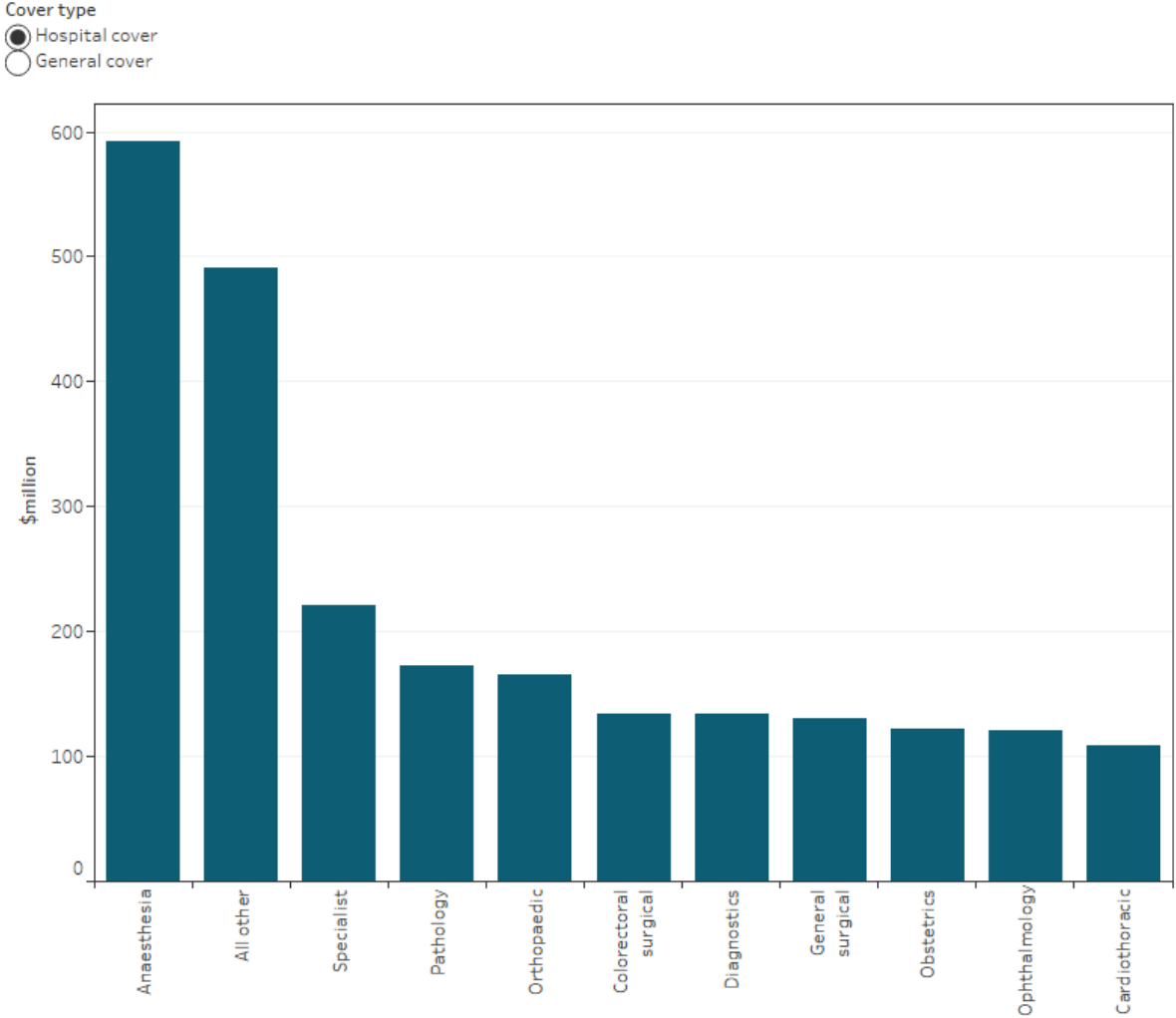
Source: APRA 2019.
http://www.aihw.gov.au/

In 2017–18, about 1 in 8 (13%) hospitalisations in public hospitals were for patients who used private health insurance to fund all or part of their admission. During the same period, more than 4 in 5 (83%) hospitalisations in private hospitals were funded by private health insurance (AIHW 2019b).

The number of private patients being treated in public hospitals has increased in recent years (2012–13 to 2015–16). Between these years, private admissions in public hospitals have grown faster than the rate of admissions for private hospitals (8.3% and 4.6% respectively, on average) (Figure 4) (AIHW 2017).

Figure 4: Private health insurance funded separations, by public and private hospitals, 2007–08 to 2015–16

Measure
⊙ Number of separations ('000s)
◯ Yearly growth in number of separations (per cent)

■ Private hospitals   ■ Public hospitals
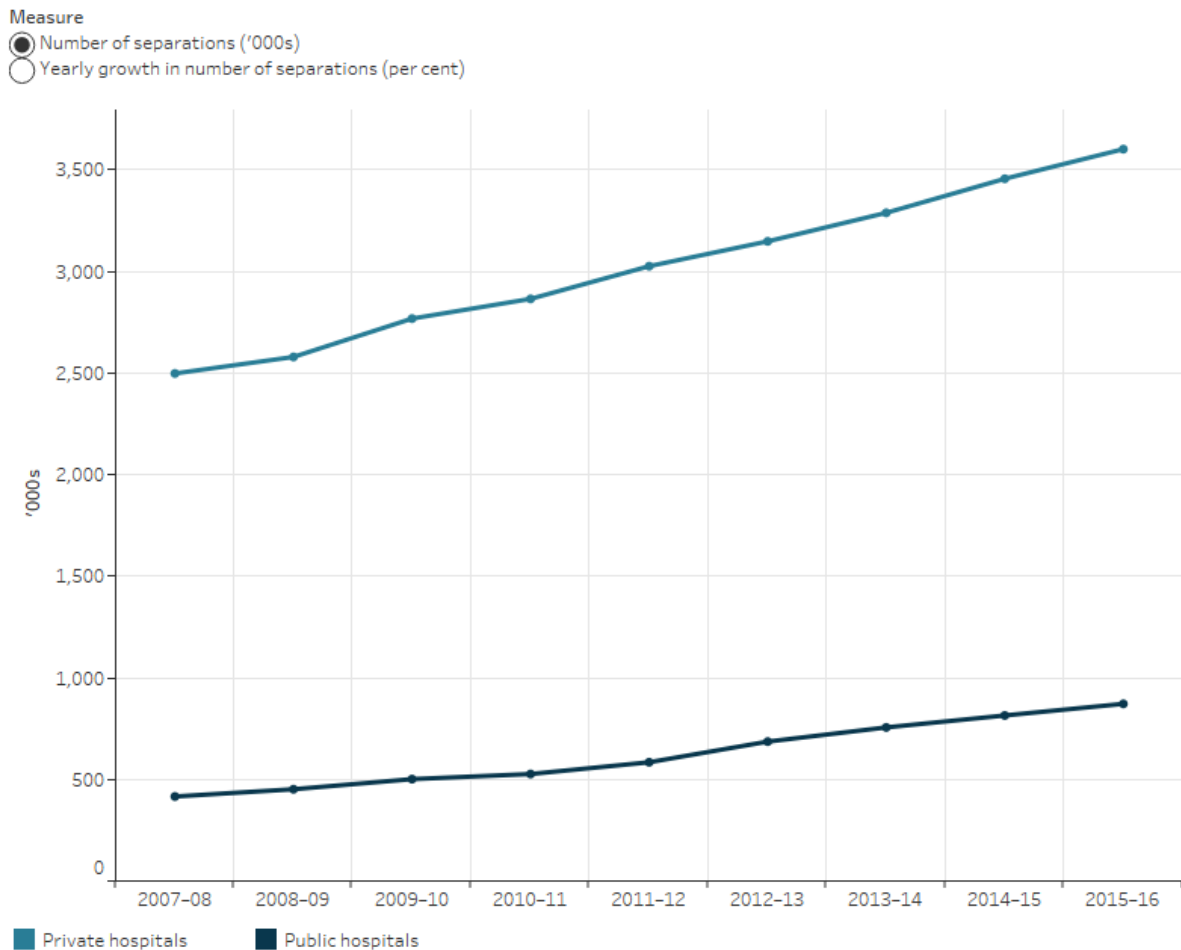
Source: AIHW 2017.
http://www.aihw.gov.au/

How much do private health insurers spend?

In 2017–18, private health insurance funds spent $16.6 billion, or 9.0% of the total of $185 billion spent on health across Australia (AIHW 2019b).

The largest area of spending was on private hospitals ($8.2 billion), followed by primary health care ($2.9 billion) (including $2.0 billion on dental services, $887 million on other health practitioners), and other services (including patient transport services, aids and appliances, and administration, $2.5 billion). This pattern of spending by private health insurers has been consistent over the past decade (Figure 5).

Spending data in this section

This section presents health spending by private health insurers on health services. This excludes the private health insurance rebate amount provided by the Australian Government as this is considered Australian Government spending. In this context, it also does not count spending by individuals and families on private health insurance premiums as direct health spending. This approach is consistent with data presented in the AIHW's *Health expenditure Australia 2017–18* report. As a result of this approach, the results presented here may differ from those published by the Australian Prudential Regulation Authority (APRA), the Australian Taxation Office (ATO) and other sources.

Figure 5: Proportion of private health insurance provider health expenditure by area of expenditure, current prices, 1997–98 to 2017–18
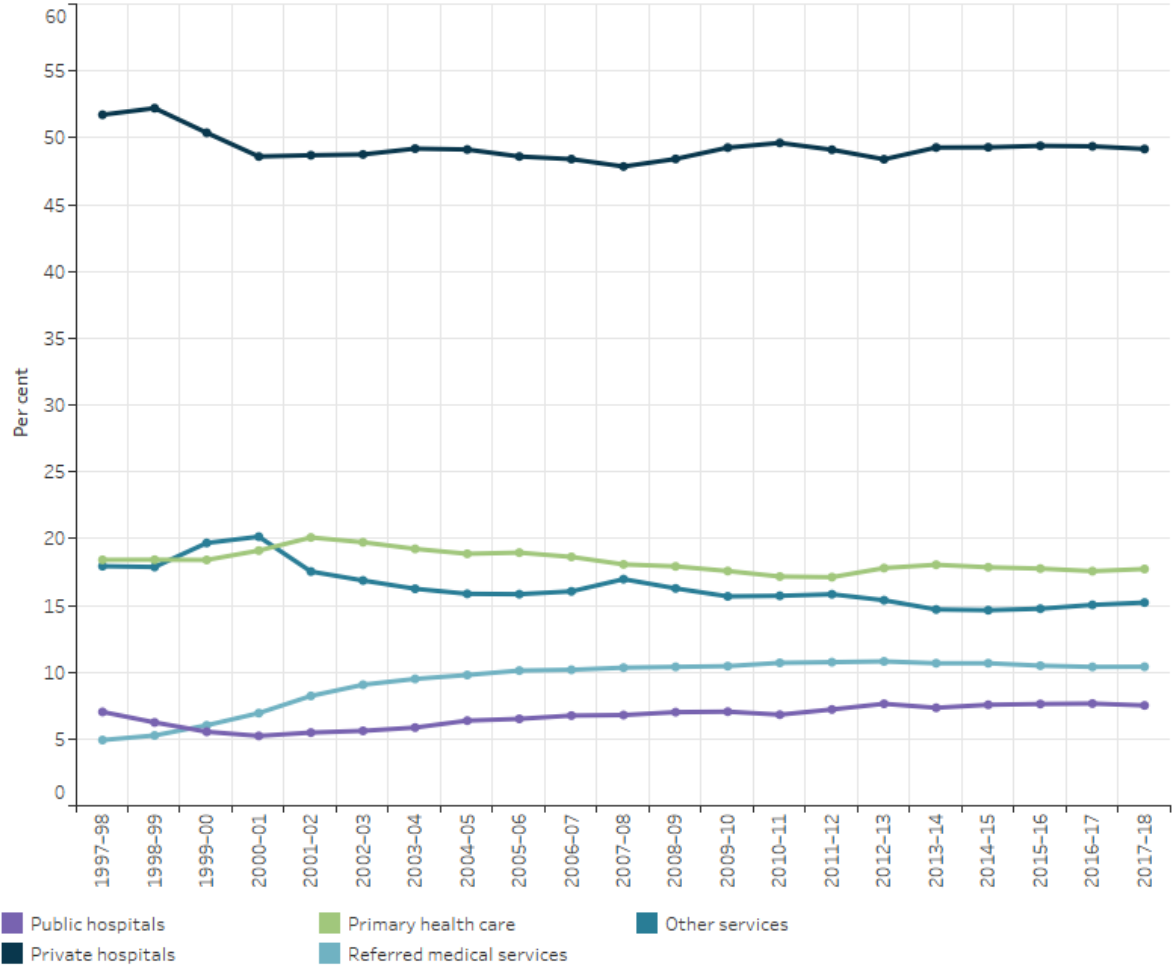
Note: This figure presents net expenditure, which is less the proportion of the private health insurance rebate that can be attributed to health spending.
Source: AIHW 2019b.
http://www.aihw.gov.au/

Across Australia, private health insurers spent an average of $1,470 per person covered by a hospital treatment policy (AIHW 2019a). Spending was highest in South Australia

($1,607), and lowest in the Australian Capital Territory ($855), and has increased in all states and territories since 2007–08.

Where do I go for more information?

For more information on private health insurance, see:

- Health expenditure Australia 2017–18
- Admitted patient care 2017–18
- Australian Prudential Regulation Authority Quarterly private health insurance statistics
- Department of Health Private health insurance

References

ABS (Australian Bureau of Statistics) 2019a. Australian demographic statistics, December 2018. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2019b. Patient experiences in Australia: summary of findings, 2017–18. ABS cat. no. 4839.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2017. Private health insurance use in Australian hospitals, 2006–07 to 2015–16. Cat. no. HSE 196. Canberra: AIHW.

AIHW 2019a. Health expenditure Australia 2017–18. Cat. no. HWE 077. Canberra: AIHW.

AIHW 2019b. Admitted patient care 2017–18. Cat. no. HSE 225. Canberra: AIHW.

APRA (Australian Prudential Regulation Authority) 2019. Quarterly private health insurance statistics. Sydney: APRA. Viewed 28 October 2019.

ATO (Australian Taxation Office) 2019. Medicare levy. Canberra: ATO. Viewed 1 November 2019.

Department of Health 2017. Private health insurance reforms: improved access to travel and accommodation for general and rural consumers. Canberra: Department of Health. Viewed 28 October 2019.

Department of Health 2018. Private health insurance reforms: private patients in public hospitals. Canberra: Department of Health. Viewed 28 October 2019.

Department of Health 2019a. Private health insurance laws. Canberra: Department of Health. Viewed 28 October 2019.

Department of Health 2019b. What is covered by private health insurance? Canberra: Department of Health. Viewed 16 January 2020.

Department of Health 2019c. Private health insurance reforms: discounts for 18 to 29 year olds. Viewed 28 October 2019.

PHIO (Private Health Insurance Ombudsman) 2019. How health insurance works. Canberra: PrivateHealth.gov.au. Viewed 18 October 2019.

Safety and quality of health care

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https://www.aihw.gov.au/reports/australias-health/safety-and-quality-of-health-care

The safety and quality of the care provided in Australia's health system is of utmost importance to all patients, their families and carers. A safe and high-quality health system provides the most appropriate and best-value care, while keeping patients safe from preventable harm.

Definitions

Safety: the avoidance or reduction to acceptable limits of actual or potential harm from health care management or the environment in which health care is delivered (NHIPPC 2017).

Quality: the degree to which health services for individuals and populations increase the likelihood of desired health outcomes, and are consistent with current professional knowledge (ACSQHC 2019a).

Informally, the term 'safety and quality' is often summarised as: the right care, in the right place, at the right time and cost. Safety and quality is important in all areas of the health system (see the Health system domain in Australia's health snapshots) and across all population groups (see Culturally safe health care for Indigenous Australians).

It is estimated that around 15% of total health expenditure in OECD countries is spent on treating patient safety failures, many of which could have been avoided (Slawomirski et al. 2018).

Improving safety and quality

A range of organisations act to improve safety and quality of health care. They may focus their efforts nationally, at the state or territory level (for example, health departments), at the service level (for example, individual hospitals), at the clinical level or for specific areas of health care (health professional associations). At a national level, the Australian Commission on Safety and Quality in Health Care (the Commission) provides leadership to improve the safety and quality of health care in Australia.

The Australian Commission on Safety and Quality in Health Care

The Commission leads and coordinates national improvements in health care safety and quality. It works in partnership with patients, carers, clinicians, the Australian and state and

territory health systems, the private sector, managers and health care organisations to achieve a safe, high-quality and sustainable health system.

Key functions of the Commission include: developing national safety and quality standards, developing clinical care standards to improve the implementation of evidence-based health care, providing guidance on how to establish and develop clinical quality registries, coordinating work in specific areas to improve outcomes for patients, and providing information, publications and resources about safety and quality. The Commission works in 4 priority areas (ACSQHC 2019a):
 - patient safety

- partnering with patients, consumers and communities

- quality, cost and value

- supporting health professionals to provide care that is informed, supported and organised to deliver safe and high-quality care.

Standards and accreditation

Safety and quality standards are a set of statements which describe the level of care consumers can expect from a health service. They aim to protect the public from harm and improve the quality of care provided (ACSQHC 2019b). The second edition of the National Safety and Quality Health Service (NSQHS) Standards has 8 standards. Figure 1 lists the 8 standards.

Health services (such as public and private hospitals, day procedure hospitals, private dental practices, transport and community health services) are assessed and must comply with these standards to become accredited (ACSQHC 2019b). State and territory health departments determine which health service organisations must be assessed against the NSQHS Standards.

Figure 1. National Safety and Quality Health Service (NSQHS) Standards

Source: Adapted from the Australian Commission on Safety and Quality in Health Care 2019.

There are a number of other sector-specific standards, some of which are still being developed, that apply in health service organisations. These include:

- the National Safety and Quality Primary Health Care Standards
- National Safety and Quality Standards for Digital Mental Health Services
- Clinical Care Standards.

The Australian Health Practitioner Regulation Agency (AHPRA) is another key national agency which ensures only qualified and trained health professionals deliver health care. Along with national boards (such as the Medical Board of Australia), they support the National Registration and Accreditation Scheme (see Health workforce) which applies to accreditation and compliance programs for health service practitioners. Complaints or concerns about health practitioners and students are addressed through AHPRA. AHPRA also supports the auditing of health professionals against standards and policies to ensure public safety (AHPRA 2019).

Performance and safety reporting

Indicators of safety and quality in the Australian health care system are reported through the Australian Health Performance Framework (AHPF) (AIHW 2019a), MyHospitals (AIHW 2019b) and at a variety of other national, state and territory and local levels, including within individual services and clinical teams.

One measure of safety is the rate of *Staphylococcus aureus* bloodstream (SAB) infections (AIHW 2020). In 2018–19 all jurisdictions had public hospital SAB rates below the national benchmark of 2.0 cases per 10,000 patient days (Figure 2).

The Australian Health Ministers' Advisory Council (AHMAC) has endorsed a new national benchmark for healthcare-associated SAB of 1.0 per 10,000 patient days for public hospitals. The revised benchmark will be implemented from 1 July 2020.

Figure 2: Staphylococcus aureus bacteraemia (SAB) in public hospitals, by Methicillin resistant (MRSA) and Methicillin sensitive (MSSA) cases, 2018–19
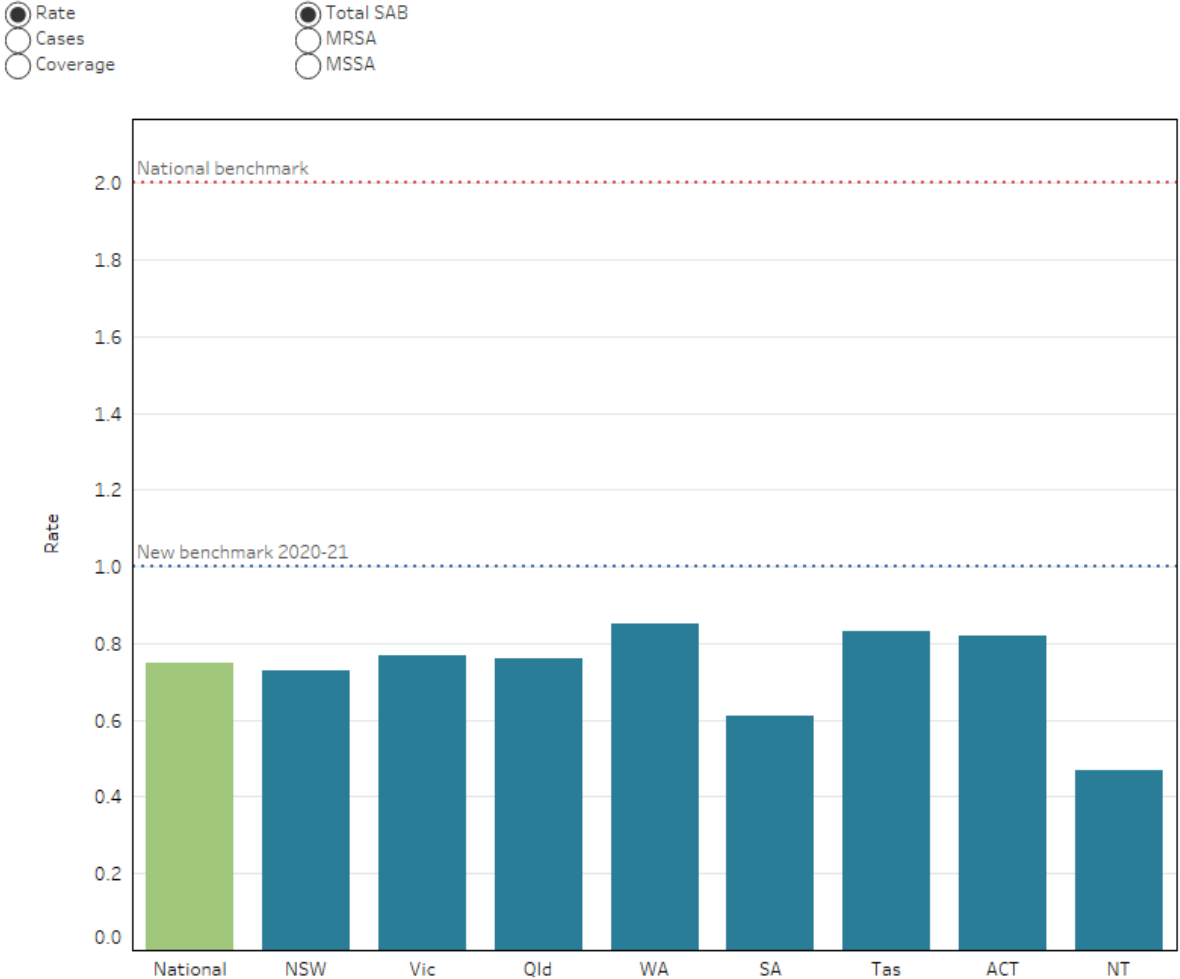
Note: For more information on data quality, including collection and data limitations, see METeOR on the AIHW website.
Source: AIHW National *Staphylococcus aureus* Bacteraemia Data Collection.
http://www.aihw.gov.au/

Another key measure of safety and quality under the AHPF is the rate of potentially avoidable deaths. Potentially avoidable deaths are deaths below the age of 75 from conditions that are potentially preventable through primary or hospital care (AIHW 2019c). This includes events such as surgical complications as well as preventable deaths that could have been addressed through screening, good nutrition and healthy habits such as exercise.

The rate of potentially avoidable deaths is higher in regional areas than in metropolitan areas (Figure 3). This could be explained by a higher proportion of people with health risk factors in regional areas, or differences in the quality of care. Differences in the

quality of care highlight the importance of nationally consistent standards and transparent performance reporting.

Figure 3: Number of potentially avoidable deaths per 100,000 people, by Primary Health Network area, 2015–17

Metropolitan		Rate
Metropolitan	Northern Sydney	59
	Eastern Melbourne	75
	Central and Eastern Sydney	80
	Australian Capital Territory	86
	South Eastern Melbourne	87
	Perth North	91
	All metropolitan PHN areas	94
	Gold Coast	95
	North Western Melbourne	95
	Western Sydney	97
	Brisbane North	99
	South Western Sydney	100
	Adelaide	102
	Brisbane South	105
	Perth South	107
	Nepean Blue Mountains	112
	Hunter New England and Central Coast	127
National	Australia	104
Regional	Western Victoria	115
	South Eastern NSW	117
	Central Queensland, Wide Bay and Sunshine Coast	118
	Country SA	119
	Gippsland	121
	Murray	121
	North Coast	121
	All regional PHN areas	129
	Darling Downs and West Moreton	131
	Murrumbidgee	131
	Tasmania	133
	Northern Queensland	136
	Country WA	143
	Western NSW	155
	Western Queensland	192
	Northern Territory	213

Rate per 100,000 persons

Notes
1. Rates were age-standardised to the 2001 Australian Standard Population to facilitate comparisons between populations with different age structures.
2. Data for 2009–2011 to 2015–2017 were based on 2016 geography boundaries (2016 Australian Statistical Geography Standard).
Source: AIHW National Mortality Database, 2009–2017.
http://www.aihw.gov.au/

An emerging area of safety and quality reporting relates to Patient Reported Experience Measures (PREMs) and Patient Reported Outcome Measures (PROMs) (see Patient experience of health care). One example is the Your Experience of Service survey, developed by the Palliative Care Outcomes Collaboration and reported in AIHW's Mental health services in Australia. A range of other PROMs and PREMs development work is occurring, including a project by the Australian Commission on Safety and Quality in Health Care.

Variation in practice

The Australian Atlas of Health Care Variation maps differences in health care use according to where people live. Health care variation is clearly appropriate where it

reflects difference in patients' needs or preferences. However, when a difference in use does not reflect these differences, it is considered unwarranted variation and represents an opportunity for the health system to improve.

Since 2015, 3 atlases have been published, each identifying variations in the use of many treatments (for example, antibiotics), diagnostic procedures (for example, endoscopy) and surgical procedures (for example, knee arthroscopy). The most recent Atlas (ACSQHC & AIHW 2018) found, for example, that antibiotic dispensing for children differed across regions in Australia, with the rate of prescriptions in Queensland (102,339 per 100,000 children) higher than that in Tasmania (71,472 per 100,000 children) (Figure 4).

Overuse of antibiotics can contribute to bacterial resistance, meaning the medicine is less effective in treating infections in the future (ACSQHC & AIHW 2018). Variation in antibiotic dispensing for children across Australia may be explained by geographical differences in access to care, rates of underlying disease, clinical decision making or socioeconomic status and health literacy (ACSQHC & AIHW 2018).

Figure 4: Number of PBS prescriptions dispensed for antibiotics per 100,000 children aged 9 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2016–17

Select SA3 name
No items highlighted
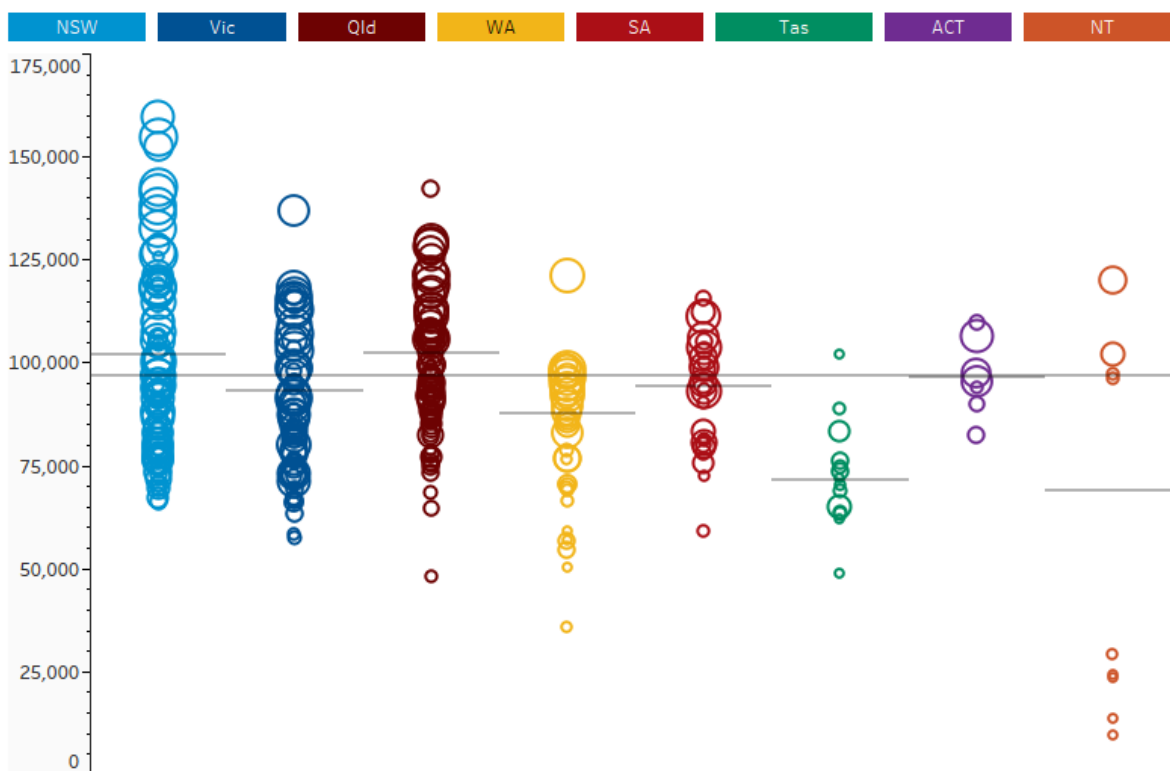
Notes
1. SA3s are not presented for those suppressed due to a small number of prescriptions dispensed and/or population in an area.
2. The size of a circle indicates the number of prescriptions dispensed in that SA3.
3. Rates in remote geographical areas with high proportions of Aboriginal and Torres Strait Islander children are likely to be artificially low because the PBS dataset does not include data from Aboriginal health services, which supply medicines under the S100 scheme (an alternative arrangement for supplying PBS medicines).
Source: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2016.
http://www.aihw.gov.au/

International comparisons

Australia monitors the safety and quality of its health services relative to other countries through participation in the Organisation for Economic Co-operation and Development (OECD) Health Care Quality Indicators project. The OECD publishes selected data in its Health at a glance series (OECD 2019). Table 1 lists the indicators related to patient safety against which Australian data were reported for the most recent OECD collection—for all indicators Australia had poorer performance outcomes than the OECD average.

See International comparisons of health data.

Table 1: OECD selected patient safety indicators, Australia (2016) and OECD average (2017, or nearest year)

Indicator	Australia	OECD average	Number of OECD countries
Rate per 100,000 surgical hospitalisations			
Foreign body left in during procedure	8.2	5.2	19
Post-operative deep vein thrombosis in hip and knee surgeries	1,006.3	259.7	21
Post-operative pulmonary embolism in hip and knee surgeries	535.2	267.3	21
Rate per 100,000 vaginal deliveries			
Obstetric trauma— vaginal delivery with instrument	6.8	5.5	23
Obstetric trauma— vaginal delivery without instrument	2.5	1.4	22
Defined daily dose per 1,000 population, per day			
Overall volume of antibiotics prescribed (all)	23.5	18.3	31
Overall volume of antibiotics prescribed (2nd line)	4.8	3.4	31

Note: Caution should be taken in interpreting these findings due to differences in data capture and reporting that may influence the reported rates.
Source: OECD 2019.

Where do I go for more information?

For more information on safety and quality of health care, see:

- Australian Health Performance Framework
- MyHospitals
- Bloodstream infections associated with hospital care 2018–19
- Australian Commission on Safety and Quality in Health Care

Visit Health care quality & performance for more on this topic.

References

ACSQHC (Australian Commission on Safety and Quality in Health Care) & AIHW (Australian Institute of Health and Welfare) 2018. The third Australian atlas of health care variation. Sydney: ACSQHC.

ACSQHC 2019a. The state of patient safety and quality in Australian hospitals 2019. Sydney: ACSQHC.

ACSQHC 2019b. Standards. Sydney: ACSQHC.

AHPRA (Australian Health Practitioner Regulation Agency) 2019. What we do. Canberra: AHPRA.

AIHW (Australian Institute of Health and Welfare) 2019a. Australia's Health Performance Framework. Canberra: AIHW.

AIHW 2019b. MyHospitals. Canberra: AIHW.

AIHW 2019c. Life expectancy and potentially avoidable deaths in 2015–2017. Cat. no. HPF 45. Canberra: AIHW.

AIHW 2020. Bloodstream infections associated with hospital care 2018–19. Cat. no. HSE 217. Canberra: AIHW.

NHIPPC (National Health Information and Performance Principal Committee) 2017. The Australian Health Performance Framework.

NHMRC (National Health and Medical Research Council) 2010. Australian Guidelines for the Prevention and Control of Infection in Health Care. Australian Government.

OECD (Organisation for Economic Co-operation and Development) 2019. Health at a glance 2019: OECD indicators. Paris: OECD.

Slawomirski L, Auraaen A & Klazinga N 2018. The economics of patient safety: strengthening a value-based approach to reducing patient harm at a national level. OECD Health Working Papers no. 96. Paris: OECD Publishing.

Specialist, pathology and other diagnostic services

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/specialist-pathology-and-other-diagnostic-services

Specialists provide diagnostic and treatment services in a specific area of medicine, generally for a particular disease or body system. They also support patients in managing health conditions. They can work in private clinics and in hospital admitted patient and outpatient settings, and usually require a patient referral from a medical practitioner or another health practitioner.

Common referred specialties include: dermatology, cardiology, obstetrics, gynaecology, neurology, oncology, paediatrics and rheumatology. All specialists have completed advanced training, and must be registered with the Australian Health Practitioner Regulation Agency to practise in Australia.

Pathology, diagnostic imaging and other diagnostic services assist medical and other health practitioners to describe, screen, diagnose and monitor a patient's illness or injury. Patients may receive such services in hospital, but for services provided in non-hospital settings, patients are typically referred to these services by a medical practitioner.

Pathology services include a wide range of tests on patient samples, such as blood or body tissue. Diagnostic imaging and other diagnostic services include: radiography (X-ray), ultrasound, computed tomography (CT scan), nuclear medicine and magnetic resonance imaging (MRI). These services are performed by qualified technical staff in conjunction with registered medical practitioners who are often specialists in diagnostic radiology.

Overall, 16.8 million Australians (68% of people) had more than 213.0 million Medicare-subsidised referred specialist attendances (consultations), pathology tests, imaging and other diagnostic services in 2017–18—a rate of 13 services per patient.

What are referred medical services?

These are medical services where the person has been referred by a general practitioner (GP) or medical specialist (AIHW 2019a). Australia's national government-funded health care scheme, Medicare, subsidises access to referred specialist attendances (visits), pathology, imaging and other diagnostic services. This page describes the services that Australians receive under these arrangements.

Which referred medical services are included here?

This page focuses on referred medical services provided in non-hospital settings to non-admitted patients, which account for 87% of the total referred medical services subsidised under Medicare. The other 13% of services are provided to private patients in public or private hospitals as part of an episode of hospital treatment. For Medicare purposes, this can include some treatment in non-hospital settings for hospital-substitute treatment.

- While services provided in-hospital are excluded, the data do include services provided in places like private outpatient clinics (which may or may not be located within the grounds of a hospital).

- Data on specialist attendances provided here does not include information about therapeutic procedures covered by Medicare that may be performed in conjunction with a specialist attendance, which can be billed as a separate service.

- Specialist attendances, pathology, imaging and other diagnostic services provided to public patients treated in a public hospital are excluded as these services are funded under separate arrangements and data for these services are not collected in Medicare statistics.

Note that the expenditure data presented on this page will differ from similar data presented in Health expenditure Australia for 'referred medical services'. This page presents benefits paid and out-of-pocket costs paid by patients only for non-hospital services attracting a Medicare rebate. Other expenditure data are not included here, such as for Medicare-subsidised in-hospital services and similar services provided under other arrangements (for example, services funded by the Department of Veterans' Affairs) either because data are not available or not complete.

Specialist attendances

In 2017–18, there were 33.5 million Medicare-subsidised referred specialist attendances (consultations) in a range of settings (Table 1). These attendances were provided to 8.2 million Australians (33% of people). Most people visited a referred specialist in non-hospital settings (75%), such as private consulting rooms and private outpatient clinics. In 2017–18, there were 25.2 million such referred specialist consultations, provided to 7.8 million patients in total.

Table 1: Medicare-subsidised specialist attendances[a] by setting, 2017–18

Service setting	Proportion of people receiving a service (%)	Number of services (million)	Number of services per patient
Specialist attendances— non-hospital	31.9	25.2	3.2

Service setting	Proportion of people receiving a service (%)	Number of services (million)	Number of services per patient
Specialist attendances— in-hospital	8.6	8.3	3.9
Specialist attendances— total	33.3	33.5	4.1

a) Specialist attendances are Medicare-subsidised referred patient/doctor encounters, such as visits, consultations, and attendances by video conference, involving medical practitioners who have been recognised as specialists or consultant physicians for Medicare benefits purposes. Specialist attendances include psychiatry and obstetric care, including antenatal and post-natal attendances.

*Sources:* AIHW analysis of MBS claims data; ABS 2018.

The data below relate to referred specialist consultations provided in non-hospital settings only.

In 2017–18, 32% of people had at least 1 Medicare-subsidised specialist consultation in a non-hospital setting. The most widely accessed specialties (in terms of the percentage of the population receiving a consultation) were: ophthalmology (5.3%), cardiology (4.0%), general surgery (3.9%) and dermatology (3.5%).

Across all specialties, there was an average of 3.2 specialist attendances per patient in 2017–18 (patients may have seen different types of specialists). The specialties for which patients received the most repeat services on average within the year included: psychiatry (4.9 services per patient), addiction medicine (3.6 services per patient) and medical oncology (3.4 services per patient).

In 2017–18, the specialties with the highest number of non-hospital consultations subsidised within the year were: ophthalmology (2.4 million), obstetrics and gynaecology (2.4 million), psychiatry (1.9 million), cardiology (1.7 million), general surgery (1.6 million), dermatology (1.5 million), and orthopaedic surgery (1.3 million) (Figure 1). These 7 specialties accounted for half of all non-hospital specialist consultations subsidised by Medicare (50%).

Figure 1: Top ten specialities by number of attendances, 2017–18

Measure
◉ Specialist attendances (millions)
○ Percentage of population receiving a service
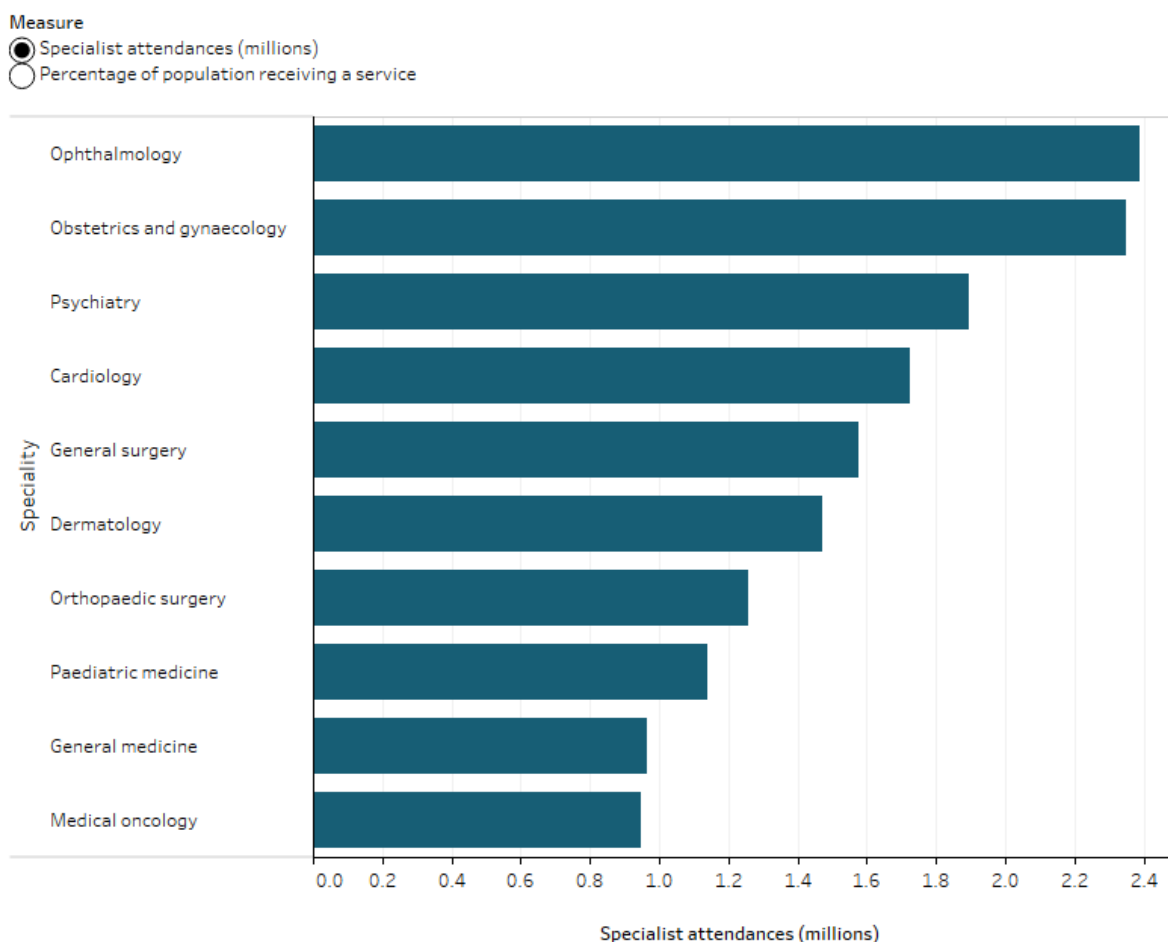
Notes
1. This figure includes non-hospital Medicare-subsidised services only.
2. Top 10 specialities defined as those with the highest number of specialist attendances processed in that year, or the highest percentage of the population receiving a service from that specialist type in that year.
Sources: AIHW analysis of Department of Health Medicare claims data; ABS 2018.
http://www.aihw.gov.au/

Trends

The number of patients who had a Medicare-subsidised referred specialist consultation outside hospital increased from 7.0 million in 2013–14 to 7.8 million in 2017–18. However, the proportion of people who had a consultation with a specialist remained similar (30.4% and 31.9% of people respectively).

After adjusting for differences in the age structure of the population, the number of specialist consultations per 100 people increased slightly in the 5 years to 2017–18, from 93 to 96 consultations.

Patient characteristics

Older people received more Medicare-subsidised specialist consultations outside hospital than younger people. In 2017–18, around 2 in 3 (64%) Australians aged 65 and over had at

least 1 Medicare-subsidised referred specialist consultation outside hospital, whereas 1 in 4 (26%) aged under 65 had at least 1 consultation.

A higher proportion of females (35%) had at least 1 specialist consultation outside hospital than males (28%). This difference is partly associated with pregnancy-related consultations.

The proportion of Australians who received at least 1 service varied depending on where they lived. The proportion of people who had at least 1 referred specialist consultation was similar for residents of *Inner regional* areas and *Major cities* (33.3% and 32.2% respectively), but decreased with increasing remoteness to 14% of people living in *Very remote* areas. The lower use of Medicare-subsidised specialist attendances in remote and very remote areas may be partly attributed to these populations relying more on GPs to provide health care services, due to less availability of local specialist services (AIHW 2019b).

Spending

In 2017–18, $3.4 billion was spent on Medicare-subsidised referred specialist consultations in non-hospital settings. By funding source:

- $2.1 billion in Medicare benefits was paid by the Australian Government
- $1.3 billion in out-of-pocket costs was paid by patients.

Two-thirds (66%) of spending on non-hospital consultations was accounted for by 10 specialties: obstetrics and gynaecology ($406.1 million), psychiatry ($401.3 million), ophthalmology ($257.4 million), cardiology ($217.1 million), dermatology ($211.0 million), paediatric medicine ($197.2 million), general surgery ($161.5 million), orthopaedic surgery ($154.2 million), general medicine ($124.8 million) and ear, nose and throat ($115.4 million).

In 2017–18, 43% (10.7 million services) of non-hospital Medicare-subsidised specialist consultations were bulk-billed (indicating that patients did not incur costs for these services). For those who did pay out-of-pocket costs (71% of patients—5.6 million people), the average cost per patient for non-hospital specialist attendances was $231 for all services received in the year.

See 'What are referred medical services?' above for further information on the in-scope Medicare services for the above and subsequent figures.

Trends in spending

Overall, spending on Medicare-subsidised specialist consultations in non-hospital settings increased:

- Medicare benefits paid by the Australian Government increased in real terms (after adjusting for inflation), from $1.9 billion in 2013–14 to $2.1 billion in the 5 years to 2017–18. However, when we consider changes in the number of patients (including

through population growth), spending remained the same on a per patient basis ($269 per patient in real terms in both 2013–14 and 2017–18).

- Patient out-of-pocket costs increased, in real terms, from $1.0 billion in 2013–14 to $1.3 billion in 2017–18 (Figure 2). On a per patient basis, there was an increase in real terms from $197 per patient (for all services received in the year) to $231 during this period.

In the 5 years to 2017–18, the average specialist fee per service increased 1.0% per year (on average) in real terms. The proportion of provider fees covered by Medicare for non-hospital specialist attendances decreased by 3.0 percentage points, from 65.2% in 2013–14 to 62.2% in 2017–18.

Figure 2: Specialist attendance fees and out-of-pocket costs, constant prices, 2013–14 to 2017–18

Display
Medicare benefits paid (billions)
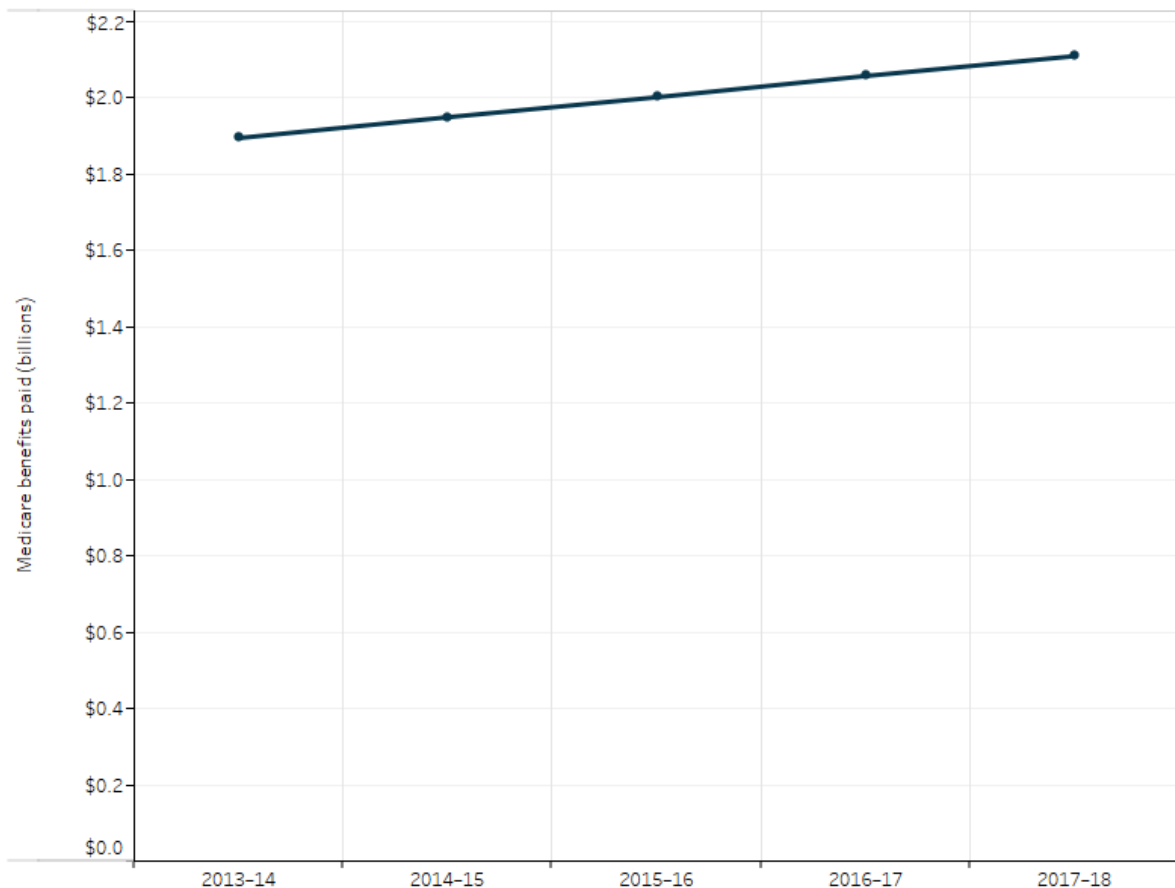
Notes
1. This figure includes non-hospital Medicare-subsidised services only.
2. Medicare benefit and provider fees expressed in constant prices (please refer to Glossary).
Source: AIHW analysis of Department of Health Medicare claims data.
http://www.aihw.gov.au/

Patient experiences

The Patient Experiences in Australia survey for 2018–19 (ABS 2019) estimated that for people aged 15 and over who saw a medical specialist in the previous 12 months:

- 17.4% of people who reported that they needed to see a medical specialist at some time in the last 12 months at least once delayed or did not see a specialist due to costs or other reasons

- 23.5% waited longer than they felt acceptable to get an appointment with a medical specialist

- a high proportion of people reported that the medical specialists they saw 'always' listened carefully, spent enough time with them and showed respect (80.1%, 80.4% and 84.0% respectively) (ABS 2019). Smaller proportions reported that the specialists they saw 'often' displayed these behaviours (12.8%, 11.7%, and 10.5% respectively) (ABS 2019).

See also Patient experience of health care.

Pathology, imaging and other diagnostic services

In 2017–18, 16.1 million (66%) Australians accessed 179.5 million Medicare-subsidised pathology tests, imaging scans and a range of diagnostic services.

Most (89%, or 160.7 million) Medicare-subsidised services included in this grouping were provided in non-hospital settings. The most common Medicare-subsidised services in this group were pathology (56% of people had at least 1 service) and diagnostic imaging services (38% of people had at least 1 service) (Table 2).

Table 2: Use of Medicare-subsidised pathology, imaging and other diagnostic services[a], 2017–18

Type of service	Proportion of people receiving a service (%)	Number of services (million)	Number of services per patient (average)
Pathology— non-hospital[b]	56.1	128.7	9.3
Diagnostic imaging—non-hospital[c]	38.2	24.9	2.7
Other diagnostic services—non-hospital[d]	15.6	7.0	1.8
Total	65.1	160.7	10.0

(a) This table includes non-hospital Medicare-subsidised services only.

(b) Pathology services include tests of patient samples, such as blood, urine, stools or body tissues. Note that one sample may result in multiple tests and therefore multiple MBS services.

(c) Diagnostic imaging services include X-rays, CT scans, ultrasound scans, MRI scans and nuclear medicine scans.

(d) Other diagnostic services include diagnostic procedures and investigations, such as electrocardiography, allergy testing, audiograms and sleep studies.

Sources: AIHW analysis of MBS claims data; ABS 2018.

Further data below relate to Medicare-subsidised services provided in non-hospital settings only.

Trends

Overall, there was a slight increase in the proportion of people who had a Medicare-subsidised service within this group over the 5 years to 2017–18. The proportion of people who had a pathology service increased from 53.9% to 56.1%, and the proportion who had diagnostic imaging services increased from 37.0% to 38.2%.

After adjusting for differences in the age structure of the population, the number of these services per 100 people increased in the 5 years to 2017–18, from 465 to 492 pathology services and from 88 to 96 diagnostic imaging services (Figure 3).

Figure 3: Diagnostic services, 2013–14 to 2017–18

Display
Services

Financial Year	Type of service
2013–14	Pathology
	Diagnostic imaging
	Other diagnostic services
2014–15	Pathology
	Diagnostic imaging
	Other diagnostic services
2015–16	Pathology
	Diagnostic imaging
	Other diagnostic services
2016–17	Pathology
	Diagnostic imaging
	Other diagnostic services
2017–18	Pathology
	Diagnostic imaging
	Other diagnostic services

Services (millions)
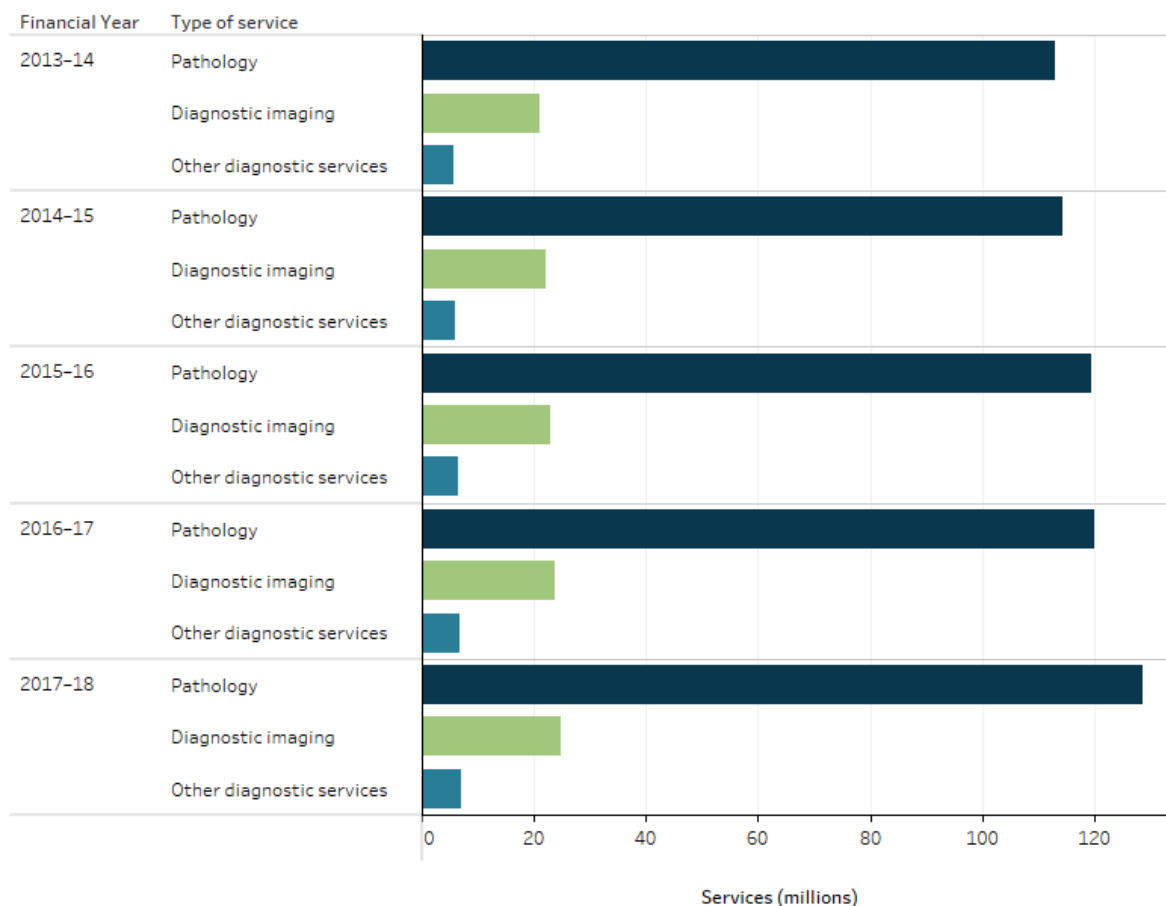
Note: This figure includes non-hospital Medicare-subsidised services only.
Sources: AIHW analysis of Department of Health Medicare claims data; ABS 2011 and ABS 2018.
http://www.aihw.gov.au/

Patient characteristics

Older people were more likely to have at least 1 of these Medicare-subsidised services. In 2017–18, 91% of people aged 65 and over had at least 1 pathology service, compared with 71% of people aged 45–64 and 41% of people aged 44 and under.

Females were more likely than males to have had 1 or more Medicare-subsidised pathology services (64% of females had at least 1 service, compared with 48% of males). This trend was also apparent for diagnostic imaging services, where 44% of females received a service compared with 33% of males.

In 2017–18, similar proportions of people living in *Major cities*, *Inner regional* areas and *Outer regional* areas received these types of services, compared with *Remote* and *Very remote* areas, where lower percentages of people received them. This was most apparent with diagnostic imaging, where 38% of people living in *Major cities*, *Inner*

regional areas and *Outer regional* areas received a service, compared with 31% of people living in *Remote* areas and 24% of people living in *Very remote* areas.

Spending

In 2017–18, $7.0 billion was spent on Medicare-subsidised pathology, imaging and other diagnostic services in non-hospital settings. This comprised:

- $6.5 billion in Medicare benefits paid by the Australian Government
- $491.9 million in out-of-pocket costs paid by patients.

About $2.6 billion was spent on Medicare-subsidised pathology services in non-hospital settings, and $3.8 billion on diagnostic imaging services in 2017–18.

In 2017–18, 154 million (96%) of these services were bulk-billed (indicating that patients did not incur costs for these services). Pathology services contribute a large proportion of this figure as displayed in Figure 3. For those who did incur out-of-pocket costs, diagnostic imaging had the highest average cost per patient ($180) in 2017–18, whereas pathology had the lowest ($34) for all services received in the year.

Trends in spending

In the 5 years to 2017–18, spending on Medicare-subsidised pathology, imaging and other diagnostic services outside of hospital increased:

- Medicare benefits paid by the Australian Government increased in real terms (after adjusting for inflation), from $5.6 billion in 2013–14 to $6.5 billion in 2017–18 (Figure 4). Per patient, this was an increase in real terms from $379 per patient to $406 per patient.
- Patient out-of-pocket costs increased in real terms (after adjusting for inflation), from $455.9 million in 2013–14 to $491.9 million in 2017–18. On a per patient basis there was an increase in real terms from $147 to $159 in this period.

For pathology services, the number of patients who had an out-of-pocket cost decreased—from 455,000 in 2013–14 to 219,000 in 2017–18. Over the same period, the average cost per patient (for those who had out-of-pocket costs) also decreased (from $55 to $34 per patient in real terms).

However, for diagnostic imaging services, the number of patients who had an out-of-pocket cost has been stable between 2013–14 and 2017–18—in the range of 2.1–2.2 million in each year. The average cost per patient (for those who had an out-of-pocket cost) increased in real terms from $167 in 2013–14 to $180 in 2017–18.

Figure 4: Diagnostic service fees and out-of-pocket costs, constant prices, 2013–14 to 2017–18
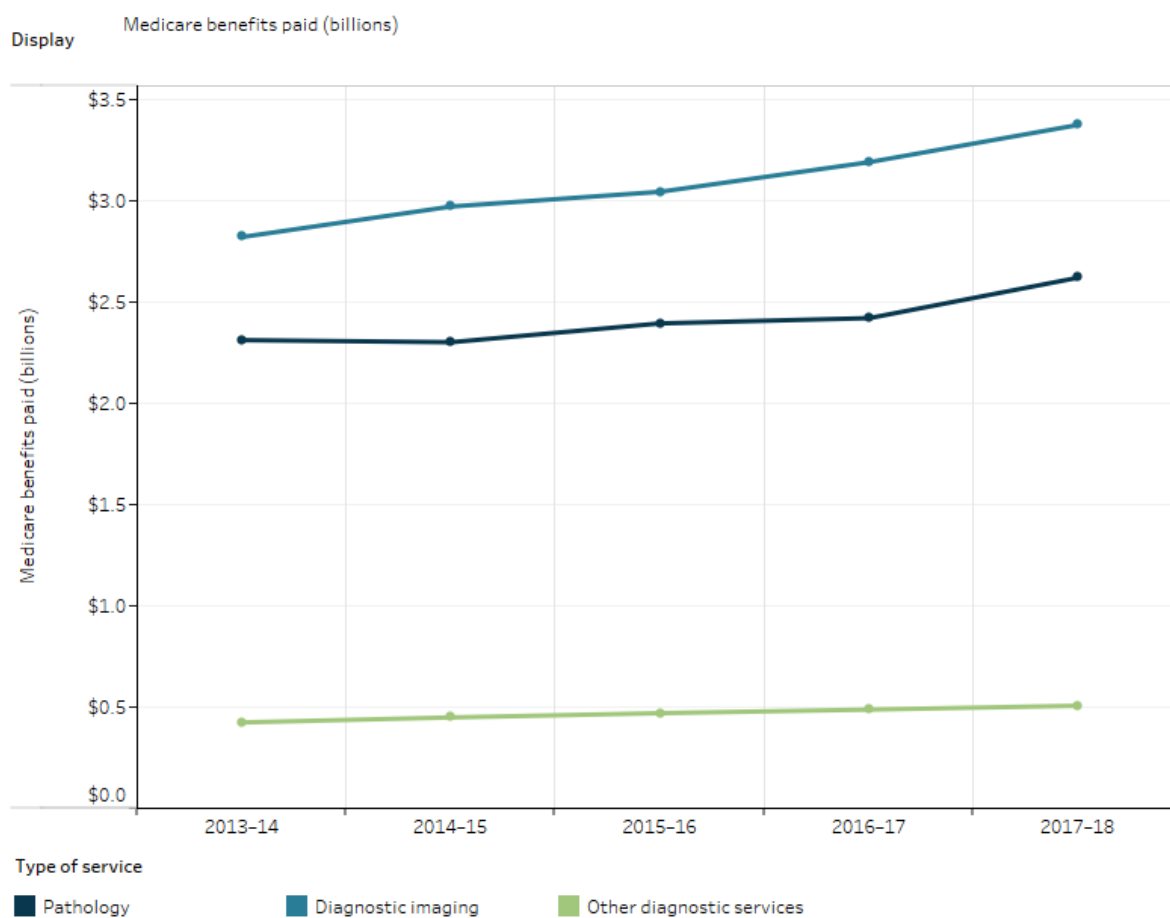
Notes
1. This figure includes non-hospital Medicare-subsidised services only.
2. Medicare benefit and provider fees expressed in constant prices (please refer to Glossary).
Source: AIHW analysis of Department of Health Medicare claims data.
http://www.aihw.gov.au/

This page presents data for the most recently available 5 years of MBS claims data with a corresponding medical services price deflator—from 2013–14 to 2017–18.

Where do I go for more information?

For more information and data on referred specialist, pathology, imaging and other diagnostic services see:

- Medicare-subsidised GP, allied health and specialist health care across local areas: 2013–14 to 2017–18
- Department of Health Pathology 2016 fact sheet
- Department of Health Medical Radiation Practitioners 2017 fact sheet

References

ABS (Australian Bureau of Statistics) 2011. Australian demographic statistics, Jun 2011. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2018. Australian demographic statistics, Jun 2018. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2019. Patient Experiences in Australia: summary of findings, 2018–19. ABS cat. no. 4839.0. Canberra: ABS. Viewed 12 November 2019.

AIHW (Australian Institute of Health and Welfare) 2019a. Health expenditure Australia 2017–18. Health and welfare expenditure series no. 65. Cat. no. HWE 77. Canberra: AIHW.

AIHW 2019b. Rural & remote health. Cat. no. PHE 255. Canberra: AIHW.

Workers' compensation

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/workers-compensation

Workers' compensation provides financial support if a person is injured at work or becomes sick due to work. It can include payments to cover their wages while they are unable to work, payments for medical expenses and rehabilitation costs, and lump sum payments where an injury is deemed permanent. It can also include payments to families for work-related deaths.

Workers' compensation payments cover minor injuries through to life-long injuries and death. Most of the data on this page relate to serious claims that resulted in at least 1 week off work. For more information, see Safe Work Australia.

Australia's workers' compensation system

In Australia, workers' compensation laws are based on a 'no fault' principle. This means that a worker does not need to prove that their employer was negligent to be eligible for workers' compensation, but only that their injury or disease was work-related (Safe Work Australia 2018).

For most businesses in Australia, purchasing workers' compensation insurance to cover their employees in case of work-related injury, disease or death is compulsory. However, sole traders and some contractors are not covered by workers' compensation schemes and may need to purchase independently other forms of insurance. For more information, visit business.gov.au.

In Australia, each state and territory has its own workers' compensation scheme. There are also some schemes administered by the Australian Government, with Comcare being the main scheme. For more information, see Comcare.

Workers' compensation arrangements differ across states and territories, including in scheme funding, common law access, coverage and eligibility, level of entitlements and return to work arrangements. In some states and territories, insurers privately underwrite the jurisdiction's compensation scheme; in others, insurers operate as scheme agents, or the scheme is completely administered by the jurisdiction. In some jurisdictions, eligible businesses may be able to self-insure.

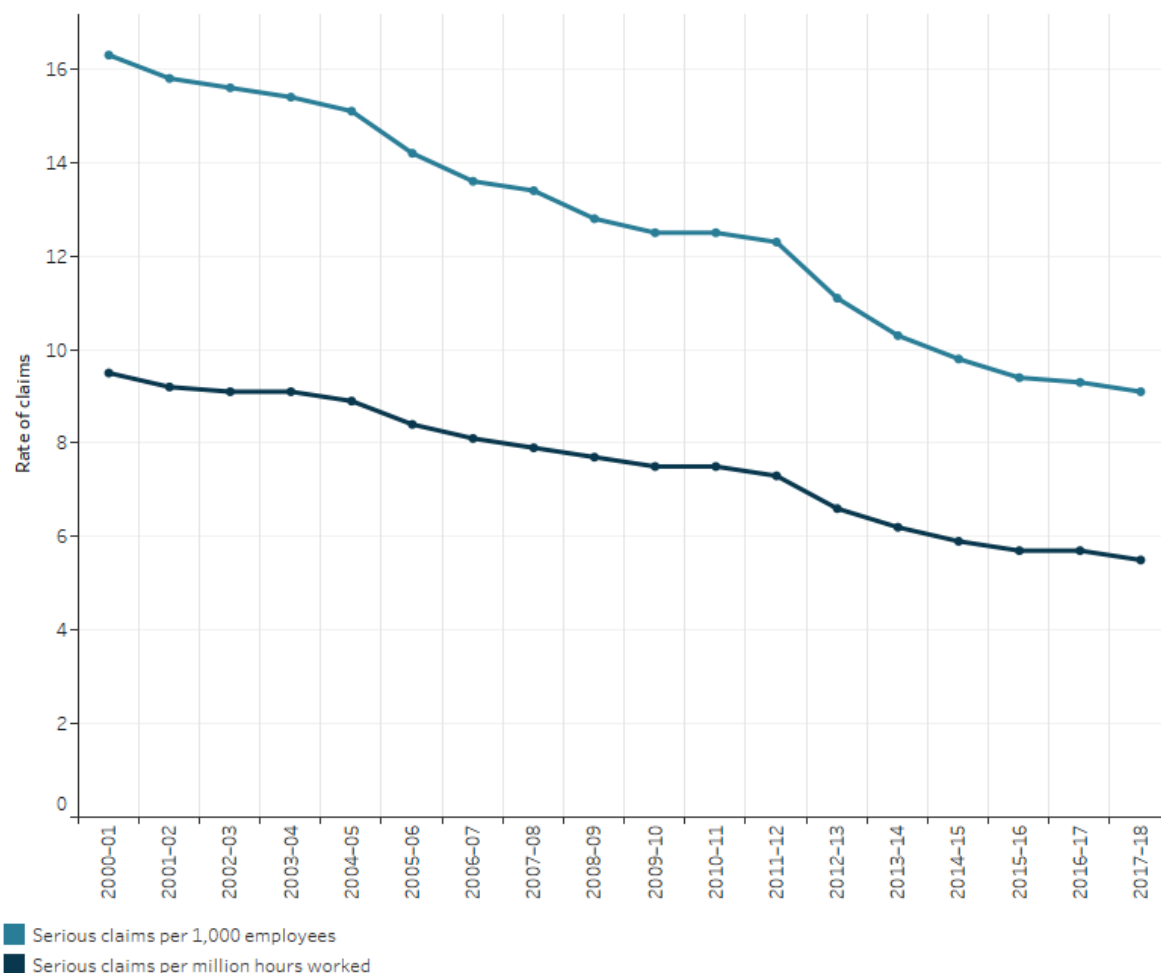# How many people experience work-related injury or disease?

According to the Australian Bureau of Statistics Work Related Injuries Survey, in 2017–18 more than 560,000 people were estimated to have had a work-related injury or disease regardless of whether any compensation claim was made (Figure 1). Of these, 39% did not require any time off work, 6.4% took part of a day or shift off work, 25% took 1–4 days off work, and 25% took 5 or more days off work. The remaining 3.6% had not returned to work since the work-related injury or illness occurred (ABS 2019).

Of those who experienced a work-related injury or illness in 2017–18, the most frequently cited causes of injury or illness were 'lifting, pushing, pulling or bending' (an estimated 135,900 people), 'hitting or being hit or cut by an object or vehicle' (102,400 people) and 'slips or falls on the same level' (87,000 people).

Work-related injury or illness in 2017–18 occurred most commonly at the workplace (92%), followed by travelling on business (3.0%), on lunchtime or break activities (2.2%), and travelling to and from work (1.2%).

In 2017–18, the estimated proportion of workers who experienced a work-related injury or disease decreased to 4.2% of workers, down from 6.4% in 2005–06.

Figure 2: Serious claims per 1,000 employees and serious claims per million hours worked, 2000–01 to 2017–18

Source: Safe Work Australia 2020.
http://www.aihw.gov.au

Who receives workers' compensation?

In 2017–18, 299,000 people—or just over half (53%) of all those who experienced a work-related injury or disease—received some form of financial assistance. About two-thirds (67%) of employees with paid leave entitlements received financial assistance, compared with 29% of those without paid leave entitlements (ABS 2019).

In total, of those who received financial assistance:

- 52% received workers' compensation
- 45% did not apply for workers' compensation
- 3% applied for but did not get workers' compensation.

The main reasons people reported not applying for workers' compensation were because they 'had only suffered a minor injury and did not consider it necessary' (43% of

those who did not apply), they 'were not covered or not aware of workers' compensation' (13%), and they 'did not think they were eligible for workers' compensation' (9.0%).

Serious claims

Serious claims are defined as those claims in which the injury or disease resulted in the employee taking 5 or more days off work but do not include compensated deaths.

In 2017–18, Safe Work Australia reported that there were 107,335 serious claims for workers' compensation, which translated to 9.1 serious claims per 1,000 employees in Australia and 5.5 serious claims per million hours worked (Safe Work Australia 2020) (Figure 2).

Overall, the rates of serious claims decreased between 2000–01 and 2017–18. Between 2000–01 and 2017–18, serious claims in the manufacturing industry fell by more than 14,000 (a 52% decrease), the largest decrease by number of claims for any Australian industry. Over the same period, the manufacturing industry had a 44% decrease in the number of serious claims per 1,000 employees.

Figure 2: Serious claims per 1,000 employees and serious claims per million hours worked, 2000–01 to 2017–18
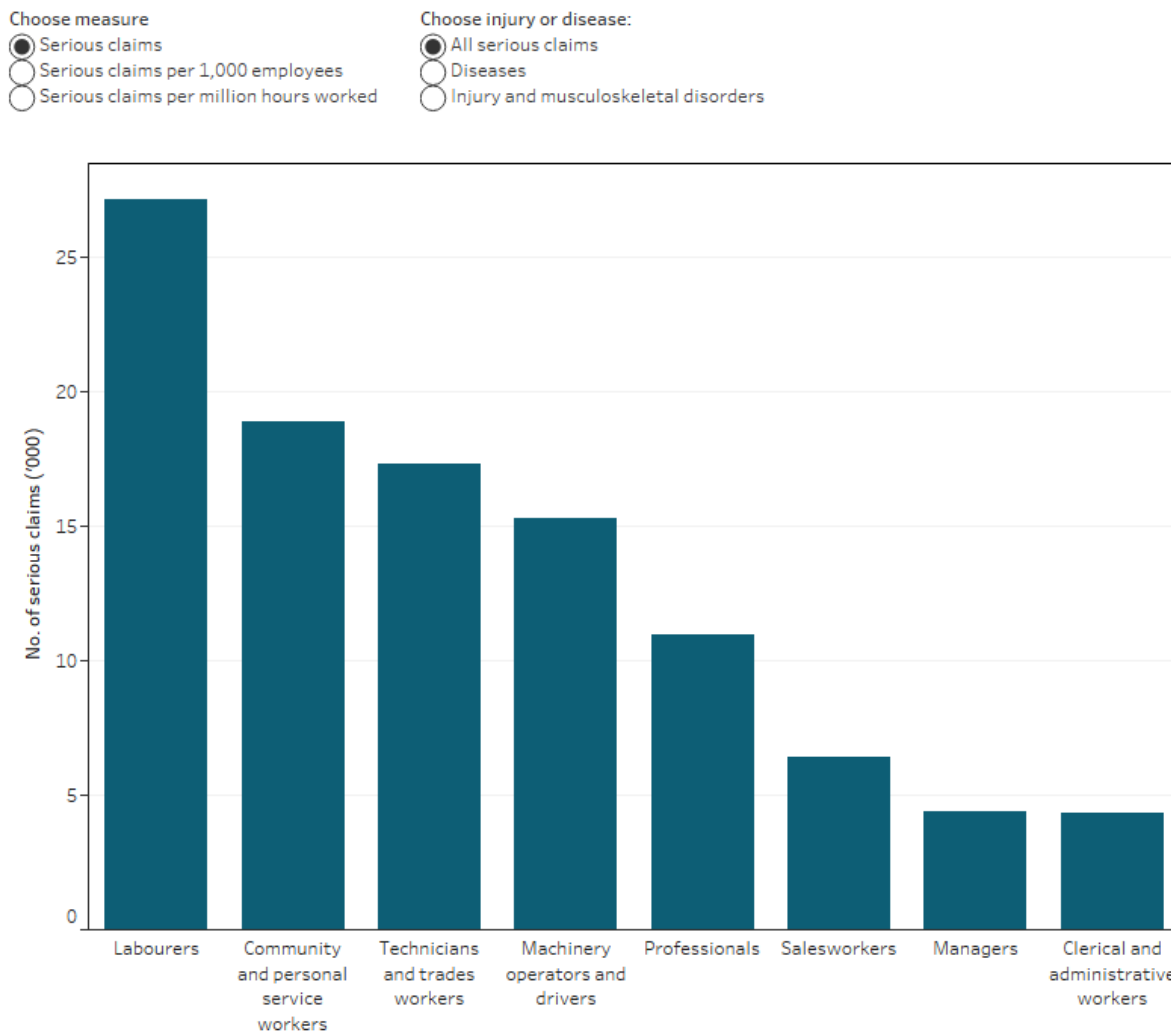

Serious claims per 1,000 employees
Serious claims per million hours worked
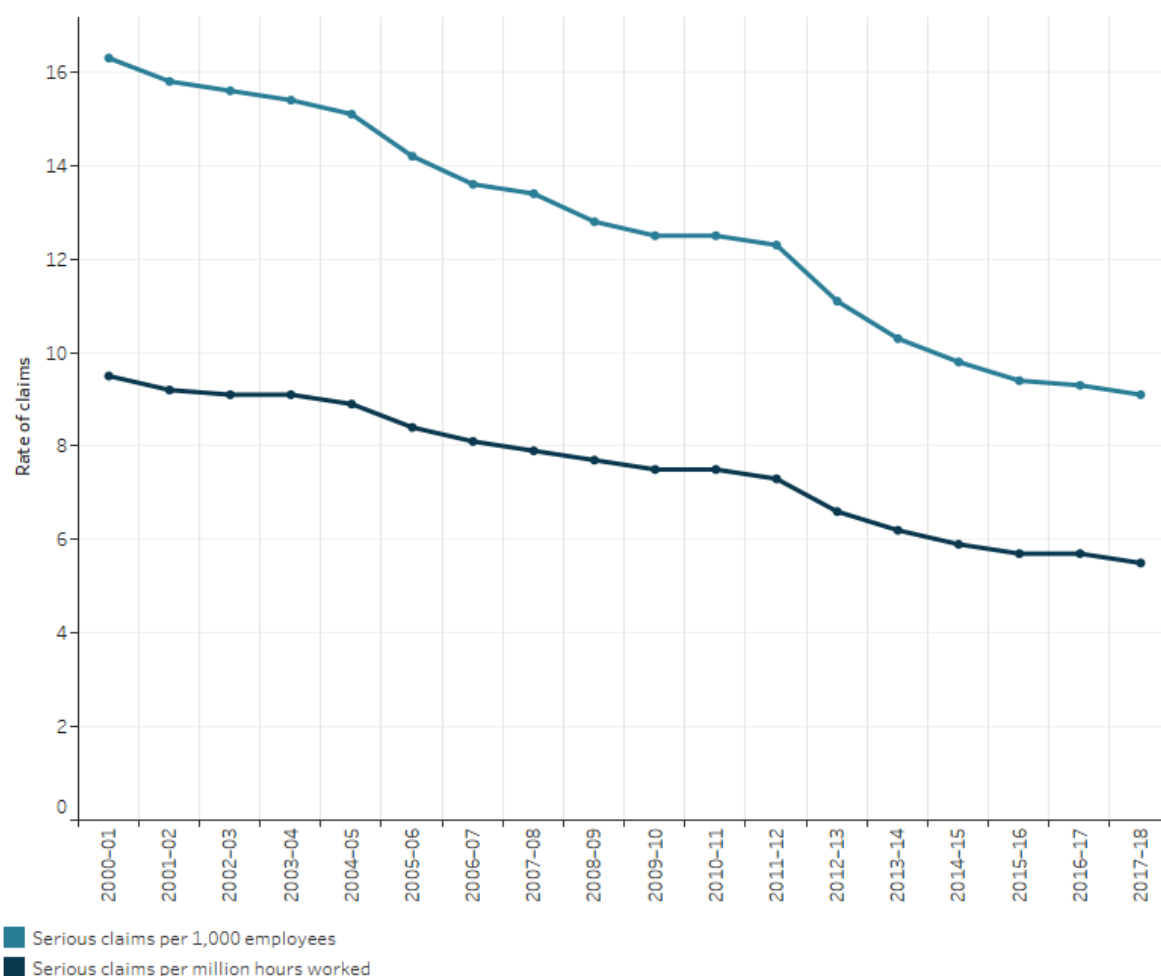
Source: Safe Work Australia 2020.
http://www.aihw.gov.au

In 2017–18, males accounted for 63% of all serious claims, and 58% of total hours worked. Among males, the highest incidence rate of claims occurred in the agriculture, forestry and fishing industry, at 18.3 serious claims per 1,000 employees. For female employees, the highest incidence rate of claims also occurred in the agriculture, forestry and fishing industry at 12.6 serious claims per 1,000 employees.

In 2017–18, the highest incidence rate of claims occurred for those aged 55–59, at 12.5 serious claims per 1,000 employees. Those aged 15–19 had the lowest rate of claims at 5.5 serious claims per 1,000 employees.

Of all occupation groups, labourers had the highest incidence rate of claims in 2017–18, at 24.1 serious claims per 1,000 employees (Figure 3). This was followed by machinery operators and drivers (20.3 claims per 1,000 employees), and community and personal service workers (14.1 claims per 1,000 employees).

Figure 3: Number of serious claims and claim rates, by occupation and injury or disease, 2017–18

Choose measure
- ● Serious claims
- ○ Serious claims per 1,000 employees
- ○ Serious claims per million hours worked

Choose injury or disease:
- ● All serious claims
- ○ Diseases
- ○ Injury and musculoskeletal disorders

Source: Safe Work Australia 2020.
http://www.aihw.gov.au

Type of injuries or diseases

In 2017–18, 89% of serious claims were for injury and musculoskeletal disorders (Safe Work Australia 2020). The remaining serious claims were for diseases, including mental health conditions (7.5% of total serious claims), digestive system diseases (1.9%) and nervous systems and sense organ diseases (1.0%).

Overall, 41% of claims were for traumatic joint/ligament and muscle/tendon injury, followed by wounds, lacerations, amputations and internal organ damage (16%) and musculoskeletal and connective tissue diseases (14%). Fractures accounted for 11% of serious claims, and mental health conditions 7.5%.

In 2017–18, labourers (25,055 serious claims) and community and personal service workers (16,560 serious claims) accounted for the highest number of injuries and musculoskeletal disorders (Figure 3). Community and personal service workers (2,335) and professionals (2,245 serious claims) accounted for the highest number of disease-related serious claims.

See Health expenditure.

Costs

Work-related injuries, diseases and deaths are costly to employers, workers and their communities.

In 2017–18, $1.8 billion was spent through workers' compensation agencies for work-related injuries and diseases (AIHW 2019). This was an increase of 3.7% since 2016–17, which was higher than the average annual growth rate over the decade of 1.3%.

In 2016–17, a median time of 5.3 weeks of work was lost for serious claims in the injury and musculoskeletal disorder group, and 10.2 weeks for diseases (Safe Work Australia 2020). Adjusting for changes in the price of labour (base year 2000–01), the median compensation paid in 2016–17 was $7,100.

Of all types of injuries and diseases, mental health conditions resulted in the highest median time off work (17.3 weeks) and the highest median compensation paid ($30,800). Injuries to the nerves and spinal cord had the next highest median time off work (10.8 weeks), and were the next most costly at $21,100, after 'other diseases' ($22,000).

Where do I go for more information?

For more information on workers' compensation, see:

- Safe Work Australia Australian Workers' Compensation Statistics
- Australian Bureau of Statistics Work-Related Injuries, Australia, Jul 2017 to Jun 2018
- Health expenditure Australia 2017–18

References

ABS (Australian Bureau of Statistics) 2019. Work-Related Injuries, Australia, Jul 2017 to Jun 2018. ABS cat. no. 6324.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019. Health expenditure Australia 2017–18. Cat. no. HWE 077. Canberra: AIHW.

Safe Work Australia 2018. Comparison of workers' compensation arrangements in Australia and New Zealand. Canberra: Safe Work Australia.

Safe Work Australia 2020. Australian Workers' Compensation Statistics 2017–2018. Canberra: Safe Work Australia.

Australia's health snapshots 2020

Health across population groups

Health outcomes and experiences are not the same for everyone. These snapshots explore the different health outcomes of some population groups in Australia.

Health across socioeconomic groups

Socioeconomic factors are important determinants of health. Having access to material and social resources and being able to participate in society are important for maintaining good health. Social inequalities and disadvantage are the main reason for unfair and avoidable differences in health outcomes and life expectancy across groups in society.

Generally, people in lower socioeconomic groups are at greater risk of poor health, have higher rates of illness, disability and death, and live shorter lives than people from higher socioeconomic groups (Mackenbach 2015). The higher a person's socioeconomic position, the healthier they tend to be—a phenomenon often termed the 'social gradient of health'. See Social determinants of health and Social determinants and Indigenous health.

This page compares socioeconomic groups on health measures across 4 key health areas, focusing on people in the lowest and highest socioeconomic groups, where differences are usually large. It highlights that for almost all health measures, people from lower socioeconomic groups in Australia fare worse.

Measuring socioeconomic position—the Index of Relative Socio-economic Disadvantage

Socioeconomic position can be measured using an individual characteristic, such as a person's level of income, education or occupation, or it may be constructed as a composite measure using a range of socioeconomic information.

In the AIHW's reporting on health across socioeconomic groups, a composite measure of socioeconomic position known as the Index of Relative Socio-economic Disadvantage (IRSD) is frequently used (ABS 2018).

The IRSD classifies individuals according to the socioeconomic characteristics of the area in which they live. It scores each area by summarising attributes of the population, such as low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations. Areas can then be ranked according to their score. The population living in the 20% of areas with the greatest overall level of disadvantage is described as the 'lowest

socioeconomic areas'. The 20% at the other end of the scale—the top fifth—is described as the 'highest socioeconomic areas'.

Note that the IRSD reflects the overall or average level of disadvantage of the population of an area; it does not show how individuals living in the same area differ from each other in their socioeconomic position.

Health risk factors

On most health risk factors, adults living in the lowest socioeconomic areas fared worse than adults in the highest socioeconomic areas. Based on the Australian Bureau of Statistics 2017–18 National Health Survey, it is estimated that adults in the lowest socioeconomic areas were:

- 3.3 times as likely to smoke daily (AIHW 2020) (Figure 1)
- 1.6 times as likely to be obese (AIHW 2019k)
- 1.3 times as likely to be insufficiently active (AIHW 2019i)
- 1.2 times as likely to have uncontrolled high blood pressure (AIHW 2019g).

Adults in the lowest socioeconomic areas were at similar lifetime risk of harm from drinking alcohol to adults in the highest socioeconomic areas (AIHW 2020).

More recent data for daily tobacco smoking and alcohol consumption levels, including for people living in the highest and lowest socioeconomic areas , is available in the National Drug Strategy Household Survey 2019.

Figure 1: Proportion of adults who smoked daily, by socioeconomic area, 2017–18
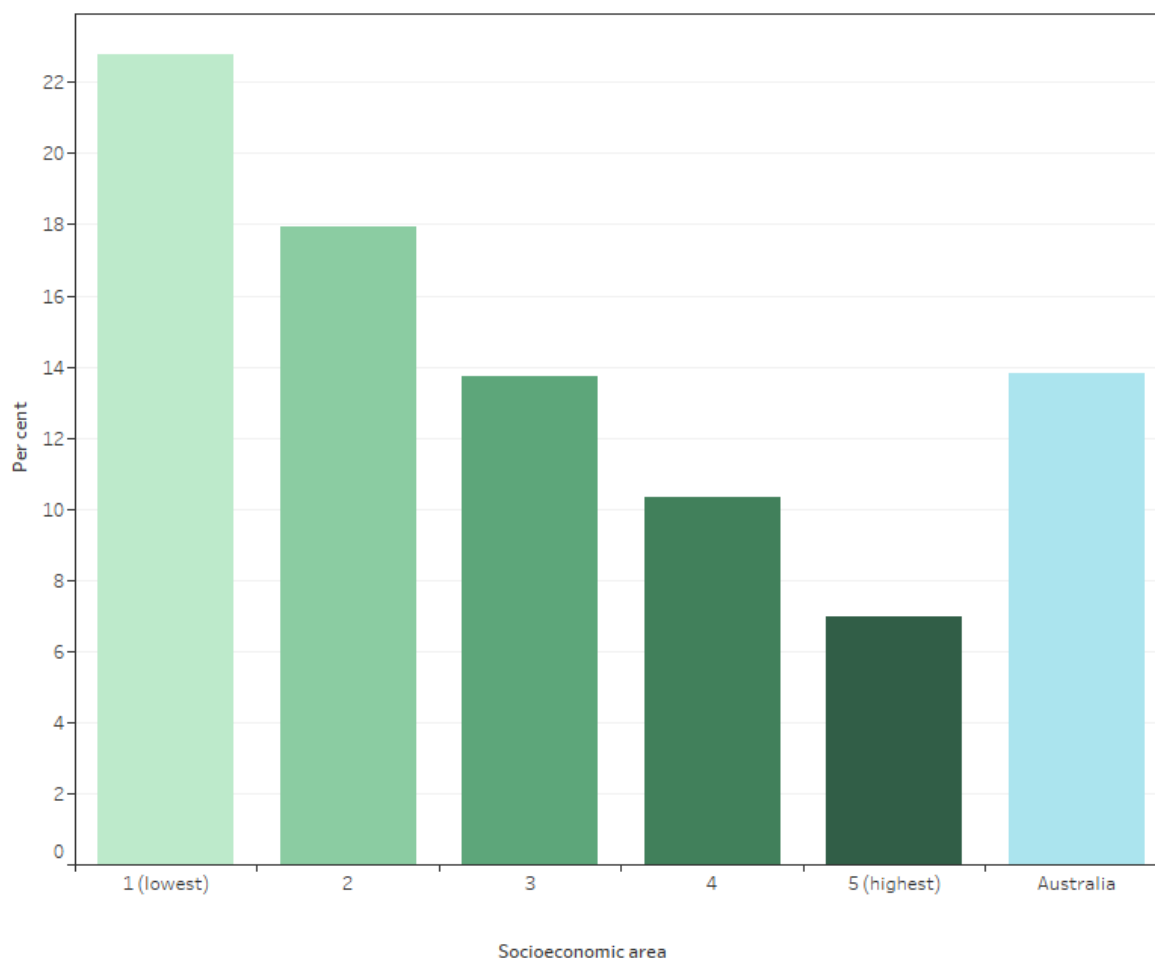
Note: Socioeconomic areas are classified according to population-based fifths using the Index of Relative Socio-Economic Disadvantage (IRSD) based on Statistical Area Level 1 of current residence.
Source: AIHW 2020.
http://www.aihw.gov.au/

Chronic conditions

Rates of chronic conditions were also higher for adults in the lowest socioeconomic areas, compared with adults in the highest socioeconomic areas. In particular, it is estimated that adults in the lowest socioeconomic areas were:

- 2.3 times as likely to have chronic obstructive pulmonary disease in 2017–18, among people aged 45 and over (AIHW 2019e)
- 2.2 times as likely to have diabetes in 2017–18 (AIHW 2019f)
- 1.7 times as likely to be newly diagnosed with lung cancer in 2010–2014, among people of all ages (AIHW 2019b) (Figure 2)
- 1.6 times as likely to have biomedical signs of chronic kidney disease in 2011–12 (AIHW 2019d)

- 1.3 times as likely to have heart, stroke and vascular disease in 2017–18 (AIHW 2019c).

Figure 2: Incidence of lung cancer by socioeconomic area, 2010–2014

Notes
1. Rates are age-standardised to the 2001 Australian Standard Population.
2. Socioeconomic areas are classified according to population-based fifths using the Index of Relative Socio-Economic Disadvantage (IRSD) based on postcode of current residence.
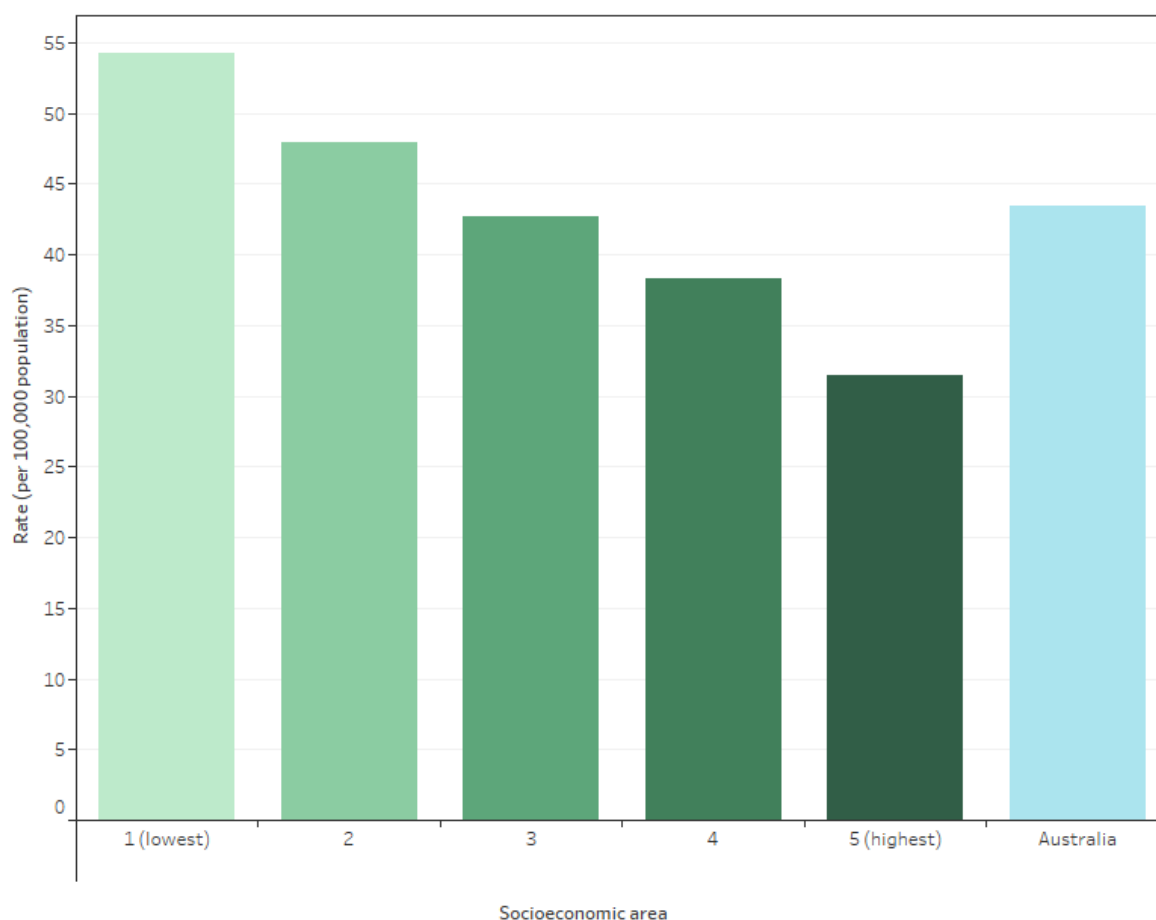Source: AIHW 2019b.
http://www.aihw.gov.au/

Deaths

In 2018, people in the lowest socioeconomic areas were 1.5 times as likely to die as people in the highest areas (Figure 3). They were 2.3 times as likely to die from potentially avoidable causes in 2018—this being a premature death that could have been avoided with timely and effective health care.

The mortality rate of people in the lowest socioeconomic areas for all causes of death was 615 per 100,000 population, compared with 554 in the second group, 494 in the third, 451 in the fourth, and 405 for people in the highest socioeconomic areas.

Disease-specific death rates were generally higher for people in the lowest socioeconomic areas, compared with people in the highest areas. In particular, adults in the lowest socioeconomic areas were:

- 2.4 times as likely to die from chronic obstructive pulmonary disease in 2014–2018
- 2.0 times as likely to die from lung cancer in 2014–2018
- 1.6 times as likely to die from coronary heart disease in 2014–2018
- 1.2 times as likely to die from cerebrovascular disease (mostly stroke) in 2014–2018
- 1.1 times as likely to die from dementia and Alzheimer's disease in 2014–2018 (AIHW 2019j).

Figure 3: All-cause mortality rate, by socioeconomic area, 2018

Notes
1. Rates are age-standardised to the 2001 Australian Standard Population.
2. Socioeconomic areas are classified according to population-based fifths using the Index of Relative Socio-Economic Disadvantage (IRSD) based on postcode of current residence.
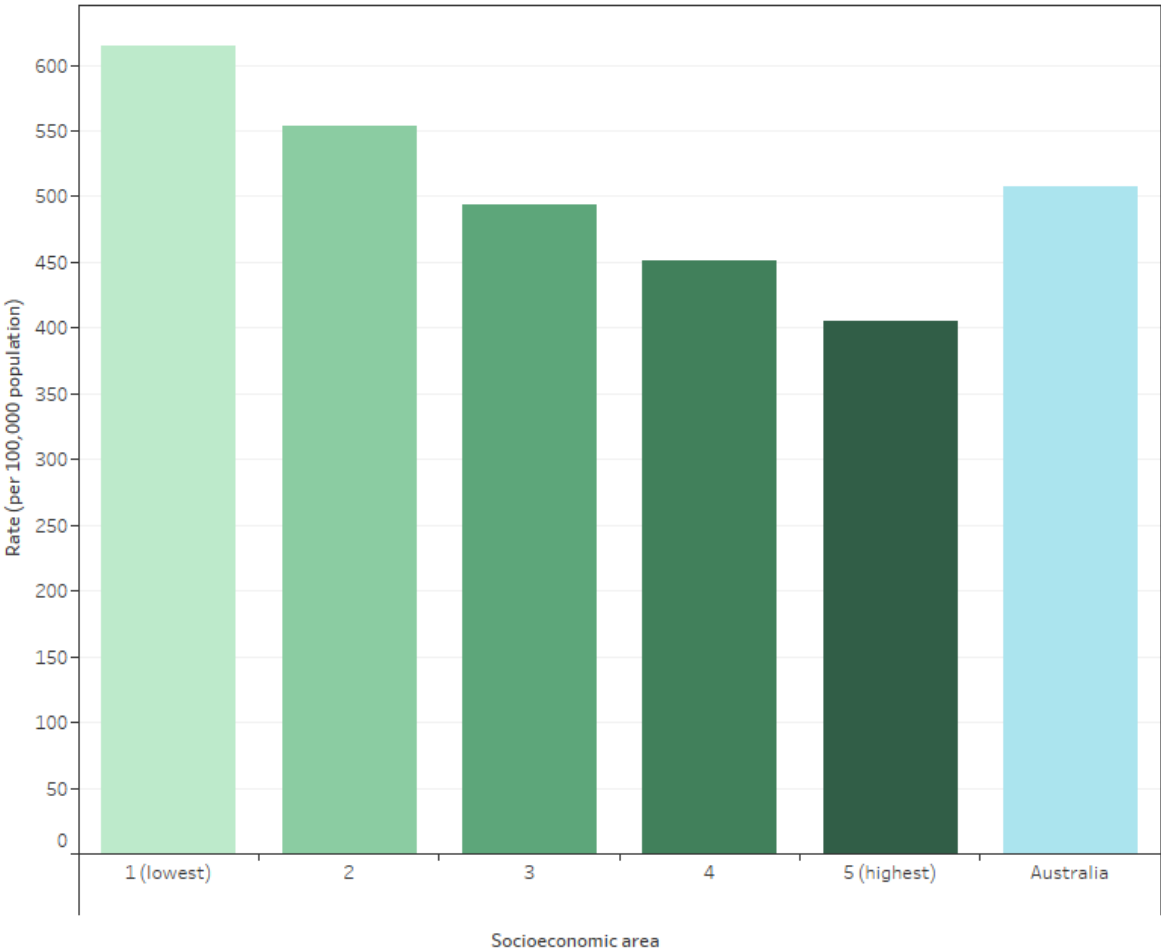*Source:* AIHW 2019j.
http://www.aihw.gov.au/

Males and females in the lowest socioeconomic areas in 2015 lived, on average, 6.4 and 4.1 years less than males and females in the highest socioeconomic areas (AIHW 2019b).

See Causes of death.

Burden of disease

Burden of disease analysis combines estimates of the fatal and non-fatal impact of disease (see Burden of disease).

In 2015, the overall burden rate for people in the lowest socioeconomic areas was 1.5 times as high as the rate for people in the highest socioeconomic areas (Figure 4).

Compared with people in the highest socioeconomic areas, people in the lowest socioeconomic areas experienced burden of disease that was estimated to be:

- 2.5 times as high for type 2 diabetes
- 2.0 times as high for lung cancer
- 1.4 times as high for anxiety disorders
- 1.4 times as high for stroke.

Adults in the lowest socioeconomic areas experienced a similar burden of disease for dementia to adults in the highest socioeconomic areas.

In terms of population impact, if all Australians had experienced the same burden as people in the highest socioeconomic areas in 2015, the total disease burden could have been reduced by one-fifth (20%) (AIHW 2019a).

Figure 4: Total burden of disease, by socioeconomic area, 2015
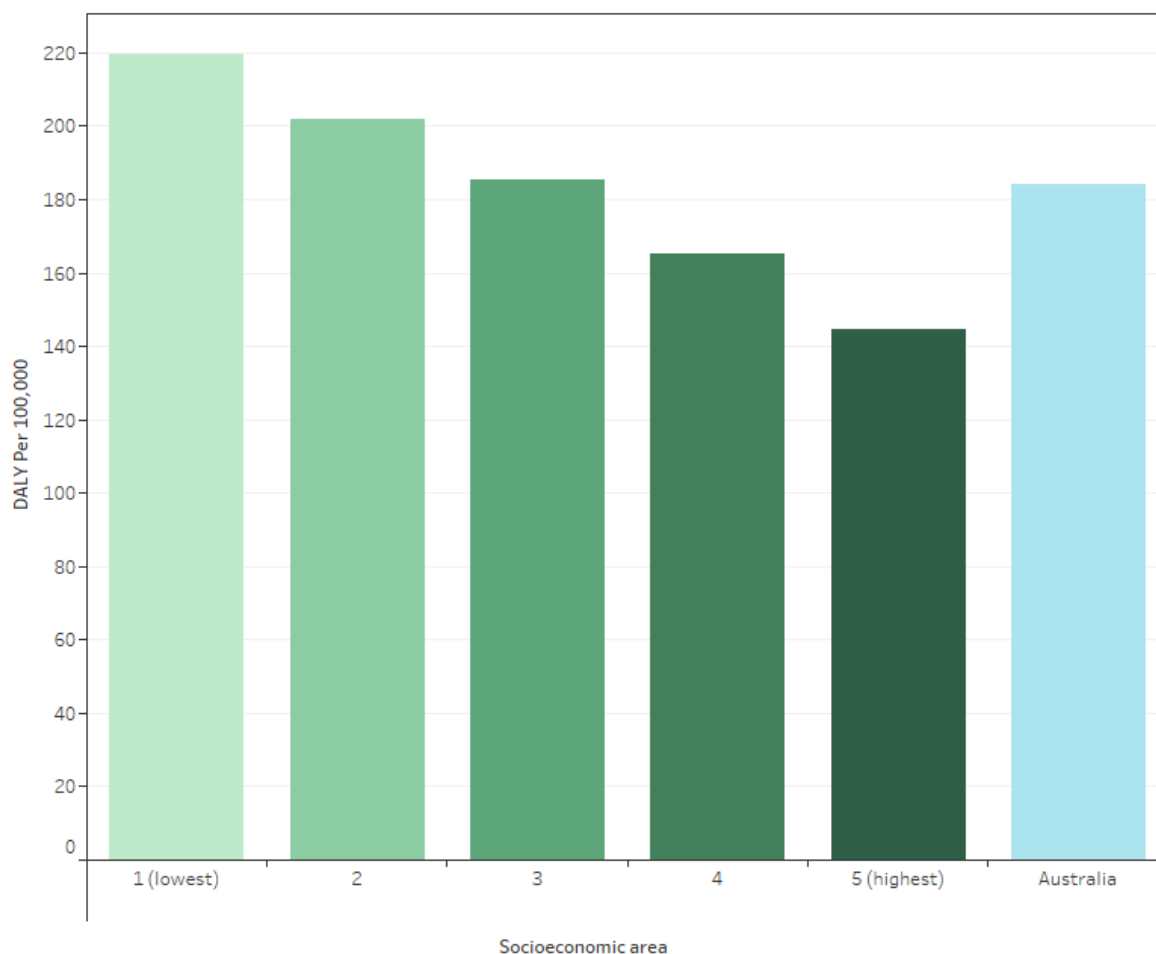
Notes
1. Rates are age-standardised to the 2001 Australian Standard Population.
2. Socioeconomic areas are classified according to population-based fifths using the Index of Relative Socio-Economic Disadvantage (IRSD) based on postcode of current residence.
Source: AIHW 2019a.
http://www.aihw.gov.au/

Other measures of socioeconomic position

Statistical linkage of health and welfare data sets can provide additional information on wealth, education, employment and other individual socioeconomic characteristics. This allows for a more accurate assessment of socioeconomic position. It also helps us to better understand the associations of socioeconomic characteristics with health outcomes, and the pathways through the health system for persons in different socioeconomic groups.

The following figure uses linked data to show social gradients in mortality for each of 3 measures—equivalised household income, highest educational attainment and housing tenure (Figure 5).

In each instance, people in lower socioeconomic groups had higher rates of mortality. The steepness of the gradient from low to high socioeconomic group, however, varied by sex, cause of death and measure of socioeconomic position.

Figure 5: Mortality rate, by chronic disease, socioeconomic position and sex, 2011–12

Select measure:
- ◉ Cardiovascular disease death rate
- ○ Chronic kidney disease death rate
- ○ Diabetes death rate

- ◉ Education
- ○ Housing tenure
- ○ Income

- ◉ Males
- ○ Females
- ○ Persons
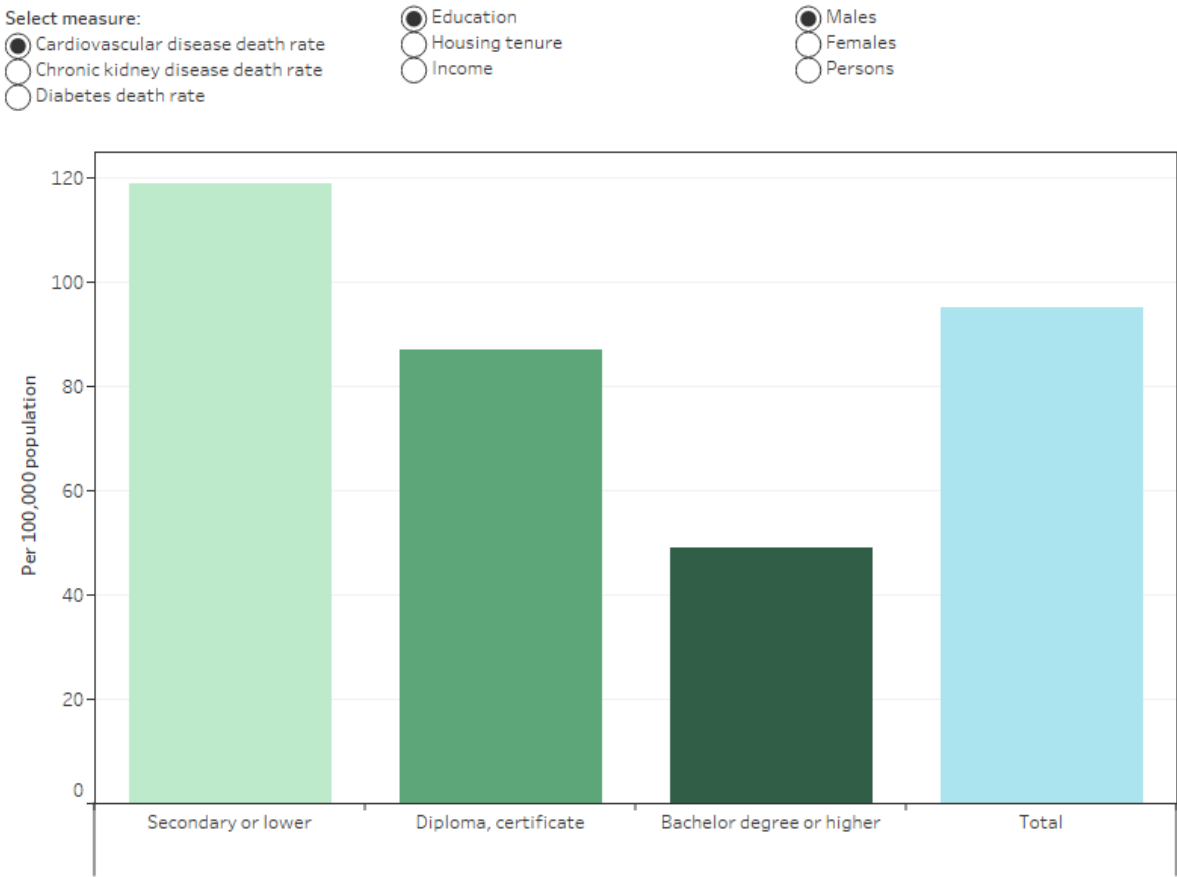
Notes
1. Rates are age-standardised to the 2001 Australian population.
2. Includes persons aged 25–74 years.

Source: AIHW 2019h.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on health across socioeconomic groups, see:

- Indicators of socioeconomic inequalities in cardiovascular disease, diabetes and chronic kidney disease
- Mortality Over Regions and Time (MORT) books
- Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015
- Australia's welfare 2019

References

ABS (Australian Bureau of Statistics) 2018. Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2016. ABS cat. no. 2033.0.55.001. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. Cancer in Australia 2019. Cat. no. CAN 123. Canberra: AIHW.

AIHW 2019c. Cardiovascular disease. Cat. no. CVD 83. Canberra: AIHW.

AIHW 2019d. Chronic kidney disease . Cat. no. CDK 16. Canberra: AIHW.

AIHW 2019e. Chronic obstructive pulmonary disease. Cat. no. ACM 35. Canberra: AIHW.

AIHW 2019f. Diabetes. Cat. no. CVD 82. Canberra: AIHW.

AIHW 2019g. High blood pressure. Cat. no. PHE 250. Canberra: AIHW.

AIHW 2019h. Indicators of socioeconomic inequalities in cardiovascular disease, diabetes and chronic kidney disease. Cat. no. CDK 12. Canberra: AIHW.

AIHW 2019i. Insufficient physical activity. Cat. no. PHE 248. Canberra: AIHW.

AIHW 2019j. Mortality Over Regions and Time (MORT) books. Cat. no. PHE 229. Canberra: AIHW.

AIHW 2019k. Overweight and obesity: an interactive insight. Cat. no. PHE 251. Canberra: AIHW.

AIHW 2020. Alcohol, tobacco & other drugs in Australia. Cat. no. PHE 221. Canberra: AIHW.

Mackenbach JP 2015. Socioeconomic inequalities in health in high-income countries: the facts and the options. In: Detels R, Gulliford M, Karim QA & Tan CC (eds). Oxford textbook of global public health. Vol. 1. 6th edn. Oxford: Oxford University Press.

Health of children

In a national study of Australian young people's perspectives, health ranked as the second most important domain, after family, for having a good life (Redmond et al. 2016). Good health influences how children feel and go about their daily lives, as it can affect participation in family life, schooling, social and sporting activities.

The foundations for good health start during the antenatal period and early years and can have long-term impacts on a child's later life—see Health of mothers and babies. Targeting risk factors in children can reduce preventable chronic disease in adulthood and equips children with the best life chances (AHMAC 2015; AIHW 2019b). Investment in early years of child development also provides an opportunity for substantial health gains across the lifespan (AHMAC 2015).

Profile of children

At 30 June 2019, an estimated 4.7 million children aged 0–14 lived in Australia. Boys made up a slightly higher proportion of the population than girls (51% compared with 49%) (ABS 2019a).

Who are Australia's children?

Defining the age range for children varies across Australian and international data collections and reporting. Definitions can be based on theories of child development and/or levels of dependency at different stages from birth to youth, or legal definitions.

For the purposes of reporting national Children's Headline Indicators, children are defined as aged 0–12, covering the developmental stages from the antenatal period and infancy through to the end of primary school. Defining children as those aged 0–12 aligns with the AIHW Australia's Children report, and complements the age range in the National Youth Information Framework of 12–24 years. For information about the health of those aged 12–24, see Health of young people.

Throughout this page, where data for 0–12 year olds are either not available or the numbers are too small for robust reporting, a different age range (most commonly 0–14 years) is reported. This is particularly the case for health-related data from the Australian Bureau of Statistics, which are commonly used on this page.

The number of children in Australia is projected to reach 6.4 million by 2048 (ABS 2018d). However, due to sustained low fertility rates and increasing life expectancy, the

number of children as a proportion of the entire population has steadily fallen, from 29% in 1968 to 19% in 2018. This proportion is projected to fall to 18% by 2048 (ABS 2018d).

Australia's children

Of all children aged 0–14:

- almost 3 in 4 (71%) lived in *Major cities* in 2018 (ABS 2019d)

- just over 1 in 5 (21%) lived in the lowest socioeconomic areas in 2018 (AIHW 2019b)

- in 2017, almost 1 in 11 (8.9%) had been born overseas (ABS 2018d)

- in 2018, 5.9% were Aboriginal and Torres Strait Islander (ABS 2018b).

Health status

Burden of disease

The burden of disease is the quantified impact of a disease or injury on a population, which captures health loss, or years of healthy life lost through premature death or living with ill health (see Burden of disease). Infants (aged under 1) accounted for a smaller proportion of the total population than children aged 1–4, but contributed a greater proportion to the total burden of disease. The proportion of total burden was lower among those aged 1–4 than in any other age group. For infants and young children aged under 5, the leading causes of total burden of disease were mainly infant and heart conditions. Among children aged 5–14, asthma was the leading cause of burden and contributed to 14% and 12% of the total burden in boys and girls respectively (Figure 1).

Boys and girls also experienced substantial burden from mental and substance use disorders (Figure 1). Other leading causes of burden for children were dental caries, back pain and problems, epilepsy, and acne (AIHW 2019a).

Figure 1: Leading causes of total burden among children aged 0–14, by age group and sex, 2015
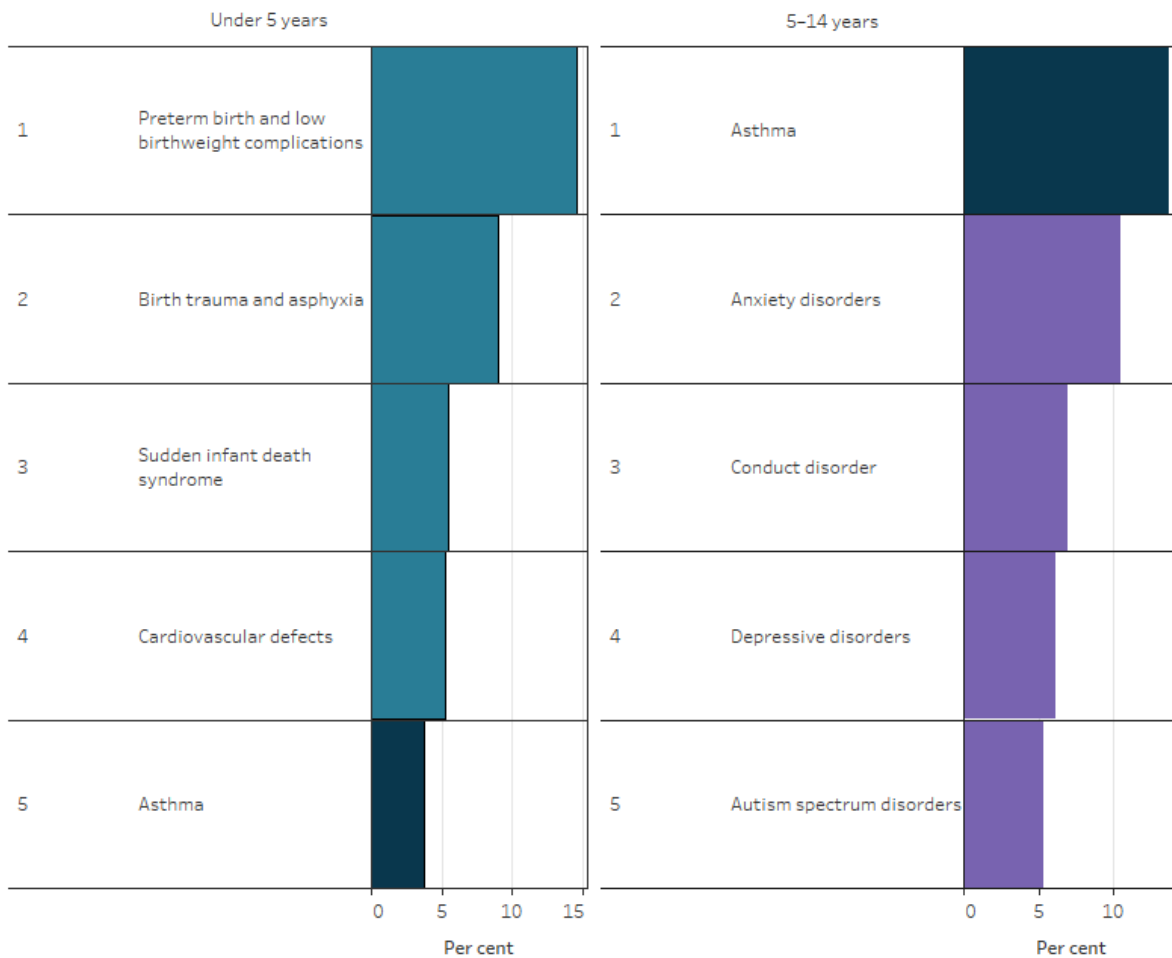
Mental health

Data on child and adolescent mental health are available from the Australian Child and Adolescent Survey of Mental Health and Wellbeing (also known as the Young Minds Matter survey). In 2013–14, an estimated 14% of children and adolescents aged 4–11 experienced a mental disorder in the 12 months prior to the survey. Boys were more commonly affected than girls (17% compared with 11%) (Table 1) (Lawrence et al. 2015).

Table 1: Prevalence of mental disorders among 4–11 year olds, by sex, 2013–14

Disorder	Males (%)	Females (%)	Persons (%)
Attention Deficit Hyperactivity Disorder	10.9	5.4	8.2
Anxiety disorders	7.6	6.1	6.9
Conduct disorder	2.5	1.6	2.0
Major depressive disorder	1.1	1.2	1.1
Any mental disorder[a]	16.5	10.6	13.6

(a) Totals are lower than the sum of disorders as children and adolescents may have had more than 1 class of mental disorder in the previous 12 months.

Source: Lawrence et al. 2017.

Overall, almost 3 in 4 (72%) children with some form of disorder had mild disorders; almost 1 in 5 (20%) had moderate disorders; and 8.2% of children had severe disorders. Severe disorders were more common among boys (9.9%) than girls (5.6%) (Lawrence et al. 2015).

See Mental health.

Disability

According to the Australian Bureau of Statistics (ABS) 2018 Survey of Disability, Ageing and Carers, around 7.7% (or 357,000) of Australian children aged 0–14 had disability. More boys (9.6%) than girls (5.7%) were affected by disability. Around 1 in 20 (4.5%, or 211,000) children had a severe or profound core activity limitation and 5.2% (241,000) of children aged 5–14 had a schooling restriction. Schooling restrictions are determined based on whether a person needs help, has difficulty participating, or uses aids or equipment in their education. Boys aged 5–14 were more likely than girls to have a schooling restriction (9.9% of boys and 5.6% of girls, respectively) (ABS 2019c).

The prevalence of disability has remained relatively stable over time for children. Since 2003, there has been little change in the prevalence for children aged 0–4 (4.3% in 2003 compared with 3.7% in 2018) or children aged 5–14 (10% in 2003 compared with 9.6% in 2018) (ABS 2019c).

Chronic conditions

According to the ABS 2017–18 National Health Survey (NHS), 46% of boys and 39% of girls aged 0–14 had 1 or more chronic conditions (ABS 2018c). Chronic conditions, also

known as long-term conditions or non-communicable diseases, refers to a wide range of conditions, illnesses and diseases that tend to be long- lasting with persistent effects. Chronic disease can interrupt a child's normal development and can increase the risk of being developmentally vulnerable at school entry (Bell et al. 2016).

According to the 2017–18 NHS, the 2 leading chronic conditions for children aged 0–14 were diseases of the respiratory system: 10% of children experienced asthma, and 10% experienced hay fever and allergic rhinitis. The third and fourth most common chronic conditions related to mental and behavioural disorders, such as anxiety-related problems (5.7% of children) and problems of psychological development (5.7%). The fifth most common chronic condition for children aged 0–14 was food allergies (5.5%) (ABS 2018c).

Injuries

In 2017–18, there were around 65,000 hospitalised injury cases among children aged 0–14, a rate of 1,400 per 100,000 children. Of these cases, 64,800 had a cause of injury recorded. The leading causes of these injuries were:

- falls (45%, or 29,300)

- exposure to inanimate mechanical forces (such as being struck or cut by something other than another human or animal) (20%, or 13,100)

- land transport accidents (9.5%, or 6,200) (Figure 2).

Overall, boys were 1.5 times as likely to sustain an injury that results in hospitalisation as girls (1,600 and 1,100 per 100,000 respectively). These differences varied by age—from 1.3 times for ages 0–4, to 1.7 times among 10–14 year olds.

See Injury.

Figure 2: Hospitalised injury cases for children aged 0–14, by causes of injury 2017–18

Sex
All children

Cause of injury

- Accidental poisoning
- All other causes
- Assault
- Burns and scalds
- Exposure to animate mechanical forces

- Exposure to inanimate mechanical forces
- Exposure to smoke, fire and flames
- Falls
- Intentional self-harm
- Land transport accidents
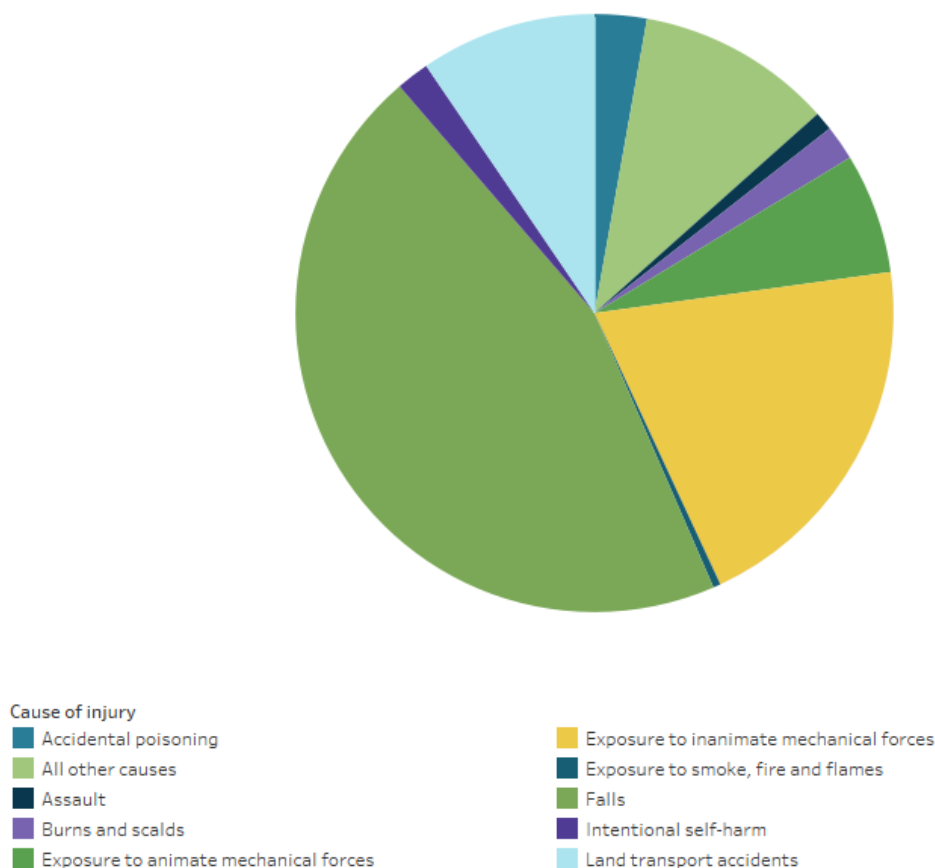
Source: AIHW National Hospital Morbidity Database.
http://www.aihw.gov.au/

During 2016–2018, injuries contributed to 532 deaths of children aged 0–14, a rate of 3.8 per 100,000 children. The leading causes of injury deaths were: land transport accidents (29%) (including road traffic deaths), accidental drowning (18%) and intentional self-harm (12%).

Deaths

In 2018, there were 988 deaths of infants under the age of 1—a rate of 3.1 per 1,000 live births. Infant deaths comprised over two-thirds (71%) of all deaths among children aged 0–14.

The leading causes of infant deaths were:

- perinatal conditions (52%)
- congenital conditions (25%)

- symptoms, signs and abnormal findings, including Sudden Infant Death Syndrome (9.4%).

In 2018, there were 396 deaths of children aged 1–14, a rate of 9.0 per 100,000 children. Across 2016–18, the leading causes of child deaths were injuries (including accidental drowning) (33%), cancer (20%) and disease of the nervous system (10%).

Overall, the death rate for children aged 1–14 has fallen between 1998 and 2018. Since 2011, the death rate has remained relatively stable around 9 to 12 deaths per 100,000. Similarly, the infant death rate has fallen from 5.7 deaths per 1,000 live births in 1998 to 3.1 per 1,000 live births in 2018.

See Causes of death.

Health risk factors

Nutrition

Good nutrition is key to supporting children's growth and development (NHMRC 2013).

In 2017–18:

- about 7 in 10 (72%) children aged 5–14 met the recommended guidelines for fruit consumption
- only 1 in 25 (4.4%) children aged 5–14 met the recommended guidelines for vegetable consumption (ABS 2019c).

Almost half (45%) of children aged 5–14 consumed either sugar-sweetened drinks or diet drinks at least once a week. The proportion was higher for children aged 10–14 (53%) than children aged 5–9 (33%) (ABS 2019c).

See Diet.

Physical activity

In addition to good nutrition, participating in physical activity and limiting sedentary behaviour is critical to a child's health, development and psychosocial wellbeing.

In 2011–12:

- less than one-quarter (23%) of children aged 5–14 undertook the recommended 60 minutes of physical activity every day
- less than one-third (32%) met the screen-based activity guidelines
- only 1 in 10 (10%) children met both sets of guidelines each day (ABS 2013).

On average, children aged 5–14 spent around 2 hours (123 minutes) each day sitting or lying down for screen-based activities, with only 3.5 minutes of this being for homework. Children aged 10–14 spent more time in front of screens (145 minutes) on average in a day than children aged 5–9 (102 minutes) (ABS 2013).

See Insufficient physical activity.

Overweight and obesity

In 2017–18, while the majority of children aged 5–14 (67% or just over 1 million) were a normal weight, an estimated 746,000 or 24% of children were overweight or obese. Almost 8% of all children were obese. The proportions of overweight and obesity were similar for boys and girls across age groups. The prevalence of overweight and obesity among children aged 5–14 remained relatively stable between 2007–08 and 2017–18 (ABS 2019c).

For further detail of how overweight and obesity is defined and measured, see Overweight and obesity.

Health care

Immunisation

Measuring childhood immunisation coverage helps track how protected the community is against vaccine-preventable diseases, and reflects the capacity of the health care system to effectively target and provide vaccinations to children.

In 2018, more than 9 in 10 (91%) children aged 2 were fully immunised. Coverage rates for 2 year olds are slightly lower than for 1 year olds (94%) and 5 year olds (95%) due to changes to the National Immunisation Program Schedule in 2016 (Department of Health 2019).

The proportion of children fully immunised at 2 years old remained relatively stable at around 91–93% between 2009 and 2018, dropping slightly to 89% in 2015 and 90% in 2017 (Department of Health 2019).

See Immunisation and vaccination.

Emergency department presentations

In 2018–19, children aged 0–14 accounted for more than 1 in 5 (21%) emergency department presentations. Boys aged 0–14 accounted for almost one-quarter (24%) of emergency department presentations by males. Girls aged 0–14 accounted for 19% of all emergency department presentations by females (AIHW 2019d).

Where do I go for more information?

For more information on the health of children, see:

- Australia's children
- Children's headline indicators
- National framework for protecting Australia's children indicators
- Council of Australian Governments Health Council COAG Healthy, Safe and Thriving: National Strategic Framework for Child and Youth Health

Visit Children & youth for more on this topic.

References

ABS (Australian Bureau of Statistics) 2013. Microdata: Australian Health Survey: nutrition and physical activity, 2011–12, TableBuilder. Findings based on AIHW analysis of ABS TableBuilder data. Canberra: ABS.

ABS 2018b. Estimates of Aboriginal and Torres Strait Islander Australians, June 2016. ABS cat. no. 3238.0.55.001. Canberra: ABS.

ABS 2018c. National Health Survey: first results, 2017–18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

ABS 2018d. Population projections, Australia, 2017 (base)–2066. ABS cat. no. 3222.0. Canberra: ABS.

ABS 2018a. Regional population by age and sex, Australia, 2017. ABS cat. no. 3235.0. Canberra: ABS.

ABS 2019a. Australian demographic statistics, Jun 2019. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2019b. Disability, ageing and carers, Australia: summary of findings, 2018. ABS cat. no. 4430.0. Canberra: ABS.

ABS 2019c. Microdata: National Health Survey 2017–18. ABS cat. no. 4364.0.55.001. Findings based on AIHW analysis using TableBuilder.

ABS 2019d. Regional population by age and sex, Australia, 2018. ABS cat. no. 3235.0. Canberra: ABS.

AHMAC (Australian Health Ministers' Advisory Council) 2015. Healthy, safe and thriving: national strategic framework for child and youth health. Adelaide: AHMAC. Viewed 24 September 2019.

AIHW (Australian Institute of Health and Welfare) 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. Australia's children. Cat. no. CWS 69. Canberra: AIHW.

AIHW 2019c. Australia's mothers and babies 2017—in brief. Perinatal statistics series no. 34. Cat. no. PER 100. Canberra: AIHW.

AIHW 2019d. Emergency department care 2018–19. Cat. No. HSE 223. Canberra: AIHW.

Bell MF, Bayliss DM, Glauert R & Ohan JL 2016. Chronic illness and developmental vulnerability at school entry. Pediatrics 137(5).

Department of Health 2019. Current coverage data tables for all children. Canberra: Department of Health. Viewed 25 July 2019.

Lawrence D, Johnson S, Hafekost J, Boterhoven De Haan K, Sawyer M, Ainley J & Zubrock SR 2015. The mental health of children and adolescents. Report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. Canberra: Department of Health. Viewed 17 May 2019, https://www.health.gov.au/internet/main/publishing.nsf/Content/9DA8CA21306FE6EDC A257E2700016945/%24File/child2.pdf.

NHMRC (National Health and Medical Research Council) 2013. Australian Dietary Guidelines. Canberra: National Health and Medical Research Council.

Redmond G, Skattebol J, Saunders P, Lietz P, Zizzo f, O'Grady E et al. 2016. Are the kids alright? Young Australians in their middle years: final report of the Australian Child Wellbeing Project. Flinders University, University of New South Wales and Australian Council for educational Research. Viewed 24 September 2019.

Health of mothers and babies

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/health-of-mothers-and-babies

More than 300,000 babies are born in Australia each year. The health of a baby at birth is a key determinant of their health and wellbeing throughout life. For mothers, maintaining a healthy lifestyle during pregnancy and attending routine antenatal care contributes to better outcomes for both mother and baby.

This page uses data from the National Perinatal Data Collection (AIHW 2020a, 2020b) to explore aspects of pregnancy and childbirth as well as key outcomes for babies at birth.

Profile of mothers and babies

About 299,000 women gave birth to around 303,000 babies in 2018. While the number of babies born and women giving birth has been increasing, the rate of women giving birth has fallen from 65 per 1,000 women of reproductive age (15–44) in 2008 to 58 per 1,000 women in 2018.

In 2018:

- 73% of mothers lived in *Major cities*—lower than the proportion of women of reproduction age in the population (76%)

- 35% of mothers were born overseas—higher than the proportion of women of reproduction age in the population (34%)

- 20% of mothers were from the lowest socioeconomic areas—higher than the proportion of women of reproduction age in the population (17%)

- 4.6% of mothers were of Aboriginal and Torres Strait Islander origin—slightly higher than the proportion of Indigenous women of reproduction age in the population (3.6%)

- 51% of babies born were male, with a ratio of 106 live born boys to 100 live born girls

- 5.7% of babies born were Indigenous babies.

Detailed information on mothers and babies from population groups, such as Indigenous mothers and babies or those from remote areas, is available from Australia's mothers and babies 2018—in brief and Australia's mothers and babies data visualisations.

Mothers

Maternal age

Maternal age is an important risk factor for both obstetric and perinatal outcomes. Adverse outcomes are more common in younger and older mothers. Women in Australia are continuing to give birth later in life:

- The average age of women who gave birth was 30.7 in 2018 compared with 29.9 in 2008.

- The proportion of women giving birth aged 35 and over remained relatively stable from 23% in 2008 to 24% in 2018, while the proportion aged under 25 decreased from 19% to 13% (Figure 1).

Figure 1: Health factors of mothers, 2013 to 2018

Filter by
Antenatal visits for first time mothers
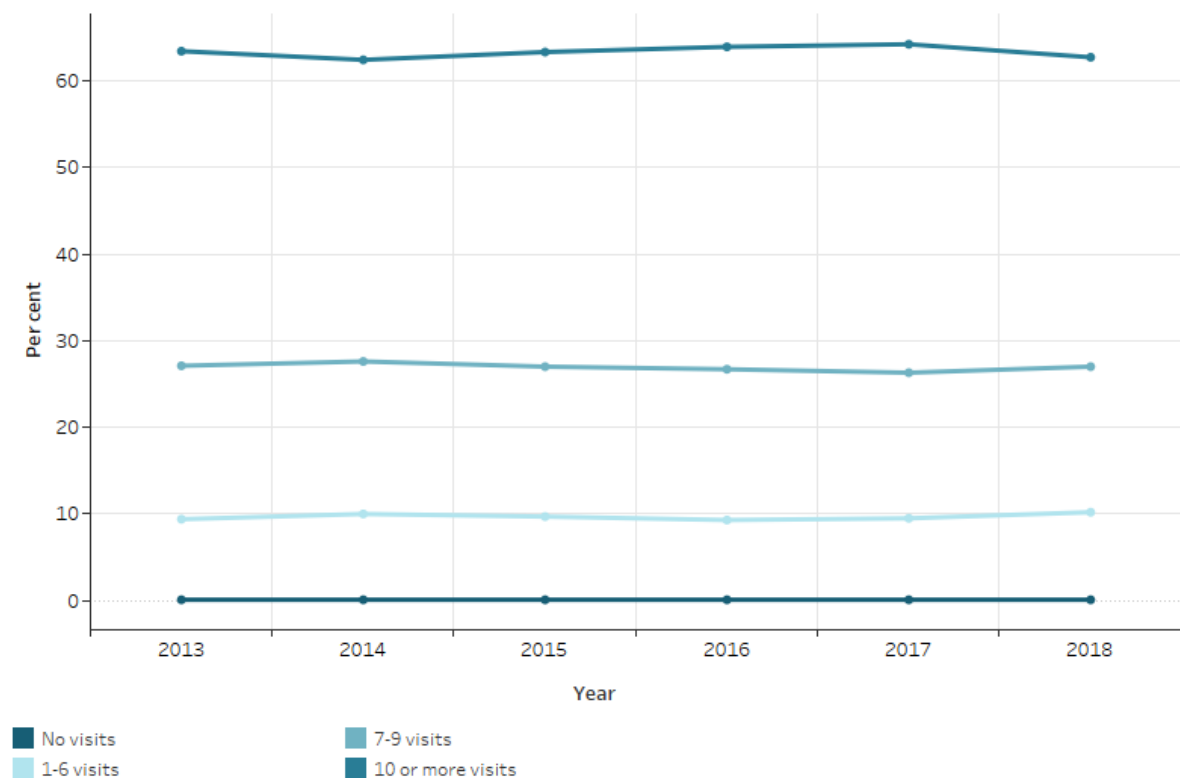
Notes:
1. Trend data excludes Victoria
2. Percentage calculated after excluding records with Not stated values. Care must be taken when interpreting percentages.

Source: National Perinatal Data Collection.
https://www.aihw.gov.au/reports-data/population-groups/mothers-babies/reports

Smoking status

Smoking during pregnancy is the most common preventable risk factor for pregnancy complications and is associated with poorer perinatal outcomes, including low birthweight, being small for gestational age, pre-term birth and perinatal death. Women who stop smoking during pregnancy can reduce the risk of adverse outcomes for themselves and their babies. Support to stop smoking is widely available through antenatal clinics.

One in 10 (9.6%) mothers who gave birth in 2018 smoked at some time during their pregnancy, a decrease from 15% in 2009 (Figure 1). Of mothers who were smoking at the start of their pregnancy, 1 in 5 (20%) quit smoking during pregnancy.

Antenatal care

Antenatal care is a planned visit between a pregnant woman and a midwife or doctor to assess and improve the wellbeing of the mother and baby throughout pregnancy. Routine antenatal care, beginning in the first trimester (before 14 weeks gestational age), is known to contribute to better maternal health in pregnancy, fewer interventions in late pregnancy, and positive child health outcomes (AHMAC 2011; WHO RHR 2015).

Australian Pregnancy Care Guidelines

The Australian Pregnancy Care Guidelines recommend that the first antenatal visit occur within the first 10 weeks of pregnancy and that first-time mothers with an uncomplicated pregnancy have 10 antenatal visits (7 visits for subsequent uncomplicated pregnancies) (Department of Health 2018).

Looking at the number of antenatal visits by mothers who gave birth at 32 weeks or more gestation in 2018:

- almost all mothers (99.8%) used antenatal care during pregnancy
- 61% of mothers received antenatal care within the first 10 weeks of pregnancy
- 63% of first-time mothers had at least 10 antenatal visits during pregnancy and 85% of mothers who had given birth previously had at least 7 visits— the rates have remained steady since 2013 (excludes data from Victoria) (Figure 1).

Method of birth

In 2018, 65% of mothers (193,000) had a vaginal birth and 35% (105,000) had a caesarean section (Figure 2).

Around half of all births were non-instrumental vaginal births (52% of all births). When instrumental births were required, vacuum extraction was more common than forceps (8% and 5% of all births, respectively) (Figure 2).

Since 2008, the rate of non-instrumental vaginal births decreased (from 58% in 2008 to 52% in 2018) whereas the caesarean section rate increased (from 31% in 2008 to 35% in 2018) (Figure 2). The rate of vaginal birth with instruments was relatively stable over this time, between 11% and 13%. These trends remain when changes in maternal age over time are taken into account.

Figure 2: Health factors of mothers, 2018
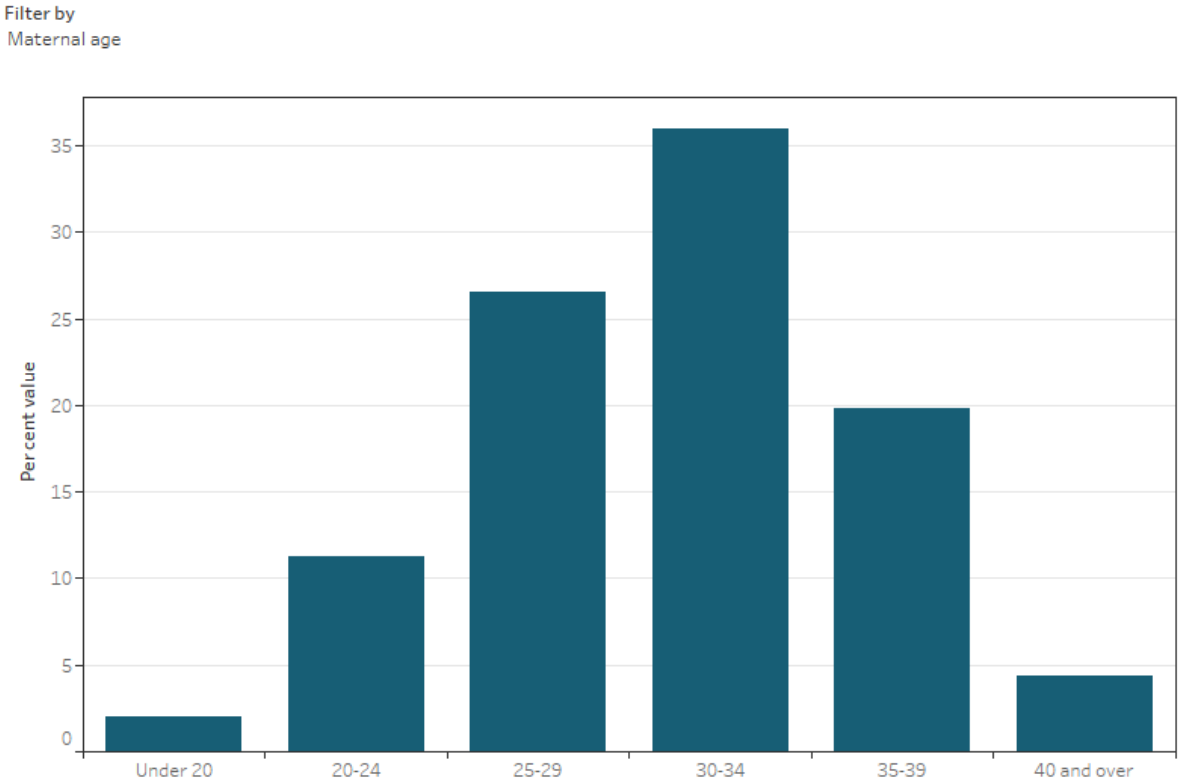
Notes:
1. Mother's tobacco smoking status during pregnancy is self-reported.
2. Percentages calculated after excluding records with Not stated values. Care must be taken when interpreting percentages.

Source: National Perinatal Data Collection.
https://www.aihw.gov.au/reports-data/population-groups/mothers-babies/reports

Babies

Gestational age

Gestational age is the duration of pregnancy in completed weeks. Gestational age is reported in 3 categories: pre-term (less than 37 weeks gestation), term (37 to 41 weeks) and post-term (42 weeks and over). The gestational age of a baby has important implications for their health, with poorer outcomes generally reported for those born early. Pre-term birth is associated with a higher risk of adverse neonatal outcomes.

In 2018:

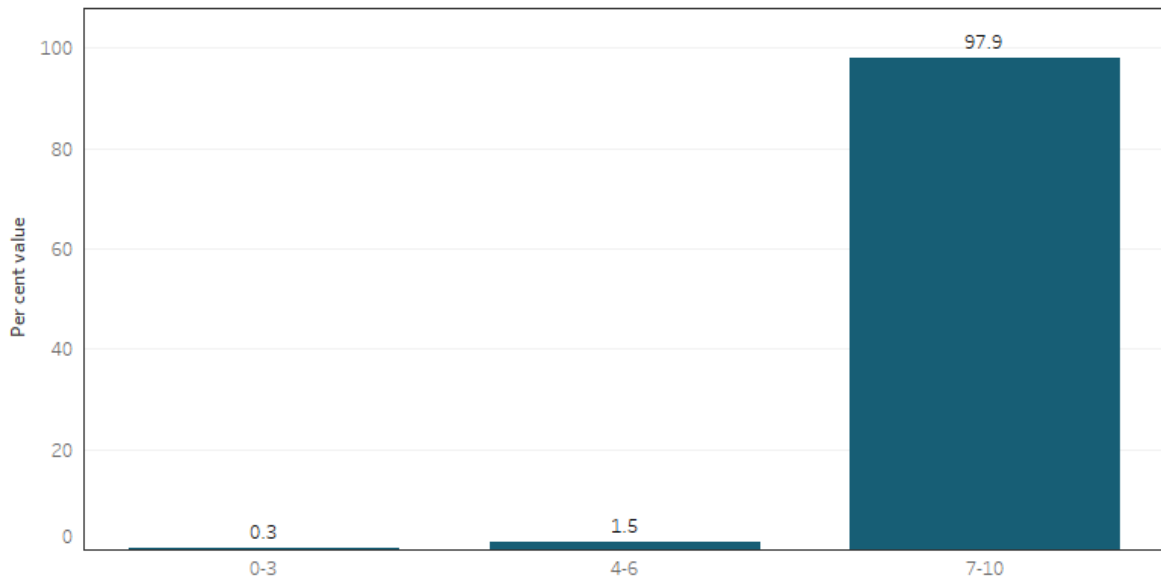- the median gestational age for all babies was 39 weeks
- 91% of all babies born were born at term (Figure 3).

Figure 3: Apgar score at 5 minutes of babies, 2018

Filter by
Apgar score at 5 minutes

Note: Includes liveborn babies only.

Source: *National Perinatal Data collection.*
https://www.aihw.gov.au/reports-data/population-groups/mothers-babies/reports

Birthweight

Birthweight is a key indicator of infant health and a principal determinant of a baby's chance of survival and good health. A birthweight below 2,500 grams is considered low and is a known risk factor for neurological and physical disabilities. A baby may be small due to being born early (pre-term) or be small for gestational age, for example, due to fetal growth restriction within the uterus.

In 2018, 6.7% of babies born in Australia were low birthweight (Figure 3), and there has been little change since 2008. Birthweight and gestational age are closely related—low birthweight babies made up 57% of babies who were pre-term compared with only 2% of babies born at term.

Apgar score at 5 minutes

Apgar scores are clinical indicators that determine a baby's condition shortly after birth. These scores are measured on a 10-point scale for several characteristics. An Apgar score of 7 or more at 5 minutes after birth indicates the baby is adapting well post-birth.

The vast majority (98%) of live born babies in 2018 had an Apgar score of 7 or more at 5 minutes after birth (Figure 3). This rate has remained steady since 2008.

Resuscitation

Resuscitation is undertaken to establish independent breathing and heartbeat or to treat depressed respiratory effort and to correct metabolic disturbances. Resuscitation methods range from less intrusive methods like suction or oxygen therapy to more intrusive methods, such as external cardiac massage and ventilation. If more than 1 type of resuscitation is performed, the most intrusive type is recorded.

Almost 1 in 5 (19%) live born babies required active resuscitation immediately after birth in 2018. Where resuscitation was required, intermittent positive pressure ventilation (IPPV) was the most common methods used (33% of babies requiring resuscitation), followed by suction or oxygen therapy (31%) (Figure 3). Data are for live born babies only, and exclude Western Australia.

Babies who required resuscitation were also more likely to have an Apgar score between 4 and 6 at 5 minutes—indicating that they have not adapted well post-birth—and to be admitted to a special care nursery or neonatal intensive care unit.

Stillbirth and neonatal deaths

A stillbirth is the death of a baby before birth, at a gestational age of 20 weeks or more, or a birthweight of 400 grams or more. A neonatal death is the death of a live born baby within 28 days of birth. Perinatal deaths include both stillbirth and neonatal deaths.

In 2018, there were 9.2 perinatal deaths for every 1,000 births, a total of 2,911 perinatal deaths. This included:

- 2,118 stillbirths, a rate of 7.0 deaths per 1,000 births
- 671 neonatal deaths, a rate of 2.2 deaths per 1,000 live births.

Between 2008 and 2018 the stillbirth and neonatal mortality rates have remained largely unchanged at between 7 and 8 in 1,000 births and between 2 and 3 in 1,000 live births, respectively.

Where do I go for more information?

For more information on the health of mothers and babies, see:

- Australia's mothers and babies 2018—in brief
- Australia's mothers and babies data visualisations
- Stillbirths and neonatal deaths in Australia 2015 and 2016
- Maternal deaths in Australia
- National Core Maternity Indicators

Visit Mothers and babies for more on this topic.

References

AIHW (Australian Institute of Health and Welfare) 2020a. Australia's mothers and babies data visualisations. Cat. no. PER 101. Canberra: AIHW.

AIHW 2020b. Australia's mothers and babies 2018—in brief. Perinatal statistics series no. 35. Cat. no. PER 100. Canberra: AIHW.

AHMAC (Australian Health Ministers' Advisory Council) 2011. National Maternity Services Plan. Canberra: Australian Government Department of Health and Ageing.

Department of Health 2018. Clinical Practice Guidelines: Pregnancy care. Canberra: Australian Government Department of Health. Viewed 1 September 2019.

WHO RHR (World Health Organization Department of Reproductive Health and Research) 2015. WHO statement on caesarean section rates. WHO/RHR/15.02. Geneva: WHO. Viewed 1 September 2019.

Health of older people

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/health-of-older-people

At 30 June 2018, an estimated 3.9 million Australians (16% of the total population) were aged 65 or over (ABS 2019a, 2019b). This is projected to increase to 21–23% by 2066 (ABS 2018). Age is an important determinant of health as ageing is accompanied by increased risk of declining health and functional limitations.

This page looks at older Australians—generally those aged 65 and over, unless otherwise specified.

Profile of older people

At 30 June 2018, 1 in every 6 Australians (16%) were aged 65 or over, and of those people:

- 53% were female
- 13% were aged 85 and over
- less than 0.1% were aged 100 and over (Figure 1).

People at risk

Some groups of older Australians may face barriers in accessing and engaging with the essential supports and services that contribute to better health. Groups at risk include people who are culturally or linguistically diverse; people who are alone or homeless; and people who need assistance with daily living or housing. On the night of the 2016 Census of Population and Housing:

- 37% of people aged 65 and over were born outside Australia
- 24% of people aged 65 and over lived alone
- 18% of people aged 65 and over spoke a language other than English at home
- 16% of people who were homeless were aged 55 and over
- 12% of people aged 50 and over had a need for assistance with a core daily living activity.

Remoteness areas

Australia can be broadly divided into 5 areas *based on service accessibility*: *Major cities*, *Inner regional*, *Outer regional*, *Remote* and *Very remote.* People in *Outer regional*, *Remote* and *Very remote* areas are more likely to have poorer health and higher death rates

(AIHW 2019c) than other Australians. Older Australians are generally more likely than people aged under 65 to live in these areas. In 2018, 33% of older Australians lived in outer regional, remote and very remote areas, compared with 25% of people under 65 (ABS 2019c) (Figure 1). The effect of remoteness is influenced by the higher proportion of Aboriginal and Torres Strait Islander people in the population and the different rates of health outcomes they can experience.

See Rural and remote health for more information.

Figure 1: Profile of people aged 65 and over in Australia, by remoteness, as at 30 June 2018

View by
◉ Remoteness
◯ Age group
◯ Sex
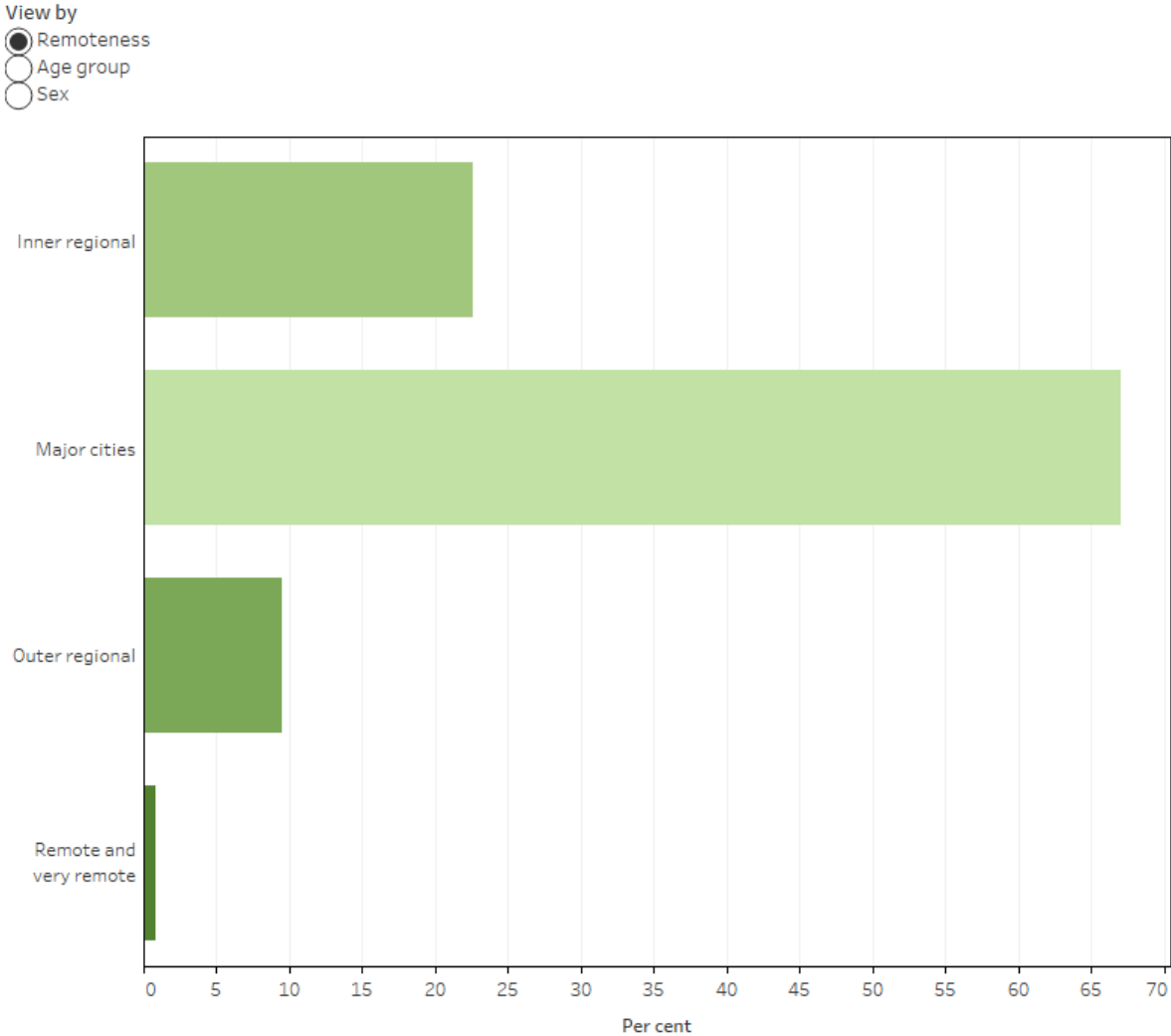
Source: AIHW analysis of ABS TableBuilder 2019c and ABS 2018.
http://www.aihw.gov.au

Health status

Self-assessed health

Generally, self-assessment of health status declines with age (ABS 2019e). 'Excellent or very good' self-assessment of health is highest in those aged 15–24 at 68%, but decreases to 42% for people aged 65 and over.

Life expectancy

Life expectancy for Australians has increased, and people can expect more years free of disability. In 2016–2018, Australian men aged 65 could expect to live for another 19.9 years, and women another 22.6 years (ABS 2019d). Years free of disability increased from 59.1 years in 2003 to 63.0 in 2015 for men, and 62.2 years in 2003 to 65.2 in 2015 for women (AIHW 2017).

At age 65, around three-quarters of life expectancy was healthy years. See 'Longer lives, healthier lives?' in Australia's health 2020: data insights for more information.

Deaths

In 2017, there were more than 130,000 deaths of people aged 65 and over (82% of all deaths). Of these deaths (AIHW 2019b):

- 19% were of people aged 65–74
- 31% were of people aged 75–84
- 41% were of people aged 85–94
- 9.0% were of people aged 95 and over.

The leading cause of death for older Australians was coronary heart disease, followed by dementia and Alzheimer's disease, and cerebrovascular disease (AIHW 2019b).

The leading cause of death for men aged 75 and over was coronary heart disease, accounting for 21,000 deaths (13−18% of deaths depending on age). Dementia and Alzheimer's disease was the leading cause of death for women aged 75 and over, accounting for 24,500 deaths (10−19% of deaths depending on age) (Figure 2). See Causes of death for more information.

Figure 2: Leading cause of death for people aged 65 and over, by rank, age, and sex, 2015–17
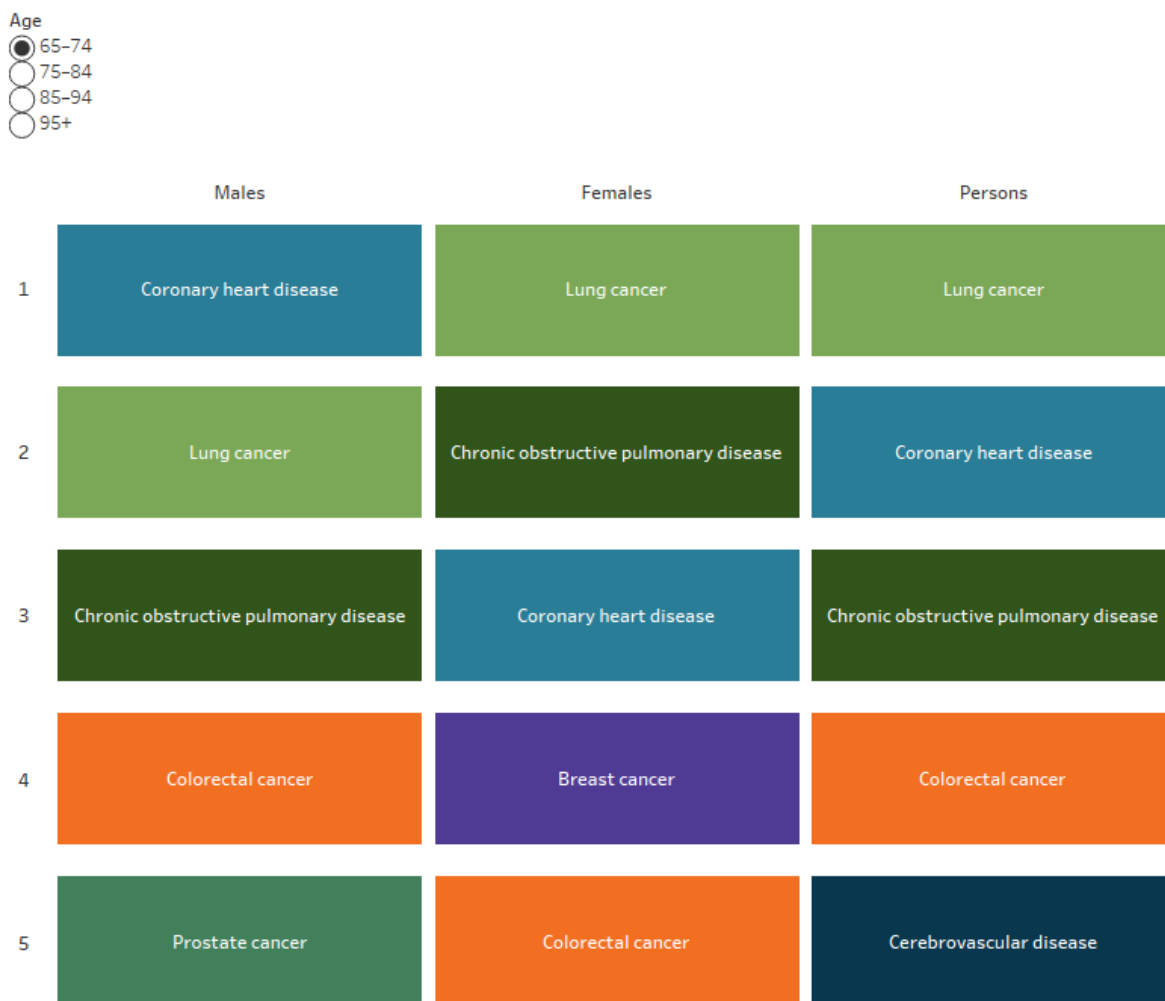
Age
◉ 65–74
◯ 75–84
◯ 85–94
◯ 95+

	Males	Females	Persons
1	Coronary heart disease	Lung cancer	Lung cancer
2	Lung cancer	Chronic obstructive pulmonary disease	Coronary heart disease
3	Chronic obstructive pulmonary disease	Coronary heart disease	Chronic obstructive pulmonary disease
4	Colorectal cancer	Breast cancer	Colorectal cancer
5	Prostate cancer	Colorectal cancer	Cerebrovascular disease

Source: AIHW 2019b.
http://www.aihw.gov.au

Burden of disease

Burden of disease analysis is the best measure of the impact of different diseases or injuries on a population. It combines the years of healthy life lost due to living with ill health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden). See Burden of disease for more information.

Overall, fatal burden contributed to nearly two-thirds (61%) of the total health burden in people aged 65 and over, and non-fatal burden the remaining 39% (AIHW 2019a). Cancer had the largest fatal component of all disease groups (92%), followed by infectious diseases (84%) and cardiovascular diseases (78%). The burden due to hearing and vision disorders, oral disorders and musculoskeletal conditions was largely non-fatal (Figure 3) (AIHW 2019a).

Figure 3: Fatal and non-fatal component of total burden for older Australians, by age and disease group, 2015

Age group
65+
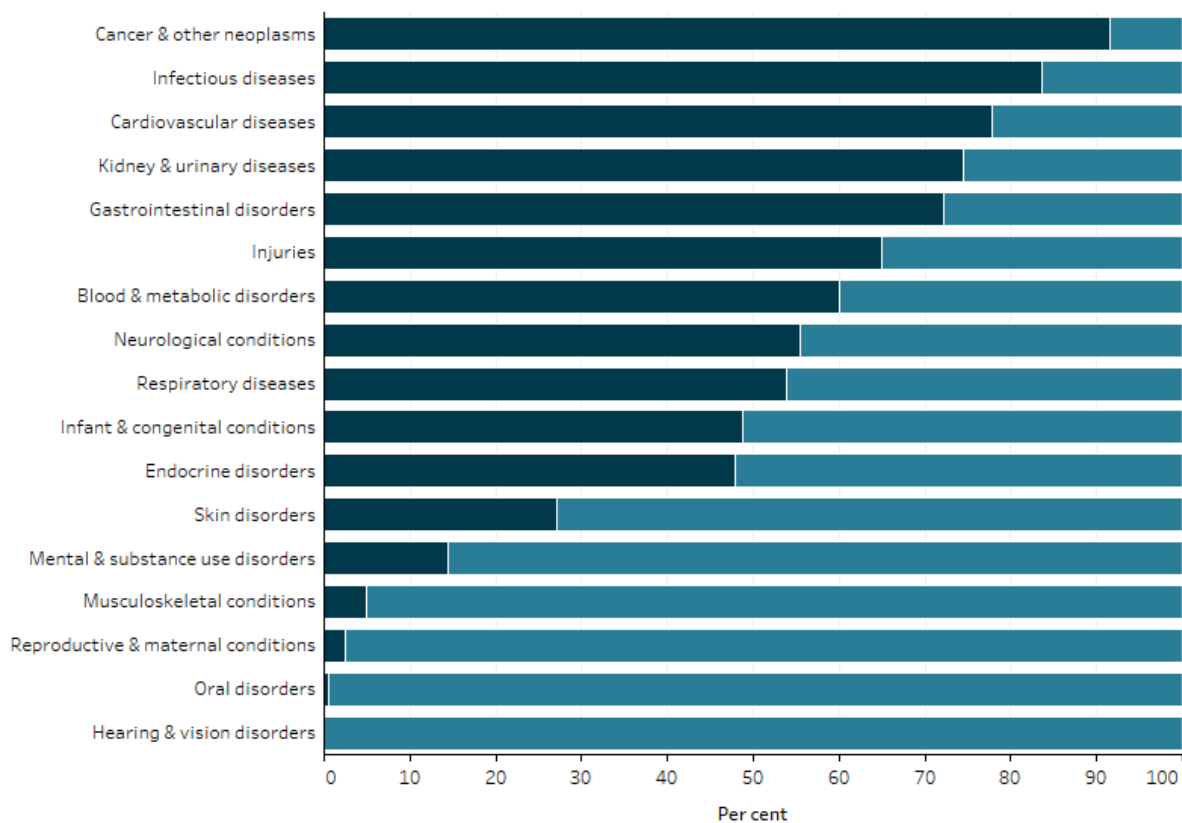
Component of total burden
■ Fatal burden (YLL) ■ Non-fatal burden (YLD)

Note: Fatal burden is quantified as the impact on a population of premature death due to disease or injury. Measured as years of life lost (YLL). Non-fatal burden is quantified as the impact on a population of ill health due to disease or injury. Measured as years lived with disability (YLD).
Source: AIHW 2019a.
http://www.aihw.gov.au/

Health risk factors

Many serious health issues, including some chronic diseases (such as cardiovascular disease, chronic kidney disease, certain types of cancer, type 2 diabetes, and high blood pressure) are related to lifestyle factors—such as insufficient physical activity, poor nutrition, obesity, smoking, excessive alcohol consumption and psychological distress.

Older Australians fare better than younger Australians on some behavioural risk factors—for example, they are half as likely to smoke and are much less likely to exceed the single occasion risk alcohol consumption guideline—but they are more likely to be overweight or obese and insufficiently physically active (Table 1).

Table 1: Behavioural risk factors, by age group, 2017–18

Behavioural risk factor	Aged 65 and over (%)	Aged 18–24 (%)
Overweight or obese (BMI 25 or more)	75.6	46.0
Current daily smoker	7.0	13.9
Exceeded lifetime risk guideline for alcohol consumption[a]	15.3	10.6
Exceeded single occasion risk guideline for alcohol consumption[a]	18.2	60.9
Did not meet recommended daily consumption of fruit and vegetables	91.8	96.9
Insufficient physical activity[b]	71.9	44.6

(a)   National Health and Medical Research Council (NHMRC) Australian guidelines to reduce health risks from drinking alcohol (2009): Guideline 1 (lifetime risk) recommends drinking no more than 2 standard drinks per day. Guideline 2 (single occasion risk) recommends drinking no more than 4 standard drinks on a single occasion.

(b) For 18–64 year olds, insufficient physical activity is captured here as not completing 150 minutes of moderate to vigorous activity (where time spent on vigorous activity is multiplied by 2) across 5 or more days a week. For adults aged 65 and over, insufficient physical activity is captured here as not completing 30 minutes or more of physical activity on at least 5 days each week.

Source: ABS 2019e; AIHW 2019d .

There are multiple data sources for information on tobacco smoking and alcohol consumption among older people. The latest results from the 2019 National Drug Strategy Household Survey (NDSHS) estimated that between 2001 and 2019, the proportion of older people exceeding the single occasion risk guidelines has increased (13.8% in 2001 and 15.6% in 2019) and there has been little improvement in daily smoking rates (7.1% in 2001 and 6.0% in 2019) (Table 2).

Table 2: Selected behavioural risk factors, by age group, 2019

Behavioural risk factor	Aged 65 and over (%)		Aged 18–24 (%)	
	2001	2019	2001	2019
Exceeded single occasion risk guideline for alcohol consumption[a]	13.8	15.6	71.6	55.8

Behavioural risk factor	Aged 65 and over (%)		Aged 18–24 (%)	
Exceeded lifetime risk guideline for alcohol consumption[a]	13.6	13.4	31.0	18.8
Current daily smoker	7.1	6.0	24.0	9.2

(a)   National Health and Medical Research Council (NHMRC) Australian guidelines to reduce health risks from drinking alcohol (2009): Guideline 1 (lifetime risk) recommends drinking no more than 2 standard drinks per day. Guideline 2 (single occasion risk) recommends drinking no more than 4 standard drinks on a single occasion.

Source: 2019 NDSHS.

Health and aged care

Australia's health and aged care systems are complex. There are many types of service providers and a variety of funding mechanisms (see also Health system overview for more information). Health and aged care services include those provided by medical practitioners, specialists, other health professionals, hospitals and clinics; and community-based and residential aged care services (including respite).

Aged care

Aged care is personal and/or nursing care that supports older people to stay as independent and healthy as they can. This care is usually delivered in residential facilities or through care visits to the home. Government-funded programs offer 3 types of mainstream aged care:

- **Residential aged care**, which offers long-term stays in an aged care facility on either a permanent or respite care basis.

- **Home care** (Home Care Packages Program), which provides different levels of aged care services for people in their own homes. It is considered to be community-based aged care.

- **Home support** (Commonwealth Home Support Programme), which provides entry-level support at home. It is also considered to be community-based aged care.

At 30 June 2018, people aged 65 and over were more likely (70%) to have seen a medical specialist for their own health in the last 12 months than people aged under 65 (59%) (ABS 2019c). Conversely, people aged under 65 were more likely (51%) to have seen a dentist, dental hygienist, or dental specialist for their own health in the last 12 months than people aged 65 and over (48%) (Table 3).

Table 3: Use of medical services in last 12 months, by age group, 2018

Medical service use in last 12 month	Aged under 65 (%)	Aged 65 and over (%)
Has seen a GP	90.1	97.5
Has been admitted to hospital	21.2	28.1
Has seen a dental professional	50.9	48.3
Has seen a medical specialist	58.7	69.8

Note: Excludes not applicables

Source: ABS 2019c.

In 2018–19, more than 826,300 older clients (aged 65 and over and Indigenous Australians aged 50–64) used home support (Department of Health 2019). This includes more than 8,600 people aged 50–64 who identified as Indigenous.

At 30 June 2019 almost 183,400 older clients were living in residential aged care and 105,200 were using home care. This includes:

- almost 104,200 people aged 65 and over, and 900 people aged 50–64 who identified as Indigenous, using home care
- around 177,000 people aged 65 and over, and around 360 people aged 50–64 who identified as Indigenous, living in permanent residential care
- around 5,900 people aged 65 and over, and almost 20 people aged 50–64 who identified as Indigenous, living in respite residential care.

Not included above are people using aged care who do not have an Indigenous identification recorded.

In addition to the programs shown here, the National Aboriginal and Torres Strait Islander Flexible Aged Care Program provides culturally appropriate care for Indigenous people in locations close to their communities.

Medicare claims

In 2018–19, there were just over 36 million Medicare claims for general practitioner (GP) attendances for people aged 65 and over—29% of the total 124 million claims for GP attendances (DHS 2019). There were more than twice as many claims per person for those aged 65 and over than for those aged under 65 (9.3 compared with 4.2 claims) (DHS 2019; ABS 2019a).

Where do I go for more information?

For more information on health of older people, see:

- GEN aged care data

- Older Australia at a glance

- Interfaces between the aged care and health systems in Australia—first results

- Australian Bureau of Statistics (ABS) National Health Survey: first results, 2017–18

- ABS Disability, ageing and carers, Australia: summary of findings, 2018

Visit Older people for more on this topic.

References

ABS (Australian Bureau of Statistics) 2018. Population projections, Australia, 2017 (base)–2066. ABS cat. no. 3222.0. Canberra: ABS.

ABS 2019a. Australian demographic statistics, March 2019. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2019b. Disability, Ageing and Carers, Australia: summary of findings, 2018. October 2019. ABS cat. no. 4430.0. Canberra: ABS.

ABS 2019c. Disability, Ageing and Carers, Australia: summary of findings, 2018. October 2019. ABS cat. no. 4430.0. Findings based on TableBuilder analysis. Canberra: ABS.

ABS 2019d. Life tables, states, territories and Australia, 2016–18. cat. no. 3302.0.55.001. Canberra: ABS.

ABS 2019e. National Health Survey: first results, 2017–18. ABS cat. no. 4364.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2017. Life expectancy and disability in Australia: expected years living with and without disability. Cat. no. DIS 66. Canberra: AIHW.

AIHW 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. Deaths in Australia. Cat. no. PHE 229. Canberra: AIHW.

AIHW 2019c. Rural & remote health. Cat. no. PHE 255. Canberra: AIHW.

AIHW 2019d. Insufficient physical activity. Cat. no. PHE 248. Canberra: AIHW

AIHW 2020. National Drug Strategy Household Survey 2019. Drug Statistics series no. 32. Cat. no. PHE 270. Canberra: AIHW.

Department of Health 2019. Aged care data snapshot 2019—fourth release. Canberra: Department of Health. Viewed 04 February 2020.

DHS (Department of Human Services) 2019. Medicare Australia statistics, MBS group by patient demographics reports. Canberra: DHS. Viewed 04 September 2019.

Health of people with disability

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/health-of-people-with-disability

An estimated 1 in 6 people in Australia (17.7% or 4.4 million people) had disability in 2018, including about 1.4 million people (5.7% of the population) with severe or profound disability (ABS 2019a) (see defining disability). Disability and health have a complex relationship—long-term health conditions might cause disability, and disability can contribute to health problems. The nature and extent of a person's disability can also influence their health experiences. For example, it may limit their access to, and participation in, social and physical activities.

In general, people with disability report poorer general health and higher levels of psychological distress than people without disability. They also have higher rates of some modifiable health risk factors and behaviours, such as poor diet and tobacco smoking, than people without disability.

This page looks at the health of people with disability, the risks to their health, and their experiences of health care.

Measuring disability

There are many different concepts and measures of disability, making comparisons across different data sources challenging. The AIHW promotes measures based on the International Classification of Functioning, Disability and Health (WHO 2001), which underpins the disability categories used here.

The data used in this analysis are primarily from the Australian Bureau of Statistics (ABS) Survey of Disability, Ageing and Carers (SDAC) 2018 and National Health Survey (NHS) 2017–18.

These survey data are supplemented with administrative data from the National Disability Insurance Scheme (NDIS) and Disability Support Pension (DSP). At 30 June 2019, almost 300,000 people with disabilities had joined the NDIS (NDIA 2019a).

The Disability Support Pension is available to Australians who meet eligibility criteria and have reduced capacity to work because of their disability (DSS 2015). At 30 June 2019, around 746,000 people received the DSP (AIHW 2019).

Defining disability

This page groups people with disability as people:

- with severe or profound core activity limitation—unable to do, or always or sometimes needs help with, a core activity (self-care, mobility and communication); this is referred to in this analysis as 'with severe or profound disability'

- without severe or profound core activity limitation—has a mild or moderate core activity limitation, or has restriction in schooling or employment; this is referred to in this analysis as 'with other forms of disability'.

To identify disability, the SDAC asks participants if they have at least 1 of a list of limitations, restrictions or impairments, which has lasted, or is likely to last, for at least 6 months and that restricts everyday activities (ABS 2019a). The NHS asks similar questions but with less detail (ABS 2019b).

Unlike the SDAC, the NHS does not report on people living in institutional settings, such as aged care facilities (ABS 2019b). To avoid under-representing disability among certain groups, this page focuses on people who live in households, except where specified.

Profile of people with disability

The disability population is diverse. It encompasses people with varying types and severities of disability across all parts of Australian society. Knowing how many Australians have disability, and their characteristics, can help us to plan and provide the supports, services and communities that enable people with disability to participate fully in everyday life.

While the number of people with disability in Australia has increased to 4.4 million in 2018 (up from 4.0 million in 2009), the prevalence rate has decreased over this period (18.5% of the population in 2009 down to 17.7% in 2018) (ABS 2019a).

Overall, the likelihood of experiencing disability increases with age for both males and females. This means the longer people live, the more likely they are to experience some form of disability. For example, only 3.7% of children aged 0–4 had disability, whereas 85% of adults aged 90 and over had disability in 2018 (ABS 2019a). More information on the prevalence of disability is described in the AIHW report People with disability in Australia.

Health status

In the 2017–18 NHS, adults with disability were more likely to rate their general health as 'fair or poor' (42%) than 'very good or excellent' (24%). Adults without disability were around 2.7 times as likely to assess their health as 'very good or excellent' in 2017–18 as adults with disability (65% compared with 24%). This is especially the case for adults with

severe or profound disability (13%), where adults without disability were 5 times as likely to assess their health as 'very good or excellent', and adults with other forms of disability (27%) were twice as likely (ABS 2019c) (Figure 1).

Among adults with disability, those aged 65 and over were almost as likely as those aged 18−64 to rate their health as 'very good or excellent' in 2017–18 (24% compared with 25%). Among adults with severe or profound disability, those aged 65 and over were less likely than those aged 18−64 to rate their health as 'very good or excellent' in 2017–18 (10% compared with 16%) (ABS 2019c) (Figure 1).

The National Disability Insurance Agency (NDIA) collects information from participants in the NDIS. At 30 June 2019, 68% of participants aged 15–24, and 46% of participants aged 25 and over, rated their health as 'good', 'very good' or 'excellent' (NDIA 2019a).

Mental health

Mental health conditions can be both a cause and an effect of disability, and often involve activity limitations and participation restrictions beyond the 'core' areas of communication, mobility and self-care—for example, in personal relationships.
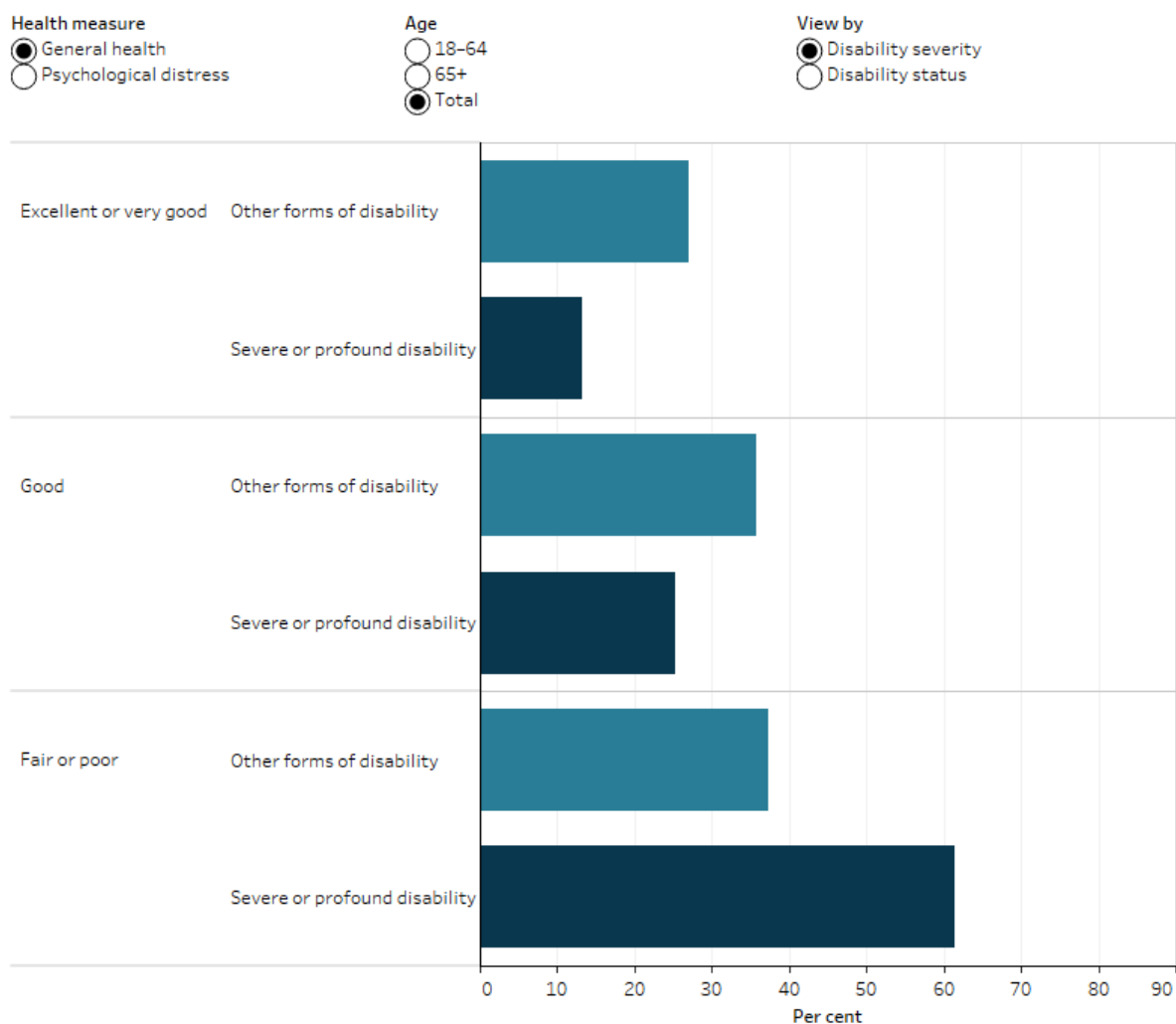
Four in 10 (42%) people with severe or profound core activity limitation, and 33% of people with other forms of disability, self-reported anxiety-related problems in the 2017–18 NHS. This compares with 12% of people without disability (ABS 2019d).

An estimated 36% of people with severe or profound disability self-reported that they had mood (affective) disorders such as depression, compared with 32% of people with other forms of disability, and 8.7% of people without disability (ABS 2019d).

Self-reported psychological distress is an important indication of the overall mental health of a population. Higher levels of psychological distress indicate that a person may have, or is at risk of developing, mental health issues. Adults with disability are more likely (32%) to experience high or very high levels of psychological distress than adults without disability (8.0%). This is particularly true for adults with severe or profound disability (40%) (ABS 2019c) (Figure 1).

Among adults with disability, those aged 65 and over were less likely than those aged 18–64 to experience very high levels of psychological distress in 2017–18 (5.4% compared with 17%). This is also true among adults with severe or profound disability, with those aged 65 and over less likely than those aged 18–64 to experience very high levels of psychological distress in 2017–18 (11% compared with 25%) (ABS 2019c) (Figure 1). See Mental health for more information.

Figure 1: Self-assessment of health status, by health measure, age, and disability severity, 2017–18

Health measure
◉ General health
○ Psychological distress

Age
○ 18–64
○ 65+
◉ Total

View by
◉ Disability severity
○ Disability status

* Estimate has a relative standard error of 25–50% and should be used with caution.
Source: ABS 2019c.
http://www.aihw.gov.au

Main conditions of people with disability

Australians with disability most commonly report a physical disorder (77%) as their main condition. Musculoskeletal disorders were the most commonly reported (30%) physical disorders, and include conditions such as arthritis and related disorders (13%), and back problems (13%) (ABS 2019a).

Mental or behavioural disorders, while less common, were reported by almost one-quarter (23%) of people with disability as their main condition. The most common mental or behavioural disorders were psychoses and mood disorders (7.5%), and intellectual and development disorders (6.5%) (ABS 2019a).

Health risk factors

People with disability generally have higher rates of some modifiable health risk factors and behaviours than people without disability. But there can be particular challenges for people with disability in modifying some risk factors, for example, where extra assistance is needed to achieve a physically active lifestyle, or where medication increases appetite or affects drinking behaviours.

In 2017–18, compared with people without disability, people with disability were:

- more likely to report an insufficient level of physical activity in the last week (72% with disability compared with 52% without disability, for people aged 15 and over)
- more likely to report that they smoked daily (18% compared with 12%, for people aged 15 and over)
- more likely to be overweight or obese (72% compared with 55%, for people aged 2 and over)
- more likely to report eating insufficient serves of fruit and vegetables per day (47% compared with 41%, for people aged 2 and over)
- less likely to report risky alcohol consumption in the last week (14% compared with 16%, for people aged 15 and over) (Figure 2).

People aged 65 and over with disability were less likely than younger people with disability to report they smoked daily (8.2% compared with 25% for those aged 18–64) but more likely to be overweight or obese (79% compared with 73% for those aged 18–64) (ABS 2019c).

In June 2018, 17% of NDIS participants aged 25−64 were current smokers (NDIA 2019b).

Figure 2: Health risk factors, by age, and disability status, 2017–18

Health risk factor
Physical activity

Age
◯ Under 65
◯ 65 and over
● Total

View by
◯ Disability severity
● Disability status

Insufficient physical activity in last week — All with disability
Insufficient physical activity in last week — All without disability
Sufficient physical activity in last week — All with disability
Sufficient physical activity in last week — All without disability

Per cent

*Under 65 for physical activity, smoking and alcohol consumption = ages 15–64. Under 65 for weight and diet = ages 2–64.
Source: ABS 2019c.
http://www.aihw.gov.au

Health care

People with disability generally use health services—such as general practitioners (GPs), medical specialists and hospital emergency departments—more than people without disability. At June 2018, 29% of NDIS participants aged 15−24 had been to hospital in the last 12 months (NDIA 2019b), compared with 7.9% of all Australians in this age group (ABS 2019e). Of those NDIS participants aged 15−24 who went to hospital, 52% had multiple visits (NDIA 2019b), compared with 22% of all Australians aged 15−24 (ABS 2019e).

In 2018, 60% of Australians with disability needed assistance with at least 1 activity of daily life. Of these, the most common form of assistance needed was with health care (30%). Among people with a profound limitation (around 610,000 people), 73% most needed assistance with health care. Of the people with disability needing assistance with

health care, 55% received formal assistance and 49% received informal assistance (ABS 2019a).

Some people with disability experience difficulties in accessing health services, such as unacceptable or lengthy waiting times, cost, inaccessibility of buildings, and discrimination by health professionals. They may also experience issues caused by lack of communication between different health professionals who treat them.

Of people with disability in 2018, 12% avoided medical facilities because of their disability in the last 12 months (ABS 2019a). Difficulty accessing health care can vary with the extent or severity of disability (Table 1).

Table 1: Difficulties in accessing health services in last 12 months, by disability severity, 2018

	With severe or profound disability (%)	With other forms of disability (%)
Had difficulty accessing medical facilities[a, b]	12.8	9.2
Experienced unfair treatment or discrimination from health staff [c]	8.9	2.0
Delayed or did not see a GP when needed, because of the cost[d]	6.0	8.4
Saw a GP but waited longer than they felt was acceptable to get an appointment[c]	26.8	23.5
Did not see a medical specialist when needed, because of the cost[d]	5.0	4.3
Saw a medical specialist but waited longer than they felt was acceptable to get an appointment[c]	38.3	29.2
Delayed or did not see a dental professional when needed, because of the cost[d]	21.5	29.8
On a public dental waiting list and still waiting to receive public dental care[d]	28.4	32.5

	With severe or profound disability (%)	With other forms of disability (%)
Delayed or did not go to hospital when needed, because of the cost[d]	5.1	2.4[*]
Experienced issues caused by lack of communication among different health professionals when seeing 3 or more for the same condition[d]	24.3	18.8

(a) People who need assistance or have difficulty with communication or mobility because of disability

(b) People aged 5–64

(c) People aged 15–64 who had a personal interview

(d) People aged under 65

[*] Estimate has a relative standard error of 25–50% and should be used with caution.

Source: ABS 2019f.

As the patient experience information in the SDAC is collected only from people with disability and their carers, it is not possible to make direct comparisons with people without disability. Information from the ABS Patient Experience Survey 2018–19 (ABS 2019e) provides a general population comparison. It suggests that people with disability are more likely to face barriers such as cost when accessing some types of health services. For example, 21% of people with disability aged 15–64, who delayed seeing or did not see a GP when needed in the last 12 months, did so because of cost (ABS 2019f), compared with 16% of all Australians aged 15–64 (ABS 2019e).

Of the participants in the NDIS, at 30 June 2019, 69% of those aged 15–24 and 66% of those aged 25 and over did not report any difficulties accessing health services (NDIA 2019a). For participants aged 25 and over who had experienced some difficulty, the most common reason for those was access issues (10%), followed by attitudes and/or expertise of health professionals (6%). Participants aged 15–24 from regional and remote locations were less likely than those in major cities to have a regular doctor and more likely to have difficulty accessing health services (NDIA 2019b).

The establishment of a National Disability Data Asset, announced on 6 September 2019 by the Australian Data and Digital Council, will provide further insights into the experiences of people with disability when accessing health services. The asset, being piloted in 2020, will link data from multiple service sectors including health, such as visits to hospitals, GPs and specialists.

Where do I go for more information?

For more information on the health of people with disability, see:

- [People with disability in Australia](#)

- Australian Bureau of Statistics (ABS) [Disability, Ageing and Carers, Australia: summary of findings, 2018](#)

- ABS [National Health Survey: first results, 2017–18](#)

- [National Disability Insurance Scheme](#)

Visit [Disability](#) for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019a. [Disability, Ageing and Carers, Australia: summary of findings, 2018](#). ABS cat. no. 4430.0. Canberra: ABS.

ABS 2019f. Microdata: [Disability, Ageing and Carers, Australia, 2018](#). ABS cat. no. 4430.0.30.002. AIHW analysis of ABS TableBuilder. Canberra: ABS.

ABS 2019c. Microdata: [National Health Survey](#), 2017–18, main unit record file. ABS cat. no. 4324.0.55.001. Finding based on AIHW analysis of ABS microdata. Canberra: ABS.

ABS 2019d. Microdata: [National Health Survey](#), 2017–18. ABS cat. no. 4324.0.55.001. AIHW analysis of ABS TableBuilder. Canberra: ABS.

ABS 2019b. [National Health Survey: users' guide 2017–18.](#) ABS cat. no. 4363.0. Canberra: ABS.

ABS 2019e. [Patient Experiences in Australia: summary of findings, 2018−19](#). ABS cat. no. 4839.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2019. [People with disability in Australia](#). Cat. no. DIS 72. Canberra: AIHW.

DSS (Department of Social Services) 2015. [Social Security Guide](#). Canberra: DSS.

NDIA (National Disability Insurance Agency) 2019a. [COAG Disability Reform Council, quarterly report, 30 June 2019](#). Canberra: NDIA.

NDIA 2019b. [NDIS participant outcomes 30 June 2018](#). Canberra: NDIA.

WHO (World Health Organization) 2001. [International Classification of Functioning, Disability and Health](#). Geneva: WHO.

Health of prisoners

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People in prison are a particularly vulnerable population. They are generally more disadvantaged, with higher health care needs than the wider Australian population. Most people in prison are there for relatively short periods, which means that the health issues of people in prison become health issues for the whole community. These factors suggest that people in prison need a high level of health care and continued health care and support in the community following their release.

Data sources

Data for the National Prisoner Health Data Collection (NPHDC) is collected by the AIHW every 3 years and is the main source of national data about the health of people in prison in Australia. It presents information about the health experiences of people throughout the prison cycle—from entry, to time spent in prison, to discharge, and after release. It includes information on the operation of prison health clinics and the conditions they manage; the medications dispensed; self-reported information from people as they enter and exit the prison system—known as prison entrants and prison dischargees; and summary information, recorded by the prison clinics.

Like any survey, the NPHDC does have limitations. They include:

- the sample in the NPHDC does not represent the entire prison population. The NPHDC was designed as a census, capturing data on the population of interest at a point in time

- not all prisoners participated in the survey—this could be due to staffing constraints within a particular prison, uncertain release/transfer dates, limitations (physical or mental) of the potential participants, and prisoners not providing consent to participate

- the majority of the data collected for the NPHDC were self-reported.

Profile of people in prison

At June 30, 2019:

- There were about 43,000 prisoners in Australia

- Just over 9 in 10 (92%) prisoners were male

- More than 1 in 4 prisoners were Aboriginal and Torres Strait Islander (28%) (ABS 2019a)

The prison population differs from the general population in a number of ways. People in prison are mostly male, and Aboriginal and Torres Strait Islander people are vastly over-represented. People in prison experience higher rates of mental health conditions, chronic physical disease, communicable disease, tobacco smoking, high-risk alcohol consumption, illicit use of drugs, and injecting drug use than the general population (AIHW 2019a).

Prison stays are usually temporary. On 30 June 2019, one-third (33%, or 14,200) of the approximately 43,000 people in prison were on remand while awaiting trial or sentencing. For those who were sentenced, the median time they could expect to serve was 2 years (ABS 2019a). This means that the prison population is fluid, with people continually entering and being released from prison.

Figure 1: Australia's prison population, 2009 to 2019
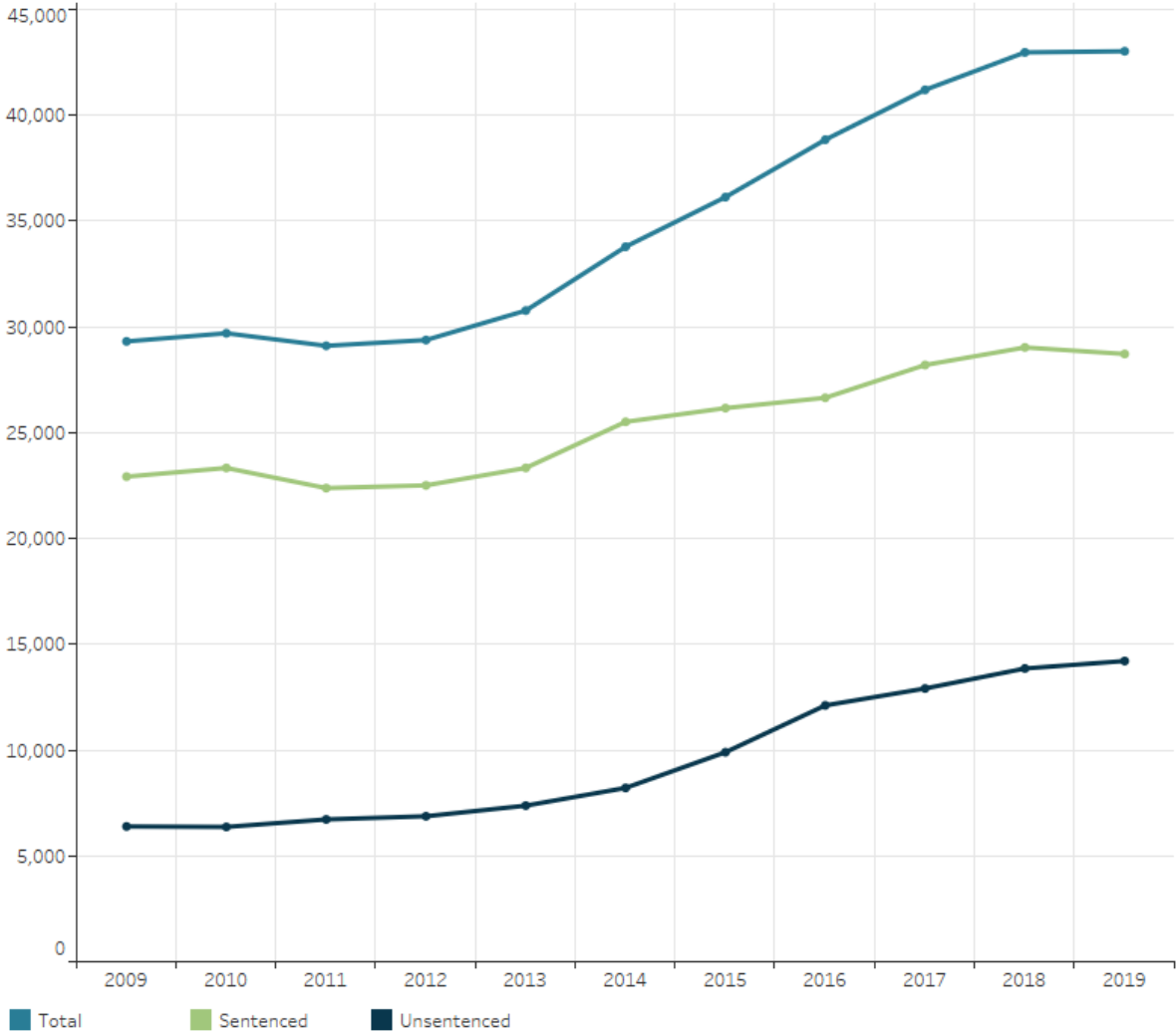
Mental health

Mental health is fundamental to social wellbeing, and affects individuals, families, and the wider community (ABS 2019b). Mental health conditions are chronic conditions such as depression, anxiety disorders, psychotic disorders, and alcohol and other drug use disorders. These conditions can influence thoughts, feelings, behaviour, stress levels, relationships, and decision making.

Of prison entrants surveyed in 2018:

- 2 in 5 (40%) reported having been told they had a mental health condition at some point during their lives

- Females were more likely than males to report a history of a mental health condition (65% compared with 35%)

- Almost 1 in 5 (18%) were referred to mental health services for observation and further assessment (AIHW 2019a)

In the NPHDC, prison entrants and dischargees were asked to rate their mental health as being excellent, very good, good, fair, poor or unknown. Of prisoners surveyed in 2018:

- almost 7 in 10 prison entrants (69%) and 8 in 10 prison dischargees (79%) reported their mental health to be good, very good or excellent.

- male prison entrants were more likely than female prison entrants to rate their mental health as good, very good or excellent (73% compared with 50%)

- Aboriginal and Torres Strait Islander prison entrants (75%) and dischargees (87%) were more likely than non- Aboriginal and Torres Strait Islander prison entrants (67%) and dischargees (77%) to rate their mental health as good, very good or excellent

- fewer than 1 in 10 prison entrants and 1 in 20 dischargees rated their mental health as poor (8% and 4% respectively).

Physical health

Chronic diseases are long-lasting conditions with persistent effects. Their social and economic consequences can affect people's quality of life (AIHW 2016a). Some risk factors associated with chronic conditions are considered preventable, including poor diet, physical inactivity, obesity, tobacco smoking, risky alcohol consumption, illicit use of drugs, and unsafe sexual practices (AIHW 2016a).

In the NPHDC, prison entrants were asked whether they had ever been told by a medical professional that they had any of the following chronic physical health conditions:

arthritis, asthma, cancer, cardiovascular disease, diabetes. Self-reported data rely on the respondents' accurate recall and may not represent the true prevalence. Further, some prison entrants might have existing health conditions that have yet to be diagnosed.

Table 1: Prison entrants' health status, 2018

	Prison entrants ever diagnosed with a condition	**Prison entrants with a current condition**
Asthma	22%	15%
Arthritis	7%	7%
Cardiovascular diseases	7%	4%
Diabetes	6%	6%
Cancer	2%	1%
Any condition	*30%*	*26%*

Notes

1. Includes unknowns

2. Proportions are proportions of prison entrants in this data collection only, and not the entire prison population.

3. Excludes New South Wales, which did not provide data for the 2018 NPHDC.

Source: AIHW 2019a.

Health risk factors and behaviours

Of prison entrants surveyed in 2018:

- Three-quarters (75%) were current tobacco smokers

- Almost two-thirds (65%) had illicitly used drugs in the previous year, with methamphetamine being the most commonly used illicit drug (used by 43% of entrants)

- About 1 in 3 (34%) were at high risk of alcohol-related harm during the previous 12 months (AIHW 2019a)

Tobacco smoking is one of the largest single preventable causes of death and disease in Australia. It is a major risk factor for many chronic conditions including coronary heart

disease, stroke, diabetes, chronic obstructive pulmonary diseases, multiple types of cancers, and asthma (AIHW 2016b).

Prison entrants were asked whether they had ever smoked tobacco and whether they currently smoked.

Of prisoners surveyed upon entry:

- 3 in 4 (75%) reported that they were current smokers

- 85% reported smoking at some stage in their lives

- females were more likely than males to be current smokers (86% compared with 74%)

- 4 in 5 (80%) Aboriginal and Torres Strait Islander peoples were current smokers compared with almost 3 in 4 (73%) non-Indigenous prison entrants.

Illicit use of drugs can cause death and disability, and is a risk factor for many diseases. It is also associated with risks to users' family and friends, and to the community. Illicit use of drugs includes use of illegal drugs, misuse or non-medical use of pharmaceutical drugs, and inappropriate use of other substances (AIHW 2019b). Illicit use of drugs is a primary motivating factor in many crimes—including non-violent property offences such as burglary and theft—particularly for those who have drug dependence (Kopak & Hoffmann 2014).

Prison entrants were asked about their drug use in the previous 12 months, also referred to as 'recent' drug use. Of those prison entrants surveyed:

- around 2 in 3 (65%) reported illicit use of drugs in the previous 12 months

- over 2 in 5 had used amphetamines in the previous 12 months (43%)

- females were more likely than males to have reported illicit use of drugs in the previous 12 months (74% compared with 64%)

- self-reported recent illicit use of drugs was highest among those aged 18–24 (74%) and lowest among those aged 45 and over (42%).

The consumption of alcohol is widespread in Australia and entwined with many social and cultural activities. However, harmful levels of alcohol consumption are a major health issue associated with increased risk of chronic disease, injury and premature death (AIHW 2019b).

In the 2018 NPHDC, prison entrants were asked questions about their alcohol consumption in the previous 12 months. These were:

- How often did you have a drink containing alcohol?

- How many standard drinks would you have on a typical day when you were drinking?

- How often did you have six or more standard drinks on one occasion?

Of entrants surveyed in 2018, in the previous 12 months:

- male prison entrants were slightly more likely to drink than female entrants (64% compared with 59%)

- Aboriginal and Torres Strait Islander entrants were more likely to drink 4 or more times per week than non-Indigenous entrants (18% compared with 14%)

- just over 1 in 9 prison entrants (12%) were drinking 6 or more standard drinks on a single occasion daily or almost daily (AIHW 2019a).

Where do I go for more information?

For more information on the health of people in prison, see:

- The health of Australia's prisoners 2018

- Australian Bureau of Statistics (ABS) Prisoners in Australia, 2019

- ABS Corrective services, Australia

Visit Prisoners for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019a. Prisoners in Australia, 2019. ABS cat. no. 4517.0. Canberra: ABS.

ABS 2019b. National Health Survey: first results, 2017–18. ABS cat. no. 4364.0.55.001. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2016a. Evidence for chronic disease risk factors. Cat. no. WEB 166. Canberra: AIHW.

AIHW 2016b. Healthy communities: tobacco smoking rates across Australia, 2014–15 (in focus). Cat. no. HPF 1. Canberra: AIHW.

AIHW 2019b. Alcohol, tobacco & other drugs in Australia. Cat. no. PHE 221. Canberra: AIHW.

AIHW 2019a. The health of Australia's prisoners 2018. Cat. no. PHE 246. Canberra: AIHW.

Kopak AM & Hoffmann NG 2014. Pathways between substance use, dependence, offense type, and offense severity. Criminal Justice Policy Review 25:743–60.

Health of veterans

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The unique nature of Australian Defence Force (ADF) service can enhance a person's health and wellbeing. Military personnel are generally physically and mentally fit, receive regular medical assessments, and have access to comprehensive medical and dental treatment as a condition of service. However, ADF service increases the likelihood of exposure to trauma (either directly or indirectly) and affects support networks, for example, separation from family during deployment (Daraganova et al. 2018; Lawrence-Wood et al. 2019). Veterans can therefore experience health needs, outcomes and challenges that are different from the rest of the Australian population.

Who are veterans?

The term 'veteran' traditionally described former ADF personnel who were deployed to serve in war or war-like environments. Veterans are now considered people who have any experience in the ADF including current, reserve and former (ex-serving) personnel (Tehan 2017).

Different sections of this page use different definitions of veterans depending on the available data. The following describes the possible options:

- Clients of the Department of Veterans' Affairs (DVA)—eligible veterans and their families who are supported by DVA. DVA clients may receive a range of entitlements depending on personal circumstances, such as compensation payments, means-tested pensions and subsidised health treatment.

- ADF members—people who are currently serving or have previously served at least 1 day in a regular capacity or as a member of the active or inactive reserves (also referred to as people who 'have ever served in the ADF').

- Contemporary ex-serving ADF members—ex-serving members who have had at least 1 day of full-time or reserve service on or after 1 January 2001, and have since been discharged from the ADF ('current serving' and 'current reserve' members mentioned on this page are also restricted to having service from 1 January 2001 onwards).

Data on veterans' health and the use of health services by the entire veteran population are limited. Further, identifying veterans in health research is restricted by the available data.

Women currently make up 19% of the ADF workforce (Department of Defence 2019a). Participation has been increasing (Department of Defence 2019b), but the relatively low

numbers constrain reporting on the health of women who have served. Consequently, most sections of this page present data for men only.

The AIHW is increasing the range of data available about veterans through data linkage initiatives. For example, information on medications dispensed to contemporary ex-serving ADF personnel under the Pharmaceutical Benefits Scheme (PBS) and the Repatriation Pharmaceutical Benefits Scheme (RPBS) was first published in 2019, while information on services used by contemporary ex-serving ADF personnel under the Medicare Benefits Schedule is forthcoming.

Profile of veterans

The exact number of Australian veterans is unknown.

- At 30 June 2019, the ADF comprised about 58,000 permanent (47,000 men and 11,000 women) and 27,500 active reserve personnel across the Royal Australian Navy, the Australian Army and the Royal Australian Air Force. In 2018–19, more than 7,000 people enlisted to permanent or reserve roles, and more than 5,600 left the ADF (Department of Defence 2019a).

- At June 2019, there were more than 290,000 DVA beneficiaries in receipt of pensions, allowances, and treatment or pharmaceuticals. This included approximately 184,000 veterans and 110,000 dependants (DVA 2019).

- Many veterans in Australia are not in contact with DVA. In 2017, DVA estimated contact with 1 in 3 veterans who had served since Vietnam, and 1 in 5 veterans who had served since 1999 (DVA 2017).

- DVA (2019) estimated there were about 631,800 living Australian veterans who have ever served in the ADF, either full-time or in the reserves, at 30 June 2019 (DVA 2019).

Health status

The Australian Bureau of Statistics' (ABS) 2017–18 National Health Survey (NHS) estimated almost half (49%) of people who had ever served in the ADF considered themselves to be in excellent or very good health, while 21% considered their health to be fair or poor.

However, based on age-standardised findings, more than half (57%) of people who had ever served in the ADF were estimated to consider themselves to be in excellent or very good health, while 17% considered their health to be fair or poor. This perception was very similar to people who had never served: an estimated 56% reported excellent or very good health and 15% reported fair or poor health (ABS 2019a).

Health conditions

A range of conditions can affect an individual's health. Common conditions experienced among the Australian population include cancer, cardiovascular disease, mental

disorders and musculoskeletal conditions; those who have served in the ADF also experience these and other conditions to varying degrees.

Addressing the development and management of mental disorders such as depression, post-traumatic stress disorder, other anxiety disorders and alcohol dependence for the veteran community has been identified as a priority for the Australian Government (DVA 2015). There are limited data available about the current prevalence of mental disorders among the Australian population, but further information will be available from the Intergenerational Health and Mental Health Study 2020–21 (ABS 2019b).

Based on overall estimates from the 2017–18 NHS, more than 1 in 5 (22%) men who had ever served in the ADF reported a mental or behavioural condition (for example, anxiety and mood disorders, or problems with alcohol). After accounting for differences in age structures, 21% of men who had ever served in the ADF reported a mental or behavioural condition in the previous year. This proportion was similar for men who had not served (18%). Rates of self-reported high or very high psychological distress were also similar across these 2 groups (about 12%) (ABS 2019a).

See [Mental health](#) for more information.

Men who had served in the ADF reported a similar prevalence of chronic conditions (such as arthritis, back pain and diabetes), to men who had not served. This was also seen once differences in age structures of the 2 groups were taken into account. The exception was cardiovascular disease which, after accounting for differences in age structures, was reported by a greater proportion of men who had served in the ADF (24%), than men who had not served (18%) (ABS 2019a).

Deaths

Current serving, reserve and contemporary ex-serving ADF men and women have lower all-cause mortality rates than the Australian population (AIHW 2018).

Table 1 shows all-cause mortality rates of men who served in the ADF since 2001 for the period 2002–2015. Age-specific all-cause mortality rates for current serving, reserve or contemporary ex-serving ADF men were lower than rates for Australian men (with the exception of contemporary ex-serving ADF men aged 16–29, which was similar to Australian men).

Table 1: Age-specific rates of all-cause mortality (per 100,000 population), men [(a)] in ADF service status groups and Australian men, 2002–2015

				Population
Age group (years)	Current serving	Reserve	Contemporary Ex-serving	Australia
16–29	49.2	39.9	81.6[(b)]	69.0

30–49	58.1	64.5	106.1	152.6
50–70	155.7	229.5	385.1	741.1

(a)   Due to small sample sizes, mortality rates for women are not available by age group.

(b)   All differences in age-specific rates between ADF service groups and the Australian population were statistically significant. The exception was the contemporary ex-serving 16–29 year age group; the difference with the Australian population was not statistically significant.

Sources: AIHW analysis of linked PMKeyS-NDI data 2002–2015; AIHW NMD 2002–2015.

When comparing the causes of death for current serving, reserve or contemporary ex-serving ADF men with Australian men of the same age:

- death rates due to chronic disease were lower for current serving, reserve and contemporary ex-serving ADF men with the exception of melanoma, which was similar

- death rates due to injury were lower, or similar, for current serving, reserve and contemporary ex-serving ADF men (AIHW 2018).

Generally, the leading cause of death for each age group was similar for current serving, reserve and contemporary ex-serving ADF men, and men in the Australian population (with the exception of current serving men aged 16–29; Figure 1). Figure 1 provides the top 5 leading causes of death in current serving, reserve and contemporary ex-serving ADF men for 2002–2015 for age groups, with the Australian comparison.

See Causes of death.

Figure 1: Leading cause of death among men, by age, 2002 to 2015

Age
16–29

Rank	Serving	Reserve	Ex-serving	Australia
1	Land transport accidents	Suicide	Suicide	Suicide
2	Suicide	Land transport accidents	Land transport accidents	Land transport accidents
3	Accidental poisoning		Accidental poisoning	Accidental poisoning
4	Exposure to unspecified factors		Event of undetermined intent	Assault
5	Other ill-defined causes			Accidental drowning and submersion

[Notes]
Sources: AIHW analysis of linked PMKeyS-NDI data 2002–2015; AIHW NMD 2002–2015.

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There is continuing concern within the ADF and the wider Australian community about suicide in current serving and contemporary ex-serving ADF personnel. In particular, contemporary ex-serving ADF personnel may face increased risk of suicide.

Between 2001 and 2017, there were 419 suicides among current serving, reserve and contemporary ex-serving ADF personnel (AIHW 2019a).

After adjusting for age, the rate of suicide compared with Australian men for 2002–2017 was:

- 48% lower for current serving men
- 48% lower for men in the reserves
- 18% higher for contemporary ex-serving men (AIHW 2019a).

The number of women in the ADF is increasing, but historically, numbers have been relatively low (Department of Defence 2019b). Suicide information for contemporary ex-

serving women was reported for the first time in 2019, as the number of contemporary ex-serving women was sufficient to have confidence in the results (see AIHW 2019a).

Between 2001 and 2017, there were 21 suicides among contemporary ex-serving women: a rate of 15 per 100,000. This was lower than the rate for contemporary ex-serving men (27 per 100,000), but higher than for Australian women (see AIHW 2019a).

On 5 February, the Federal Government announced the appointment of a National Commissioner for Defence and Veteran Suicide Prevention. The AIHW will be playing a new role in some of the interim work preparing for the new commissioner. This work will align with existing work and will include further analysis of suicides among current, reserve and contemporary ex-serving personnel who have served since 2001.

Open Arms—Veterans and Families Counselling provides support and counselling to current ADF members, veterans and their families and can be contacted 24 hours a day on 1800 011 046.

See Suicide and intentional self-harm.

Disability

A disability or restrictive long-term health condition exists if a limitation, restriction, impairment, disease or disorder has lasted, or is expected to last, for 6 months or more, and restricts everyday activities (ABS 2019a).

According to the 2017–18 NHS, a disability or restrictive long-term condition is classified by whether or not a person has a specific limitation or restriction. The specific limitation or restriction is further classified by whether the limitation or restriction is a limitation in core activities, or a schooling/employment restriction only. There are 5 levels of activity limitation in the 2017–18 NHS:

- profound
- severe
- moderate
- mild
- school/employment restriction only.

These are based on whether a person needs help, has difficulty, or uses aids or equipment with any core activities (mobility, self-care and communication). A person's overall level of core activity limitation is determined by their highest level of limitation in any of these activities.

According to estimates from the 2017–18 NHS, almost 2 in 5 (37%) men who had served in the ADF reported a disability. Age-standardised data found that men who had served

in the ADF were more likely to report a disability (28%) than men who had not served (20%) (ABS 2019a).

Health risk factors

Veterans' health is influenced by health behaviours that may relate to ADF service or individual lifestyle. Screening at recruitment and aspects of serving in the ADF—such as the requirement to maintain a high level of physical fitness and regular health assessments—may act as a protective factor for veterans' health.

Based on estimates from the 2017–18 NHS, men who had ever served in the ADF had similar exposure to health risk factors to men who had not served (after accounting for differences in age structure between the 2 groups). This included smoking, alcohol consumption, overweight and obesity, fruit and vegetable consumption, sweetened drink consumption and physical activity.

Health care

The departments of Defence and Veterans' Affairs provide services to support serving and contemporary ex-serving ADF members during and after ADF service. Veterans may use these services, or those available to all Australians through mainstream providers. DVA funds health-related services and programs where clinically required for eligible veterans and their families (those with a DVA-issued health card). DVA funding of health care for entitled veterans is 'demand driven and uncapped'—this means that the Australian Government increases health care funding if needed (DVA 2018). In 2017–18, DVA spent $3.0 billion on health-related services (excluding aged care-related services): the majority was for treatment in hospitals (private and public $1.4 billion), and primary care ($1.4 billion) (AIHW 2019b).

The 2014–15 NHS, estimated that 90% of people who had served in the ADF consulted a general practitioner (GP) in the 12 months preceding the survey; the highest rate of GP visits was among those aged 75 and over (95%) (ABS 2017). Rates were similar between men of the same age who had or had not served except those aged 35–44, where 89% of men who had served consulted a GP in the 12 months preceding the survey compared with 74% of men who had not served (ABS 2017).

Medicines

The Australian Government subsidises many medications. All Australian residents who hold a current Medicare card can access medications listed under the PBS, subject to patient entitlement status. The RPBS funded by DVA subsidises medications listed under the PBS and additional medications and items for eligible veterans, war widows/widowers, and their dependents.

See [Medicines in the health system](#) for more information.

In 2017–18, more than 1 million medications were dispensed under the PBS/RPBS to around 70,000 contemporary ex-serving ADF personnel with service from 1 January 2001, an average of 16 dispensed per person (AIHW 2019c).

After accounting for age and sex differences, similar proportions of the contemporary ex-serving and Australian populations were dispensed medications in 2017–18 (72% and 71%, respectively) (AIHW 2019c). Among contemporary ex-serving personnel:

- 37% were dispensed at least 1 nervous system medication (including antidepressants and anxiolytics)—compared with 31% for all Australians
- 22% were dispensed a cardiovascular system medication (for example for hypertension or high cholesterol)—compared with 24% for all Australians.

Policies regarding mental health treatment for contemporary ex-serving personnel have undergone change in recent years to facilitate early access to mental health treatment. The full effect of these changes may not be reflected for the contemporary ex-serving personnel captured in this data. Due to these policies, contemporary ex-serving ADF members have different pricing structures for, and access to, medications from the Australian population. These factors may influence the levels of dispensing between contemporary ex-serving members and the Australian population.

Overall, 17% of the contemporary ex-serving ADF population were dispensed at least 1 antidepressant in 2017–18 (AIHW 2019c). Figure 2 shows that after accounting for differences in the age and sex structures of the populations, 20% of all contemporary ex-serving ADF members received at least 1 dispensing for antidepressants, compared with 15% in the Australian population. On average, contemporary ex-serving ADF members who received at least 1 dispensing for antidepressants, received 9 dispensings per person, similar to the Australian population. Antidepressants are most commonly prescribed for mood and anxiety disorders but are also prescribed for other medical conditions, for example, chronic pain and sleep disorders.

Figure 2: Top 5 medication classes most frequently dispensed to contemporary ex-serving ADF members in 2017-18 at third ATC level, age and sex standardised
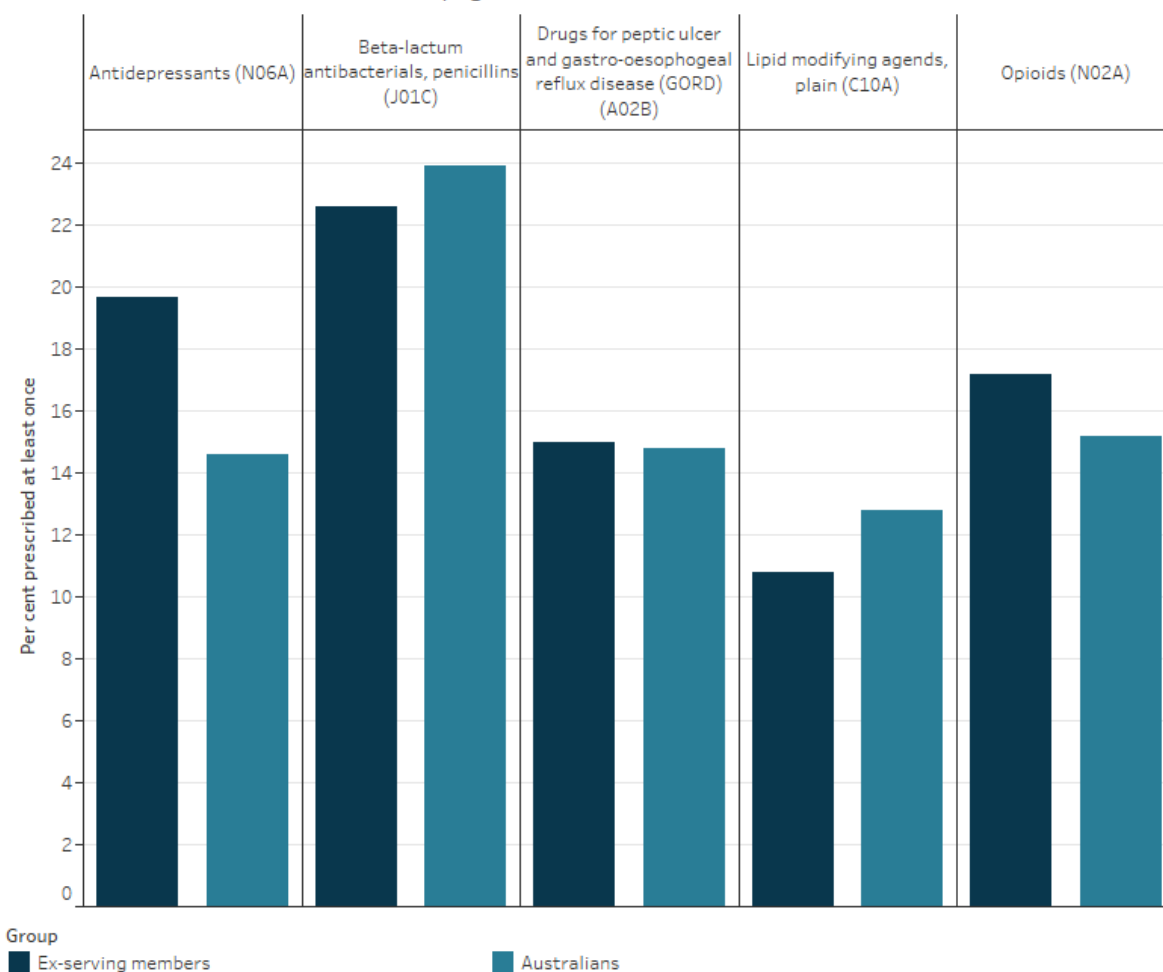
[Notes]
Sources: AIHW analysis of linked PMKeyS—PBS/RPBS data 2017–18.

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Hospitalisations

The Department of Defence funds all hospital care for current serving ADF members while DVA funds hospital care for eligible veterans and eligible dependents.

Data are available for public and private hospitalisations. In 2017–18, data from the National Hospital Morbidity Database show more than 235,000 hospitalisations were funded by DVA and 9,900 hospitalisations were funded by Defence. DVA and Defence hospitalisations occurred more commonly in private hospitals: 70% of DVA-funded hospitalisations and 84% of Defence-funded hospitalisations were in private hospitals. For all other Australian hospitalisations, 40% were in private hospitals.

DVA provides Non-Liability Health Care, which allows for easier access to treatment for certain health conditions, such as mental health, which is not available to the general

population. As a result, veterans receiving DVA funding may be higher consumers of Non-Liability Health Care-specific health care services.

See Hospital care.

Where do I go for more information?

For more information on the health of veterans, see:

- A profile of Australia's veterans 2018
- National suicide monitoring of serving and ex-serving Australian Defence Force personnel: 2019 update
- Medications dispensed to contemporary ex-serving Australian Defence Force members, 2017–18
- Department of Veterans' Affairs Environmental scan of mental health reform in Australia 2019

Visit Veterans for more on this topic.

What support is available?

Open Arms—Veterans & Families Counselling

Provides 24-hour free counselling and support to you and your family.

ADF Mental Health All-hours Support Line

A confidential 24-hour telephone service for ADF members and their families.

Lifeline Australia

Provides free support services if you are in crisis and need to talk to someone.

1800RESPECT

Provides 24-hour counselling services to help you cope with sexual assault or violence.

Ex-service organisations

Connect with an ex-service organisation in your local area. These organisations may be able to provide you with support and resources.

References

ABS (Australian Bureau of Statistics) 2017. Microdata: National Health Survey 2014–15. ABS cat. no. 4324.0.55.001. Canberra: ABS.

ABS 2019b. Forward work program, 2019–20. ABS cat. no. 1006.0. Canberra: ABS.

ABS 2019a. Microdata: National Health Survey, 2017–18, TableBuilder. Findings based on AIHW analysis of ABS TableBuilder data.

AIHW (Australian Institute of Health and Welfare) 2018. Causes of death among serving and ex-serving personnel: 2002−2015. Cat. no. PHE 228. Canberra: AIHW.

AIHW 2019b. Health expenditure Australia 2017–18. Health and welfare expenditure series no. 65. Cat. no. HWE 77. Canberra: AIHW.

AIHW 2019c. Medications dispensed to contemporary ex-serving Australian Defence Force members, 2017–18. Cat. no PHE 264. Canberra: AIHW.

AIHW 2019a. National suicide monitoring of serving and ex-serving ADF personnel: 2019 update. Cat. No. PHE 222. Canberra: AIHW.

Daragnova G, Smart D & Romaniuk H 2018. Transition and Wellbeing Research Programme Family Wellbeing Study. Part 1 Families of current and ex-serving ADF members: health and wellbeing Part 1 Canberra: Department of Defence and Department of Veterans' Affairs.

Department of Defence 2019a. Annual reports 2018–19. Canberra: Department of Defence.

Department of Defence 2019b. Women in the ADF report 2016−17. Canberra: Department of Defence.

DVA (Department of Veterans' Affairs) 2015. Social Heath Strategy 2015-2023 for the Veteran and Ex-Service Community. Canberra: DVA.

DVA 2017. Myth busters: who are Australia's veterans? Vetaffairs Spring 2017. Vol. 33. No. 3. Canberra: DVA.

DVA 2018. No cap on funds for medical treatment. Vetaffairs Winter 2018. Vol 34. No. 2. Canberra: DVA.

DVA 2019. Department of Veterans' Affairs annual report 2018–19. Canberra: DVA.

Lawrence-Wood E, McFarlane A, Lawrence A, Sadler N, Hodson S, Benassi H et al. 2019. Impact of combat report. Canberra: Department of Defence; DVA.

Tehan, the Hon. D, MP 2017. Joint communique—Veterans' ministers' meeting. Media release by Minister for Veterans' Affairs. 8 November. Canberra.

Health of young people

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/health-of-young-people

Youth is a key transition period in a person's life. When young people are in good health they are more likely to achieve better educational outcomes, make a successful transition into full-time work, develop healthy adult lifestyles, and experience fewer challenges forming families and parenting (AIHW 2011). A recent survey of youth found that physical and mental health was highly valued by young people, with a majority regarding it as 'extremely' or 'very' important (Carlisle et al. 2018).

Profile of young people

Who are Australia's young people?

For this snapshot, young people are defined as those aged 12–24. This is consistent with the age breakdowns for the National Youth Information Framework (NYIF) and complements the Children's Headline Indicators. This age range also includes 3 main stages of adolescence: early, middle and late.

However, definitions of young people will vary between data sources according to different frameworks, policies and legislation. Often, data are available only for those aged 15 and over. In these instances, data for those aged 15–24 will be reported instead. For information about children aged 0–12, see Health of children.

At 30 June 2019, an estimated 3.3 million young people aged 15–24 lived in Australia. Just over half of these people were male (51%, or 1.7 million) and 49% (1.6 million) were female. Together, young people aged 15–24 made up 13% of the total population (ABS 2019a).
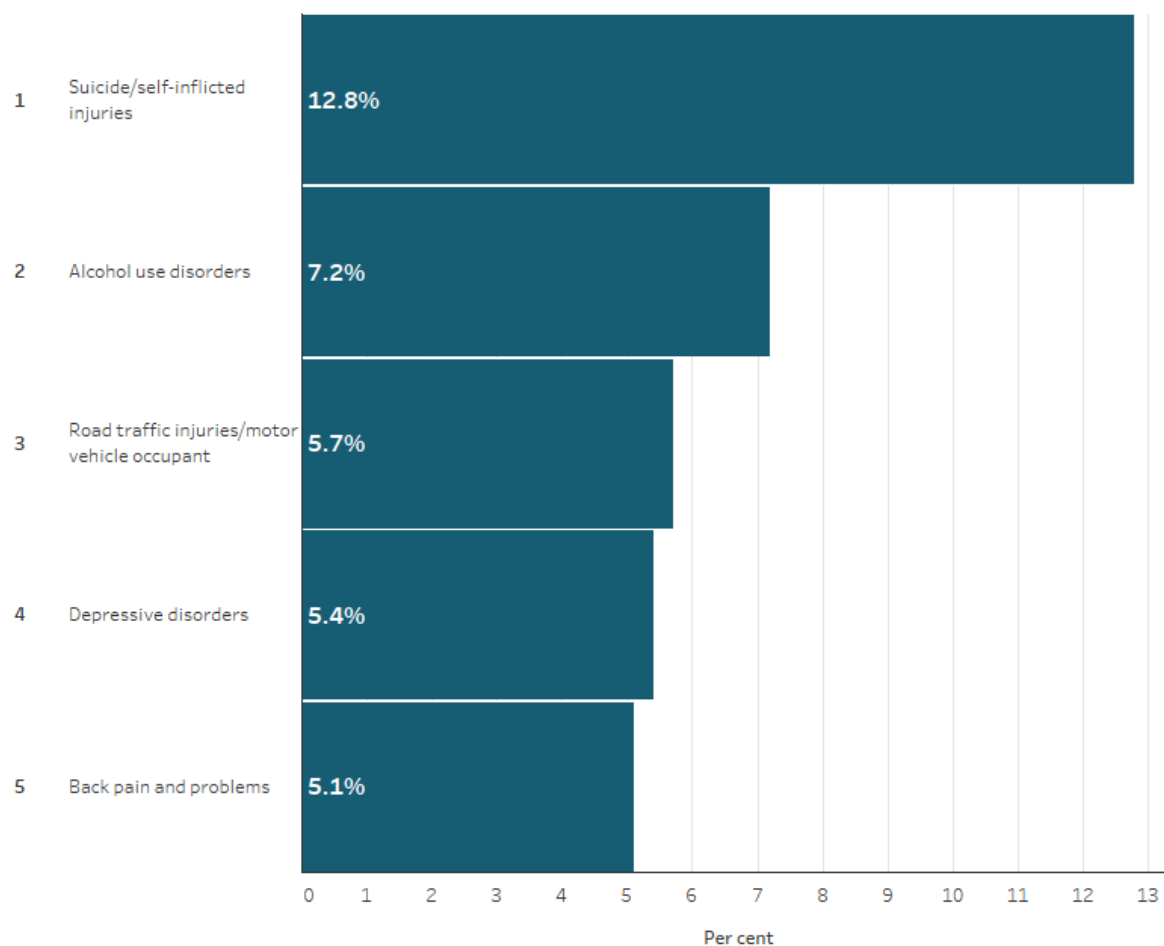
Health status

Burden of disease

The burden of disease is the quantified impact of a disease or injury on a population, which captures health loss, or years of healthy life lost through premature death or living with ill-health (see Burden of disease). For young people aged 15–24, the leading causes of total burden varied between males and females. Suicide and self-inflicted injuries were the leading cause of total burden among males, and anxiety disorders were the leading cause among females (Figure 1) (AIHW 2019a).

Figure 1: Leading causes of total burden among young people aged 15–24, by sex, 2015

Sex
Males

1	Suicide/self-inflicted injuries	12.8%
2	Alcohol use disorders	7.2%
3	Road traffic injuries/motor vehicle occupant	5.7%
4	Depressive disorders	5.4%
5	Back pain and problems	5.1%

Per cent

Source: AIHW 2019a.
http://www.aihw.gov.au/

Mental health

Based on The Australian Child and Adolescent Survey of Mental Health and Wellbeing (also known as the Young Minds Matter survey) undertaken in 2013–14, around 14% of children aged 12–17 met the clinical criteria for 1 or more mental disorders in the previous 12 months (Lawrence et al. 2015). Anxiety disorders (7.0%) were the most common (Table 1). Young males were more likely than young females to have Attention Deficit Hyperactivity Disorder (ADHD) or conduct disorder, while young females were more likely than young males to have anxiety or a major depressive disorder.

See Mental health.

Table 1: Prevalence of mental disorders among young people aged 12–17, by sex, 2013–14

Disorder	Males (%)	Females (%)	Persons (%)
Anxiety disorders	6.3	7.7	7.0
Attention Deficit Hyperactivity Disorder (ADHD)	9.8	2.7	6.3
Major depressive disorder	4.3	5.8	5.0
Conduct disorder	2.6	1.6	2.1
Any mental disorder[a]	15.9	12.8	14.4

(a) Totals are lower than the sum of disorders as children and adolescents may have had more than 1 class of mental disorder in the previous 12 months.

Source: Lawrence et al. 2015.

In 2013–14, the Young Minds Matter survey found that around 11% of adolescents aged 12–17 had ever deliberately hurt or injured themselves without trying to end their life (self-harmed). Of those adolescents who had self-harmed, almost three-quarters (73%) had harmed themselves in the previous 12 months. Females aged 16–17 had the highest rates of self-harm, with 17% having harmed themselves in the previous 12 months (Lawrence et al. 2015).

See Suicide and intentional self-harm for more information.

According to the Australian Bureau of Statistics (ABS) 2017–18 National Health Survey, 15% (339,000) of people aged 18–24 experienced high or very high psychological distress, with this proportion higher among young women (18%) than young men (12%) (ABS 2019c).

Disability

In 2018, 9.3% of all people aged 15–24 had disability (around 291,000 people) (ABS 2019e). The prevalence of disability was similar for males (9.2%) and females (9.5%). Of young people aged 15–24:

- 3.4% had severe or profound core activity limitations
- 6.9% had schooling or employment restrictions (ABS 2019e).

The prevalence of young people with disability was similar in 2003 and 2018 (9.0% and 9.3%, respectively). There was an increase between 2009 and 2012 from 6.6% to 7.8% (ABS 2019e).

See Health of people with disability for more information.

Injuries

In 2017–18, there were around 73,200 hospitalised injury cases among young people aged 15–24 due to injury or poisoning—a rate of 2,300 per 100,000. Of these cases, 72,600 had a cause of injury recorded. The leading causes of these injuries were:

- land transport accidents (18%, or 12,700)
- injury from inanimate mechanical forces (such as being struck or cut by something other than another human or animal) (17%, or 12,500)
- falls (15%, or 10,700) (Figure 2).

See Injury.

Figure 2: Hospitalised injury cases of young people aged 15–24, by causes of injury, 2017–18
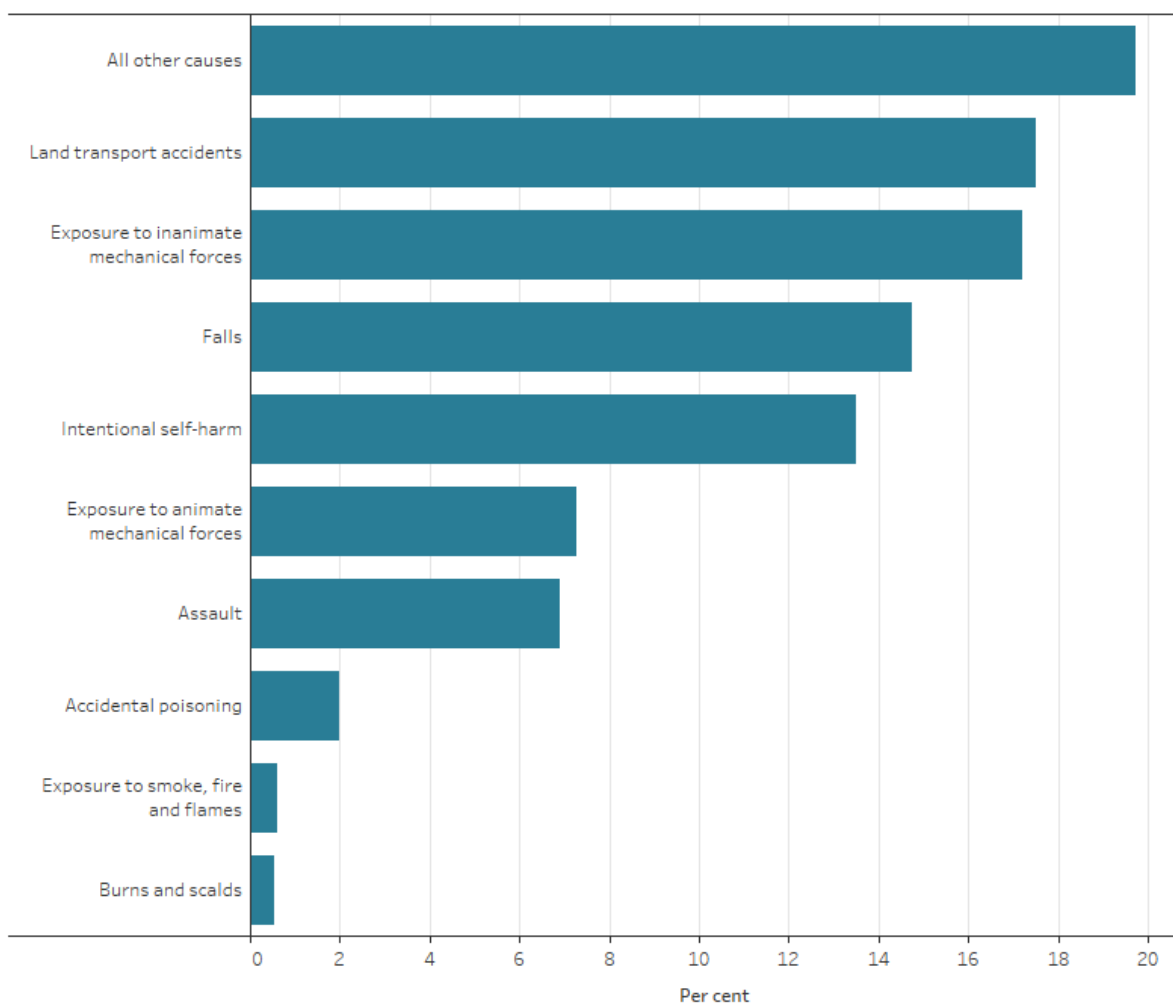
Note: Definitions of intentional self-harm will differ from those used in the Young Minds Matter Survey.
Source: AIHW National Hospital Morbidity Database.
http://www.aihw.gov.au/

Deaths

In 2018, the death rate among young people aged 15–24 was 35 deaths per 100,000. Overall, the death rate among young people has fallen over time from 42 deaths per 100,000 in 2009 to 35 deaths per 100,000 in 2018.

Death rates were higher among young males (49 per 100,000) than females (20 per 100,000) (AIHW 2019b). The leading cause of death among young people was injuries (74%).

In 2018, injuries contributed 845 deaths of young people aged 15–24—a rate of 26 per 100,000 people. The leading causes of injury deaths were intentional self-harm (51%), land transport accidents (26%) and accidental poisoning (8.0%).

In 2018, the age-specific rate of suicide among young people was 13.5 per 100,000. Young people accounted for 14% of suicide deaths. The rate of suicide was higher among young males (20 per 100,000) than females (6.4 per 100,000) (ABS 2019b).

Between 2009 and 2018, the rate of suicide among young people increased from 9.1 per 100,000 in 2009 to 14 per 100,000 in 2018 (ABS 2019b).

See Causes of death and Suicide and intentional self-harm for more information.

Health risk factors

Overweight and obesity

According to the ABS National Health Survey 2017–18, 41% (1.3 million) of young people aged 15–24 were overweight or obese. This proportion was higher among males than females—47% (737,000) of males aged 15–24 were overweight or obese compared with 36% (543,000) of females (ABS 2019c).

For further detail of how overweight and obesity is defined and measured, see Overweight and obesity.

Substance use

Data from the 2019 National Drug Strategy Household Survey (NDSHS) are available to report on substance use among young people aged 14–24. Self-reported data from the 2019 NDSHS found that 97% of young people aged 14–17 and 80% of people aged 18–24 had never smoked tobacco.

Fewer young people are taking up smoking

The proportion of people aged 14–17 who had never smoked increased from 82% in 2001 to 97% in 2019.

The proportion of 14–17 year olds who were daily smokers decreased from 11% in 2001 to 1.9% in 2019. However, the estimate for 2019 should be interpreted with caution as the RSE (relative standard error) is between 25% and 50%.

In 2019, two-thirds (66%) of young people aged 14–17 had never had a full serve of alcohol, compared with only 15% of those aged 18–24. The proportion of 14–17 year olds consuming 5 or more drinks at least monthly remained stable between 2016 and 2019 (8.0% and 8.9%, respectively) but has declined since 2001 (30%) (AIHW 2020b).

There were no significant declines among 14–17 year olds in recent illicit drug use (at least once in the past 12 months) between 2016 and 2019. However recent use was considerably lower in 2019 (9.7%) than in 2001 (23%); use of cannabis fell from 21% to 8.2% (AIHW 2020b).

For more detailed information about substance use among Australians, see [Tobacco smoking](), [Alcohol risk and harm]() and [Illicit drug use]().

Sexual and reproductive health

In 2018, the sixth National Survey of Australian Secondary Students and Sexual Health found:

- most students in Years 10, 11 and 12 had engaged in some form of sexual activity, from deep kissing (74%) to sexual intercourse (47%)

- most sexually active students reported that they had discussed having sex (81%) and protecting their sexual health (77%) prior to sex, and were using condoms (57%) and/or oral contraception (41%)

- one-third (33%) of students reported 'sexting' in the previous 2 months (mostly with a boyfriend, girlfriend or friend) (Fisher et al. 2019).

A large proportion of students (79%) had accessed the internet to find answers to sexual health information, but the most trusted sources of information were: GPs (89%), followed by mothers (60%) and community health services (55%) (Fisher et al. 2019).

Health care

Mental health services

In 2018–19, young people aged 12–24 made up 21% (557,000) of all people receiving Medicare-subsidised mental health-specific services. Across different service providers, young people aged 12–24 accounted for:

- 19% (78,100) of people receiving services from psychiatrists
- 21% (472,000) of people receiving services from general practitioners
- 22% (118,000) of people receiving services from clinical psychologists

- 23% (169,000) of people receiving services from other psychologists
- 23% (25,200) of people receiving services from other allied health providers (AIHW 2020a).

For further information, see Mental health services.

HPV immunisation

Immunisation against the human papillomavirus (HPV) can prevent cervical and other cancers, and other HPV-related diseases. The National HPV Vaccination Program has been immunising adolescent girls since 2007 and was extended to boys in 2013.

In 2015–16:

- 80% of girls aged 15 were fully immunised against HPV, an increase from 79% in 2014–15
- 74% of boys aged 15 were fully immunised against HPV, an increase from 67% in 2014–15 (AIHW 2018).

See Immunisation and vaccination.

Patient experiences

The ABS Patient Experiences in Australia survey collects information about access and barriers to a range of health care services. In 2018–19, the most common health service used by young people aged 15–24 in the 12 months before the survey was a general practitioner (GP) (Figure 3) (ABS 2019d).

In 2018–19, the majority of young people who saw a GP said the GP always: listened carefully (71%), showed respect (79%) and spent enough time with them (71%). However, 19% said they waited longer than they felt was acceptable to get an appointment (ABS 2019d).

See Patient experience of health care.

Figure 3: Experience of health services in the last 12 months for young people aged 15–24 by sex, 2018–19

Sex
Males
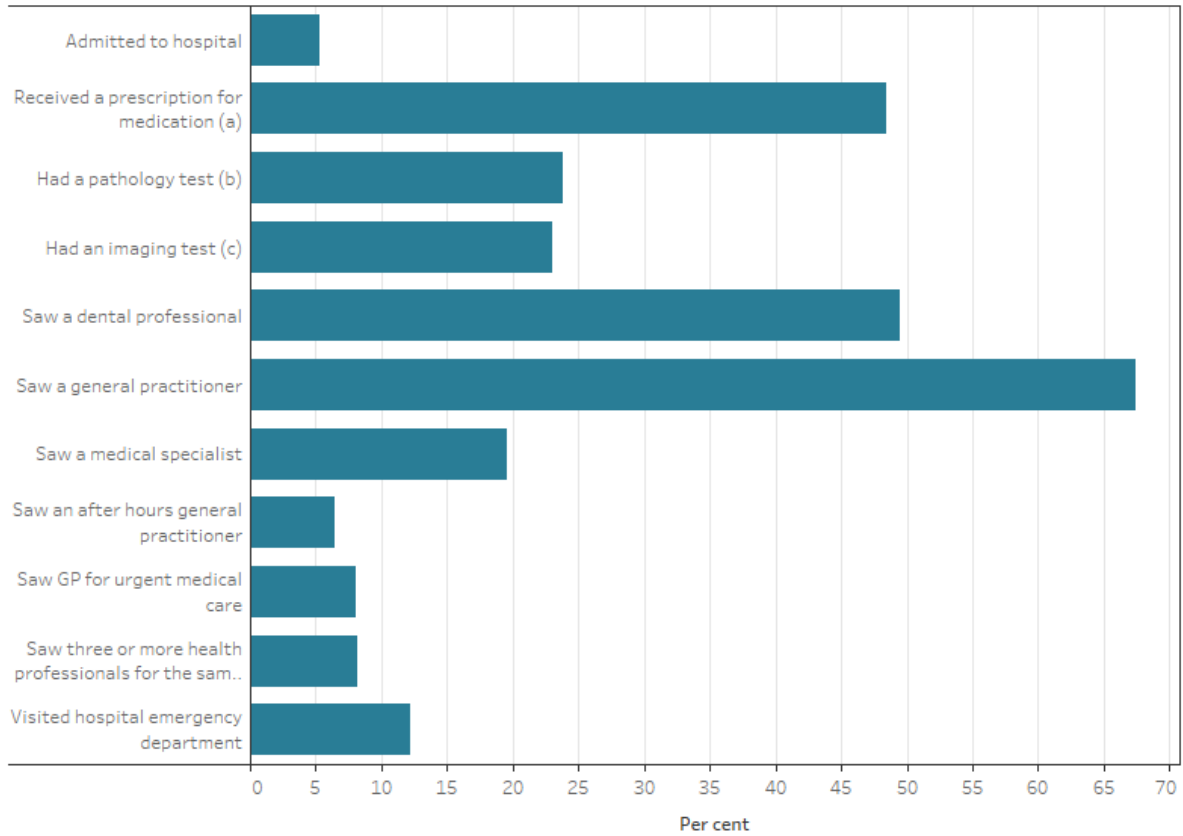
Notes
(a) Includes only prescriptions received from a GP.
(b) Excludes tests conducted in hospital.
(c) Excludes tests conducted in hospital and dental imaging tests.
Source: ABS 2019d.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on the health of young people, see:

- Australia's children
- National Youth Information Framework (NYIF) indicators
- Young Australians: their health and wellbeing
- Aboriginal and Torres Strait Islander adolescent and youth health and wellbeing 2018

Visit Children & youth for more on this topic.

If you or someone you know needs help please call:

Lifeline 13 11 14

Suicide call back service 1300 659 467

Kids Helpline 1800 55 1800

References

ABS (Australian Bureau of Statistics) 2019a. Australian Demographic Statistics, June 2019. ABS cat. no. 3101.0. Canberra: ABS.

ABS 2019b. Causes of death, Australia, 2018. ABS cat. no. 3303.0. Canberra: ABS.

ABS 2019c. Microdata: National Health Survey 2017–18, Confidentialised Unit Record File. ABS cat no. 4324.0.55.001. Findings based on AIHW analysis of ABS microdata.

ABS 2019d. Patient experiences in Australia: summary of findings, 2018–19. ABS cat. no. 4839.0. Canberra: ABS.

ABS 2019e. Survey of Disability, Ageing and Carers, 2018. ABS cat. no. 4430.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2011. Young Australians: their health and wellbeing 2011. Cat. no. PHE 140. Canberra: AIHW.

AIHW 2015. National Youth Information Framework (NYIF) indicators. Cat. no. WEB 70. Canberra: AIHW. Viewed 30 October 2019.

AIHW 2017. National Drug Strategy Household Survey 2016: detailed findings. Drug Statistics series no. 31. Cat. no. PHE 214. Canberra: AIHW.

AIHW 2018. HPV immunisation rates in 2015–16. Cat. no. HPF 17. Canberra: AIHW. Viewed 25 September 2019.

AIHW 2019a. Australian Burden of Disease Study: impact and causes of illness and death in Australia, 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019b. Deaths in Australia. Cat. no. PHE 229. Canberra: AIHW.

AIHW 2020a. Mental health services in Australia. Canberra: AIHW. Viewed 1 February 2020.

AIHW 2020b. National Drug Strategy Household Survey 2019. Drug Statistics series no. 32. Cat. no. PHE 270. Canberra: AIHW.

Carlisle E, Fildes J, Hall S, Hicking V, Perrens B & Plummer J 2018. Mission Australia's 2018 Youth Survey report. Sydney: Mission Australia. Viewed 24 September 2019.

Fisher CM, Waling A, Kerr L, Bellamy R, Ezer P, Mikolajczak G et al. 2019. 6th National Survey of Australian Secondary Students and Sexual Health 2018, ARCSHS (Australian Research Centre in Sex, Health & Society) monograph series No. 113. Bundoora (Melbourne): La Trobe University. Viewed 24 September 2019.

Lawrence D, Johnson S, Hafekost J, Boterhoven De Haan K, Sawyer M, Ainley J & Zubrick SR 2015. The mental health of children and adolescents: report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. Canberra: Department of Health. Viewed 24 September 2019.

Rural and remote health

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/rural-and-remote-health

Around 7 million people—about 28% of the Australian population—live in rural and remote areas, which encompass many diverse locations and communities (ABS 2019d). These Australians face unique challenges due to their geographic location and often have poorer health outcomes than people living in metropolitan areas. Data show that people living in rural and remote areas have higher rates of hospitalisations, deaths, injury and also have poorer access to, and use of, primary health care services, than people living in *Major cities*.

Despite poorer health outcomes for some, the Household, Income and Labour Dynamics in Australia (HILDA) survey found that Australians living in towns with fewer than 1,000 people generally experienced higher levels of life satisfaction than those in urban areas and major cities (Wilkins 2015).

How is remoteness area classified?

The Australian Statistical Geography Standard Remoteness Structure, 2016 defines remoteness areas in 5 classes of relative remoteness across Australia:

- *Major cities*
- *Inner regional*
- *Outer regional*
- *Remote*
- *Very remote.*

These remoteness areas are centred on the Accessibility/Remoteness Index of Australia, which is based on the road distances people have to travel for services (ABS 2018a).

The term 'rural and remote' covers all areas outside Australia's *Major cities*. It is worth noting that *Major cities* excludes some capital and large cities such as Hobart and Darwin (ABS 2018a). Due to small numbers of people living in some remoteness areas, data have been combined. However, this has been avoided where possible (ABS 2018c).

Profile of rural and remote Australians

Age

On average, people living in *Remote and very remote* areas are younger than those in *Major cities*. In 2017:

- *Remote and very remote* areas had a higher proportion of people aged 0–14 (22%) than *Major cities* (19%) and *Inner regional and outer regional* (19%) areas

- *Remote and very remote* areas also had a higher proportion of people aged 25–44 (30%) than *Inner regional and outer regional* areas (23%) but, was similar to *Major cities* (30%)

- *Remote and very remote* areas had a lower proportion of people aged 65 and over (11%) than *Inner regional and outer regional* areas (19%) and *Major cities* (14%) (ABS 2018b).

This page provides an overall picture of the health of rural and remote Australians. Poor health outcomes among people in these areas are influenced by the high proportion of Aboriginal and Torres Strait Islander people living in these areas. In 2016, 18% of people living in *Remote* and 47% in *Very remote* areas were Indigenous compared with 1.7% in *Major cities*. However, more Indigenous Australians live in non-remote areas (81% of Indigenous Australians) than remote areas (19% of Indigenous Australians) (AIHW 2019f).

Indigenous Australians have lower life expectancies, higher rates of chronic and preventable illnesses, poorer self-reported health and a higher likelihood of being hospitalised than non-Indigenous Australians. Therefore, differences in health with increasing remoteness could also be explained by the poorer health of the Indigenous population living in these areas (AIHW 2014).

See Profile of Indigenous Australians.

Education

In 2019, people aged 20–64 living in rural and remote areas were less likely than those in *Major cities* to have completed Year 12 or a non-school qualification. Around half the people living in *Inner regional* (53%)*, Outer regional* (52%) and *Remote and very remote* areas (55%) had completed Year 12, compared with three-quarters (75%) of those in *Major cities* (ABS 2019a).

Similarly, a smaller proportion of people aged 20–64 living in *Inner regional* (21%), *Outer regional* (18%) and *Remote and very remote* areas (20%) had completed a bachelor's degree or above, compared with those in *Major cities* (37%) (ABS 2019a). However, people may be more likely to move to metropolitan areas to study and subsequently stay after completing their studies (Australian Clearinghouse for Youth Studies 2015). The education levels of people living in rural and remote areas are also influenced by factors such as decreased study options, the skill and education requirements of

available jobs and the earning capacity of jobs in these communities (Lamb & Glover 2014; Regional Education Expert Advisory Group 2019).

Employment and income

In general, people aged 15 and over living in metropolitan areas are more likely to be employed than people living outside these areas (AIHW 2019f). This may be due to lower levels of access to work outside metropolitan areas and the smaller range of employment and career opportunities in these areas (ABS 2019c; NRHA 2013).

People living in rural and remote areas also generally have lower incomes but pay higher prices for goods and services (NRHA 2014). In 2017−18, Australians living outside capital cities had, on average, 19% less household income per week compared with those living in capital cities, and 30% less mean household net worth (ABS 2019b).

Health risk factors

Health risk factors such as smoking, overweight and obesity, diet, high blood pressure, alcohol consumption and physical activity can influence health outcomes and the likelihood of developing disease or health disorders.

In 2017−18, people living in *Inner regional* and *Outer regional and remote* areas were more likely to engage in risky behaviours, such as smoking and consuming alcohol at levels that put them at risk of life-time harm, compared with people living in *Major cities* (AIHW 2019f) (Figure 1).

More recent data for daily tobacco smoking and alcohol consumption levels, including for very remote areas, is available at Alcohol, tobacco & other drugs.

Figure 1: Prevalence of health risk factors, by remoteness area, 2017–18
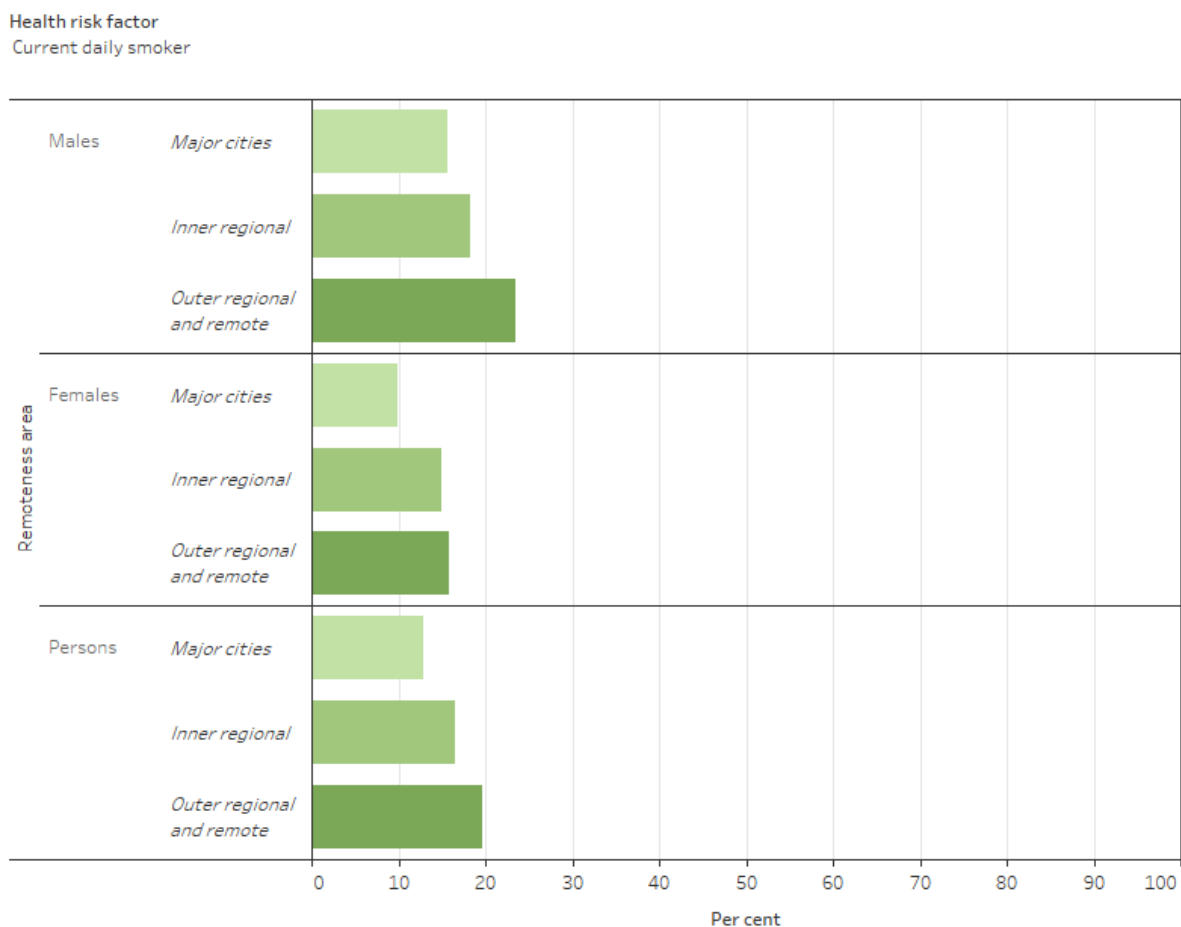
Health risk factor
Current daily smoker

Notes
1. Proportions were age standardised to the 2001 Australian Standard Population.
2. Excludes *Very remote* areas.
3. Data are self-reported.
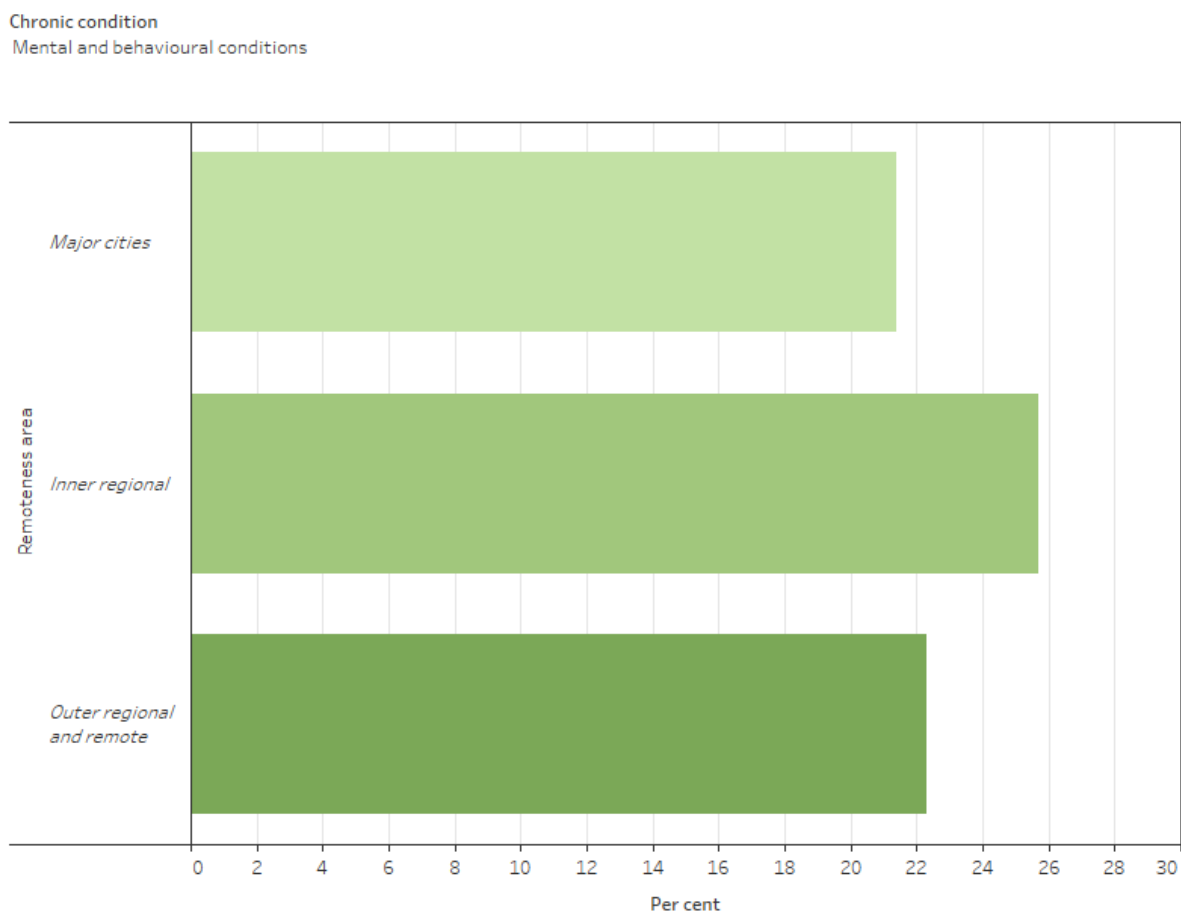*Source:* AIHW 2019f.
http://www.aihw.gov.au/

Health status

Chronic conditions

Chronic conditions are long-lasting and have persistent effects throughout a person's life. They are becoming increasingly common and are influenced by a wide variety of factors.

In 2017–18, people living outside *Major cities* had higher rates of arthritis, asthma and diabetes, while mental and behavioural conditions were higher in *Inner regional* areas compared with *Outer regional and remote* areas and *Major cities*. However, rates of all other conditions were similar across remoteness areas (AIHW 2019f) (Figure 2). See Chronic conditions and multimorbidity and Indigenous health and wellbeing.

Figure 2: Prevalence of the population with selected chronic conditions, by remoteness area, 2017–18

Chronic condition
Mental and behavioural conditions

Notes
1. Proportions were age standardised to the 2001 Australian Standard Population.
2. Excludes *Very remote* areas.
3. Data are self-reported.
Source: AIHW 2019f.
http://www.aihw.gov.au/

Burden of disease

In 2015, after adjusting for age, the total burden of disease and injury in Australia increased with increasing remoteness. *Major cities* experienced the least burden per population, while *Remote and very remote* areas experienced the most. The rate of disease burden in *Remote and very remote* areas was 1.4 times as high as that for *Major cities*.

This pattern was mostly driven by fatal burden (years of life lost due to premature death). In *Remote and very remote* areas, fatal burden rates were 1.7 times as high as that of *Major cities*, while non-fatal burden rates were 1.2 times as high. Kidney and urinary diseases and injuries were disease groups with particularly higher rates of burden in *Remote and very remote* areas, compared with *Major cities* (more than twice as high) (AIHW 2019b). See Burden of disease.

Deaths

People living in rural and remote areas are more likely to die at a younger age than their counterparts in *Major cities*. They have higher mortality rates and higher rates of potentially avoidable deaths—deaths under the age of 75 from conditions that are potentially preventable through primary or hospital care—than those living in *Major cities*.

In 2018, age-standardised mortality rates increased as remoteness increased for males and females:

- Males living in *Very remote* areas had a mortality rate 1.5 times as high as those living in *Major cities*.
- Females living in *Very remote* areas had a mortality rate 1.7 times as high as those living in *Major cities* (AIHW 2019e) (Table 1).

See [Causes of death](#).

Table 1: Median age at death, mortality rate, and rate ratio, by sex and remoteness area, 2018

	Major cities	Inner regional	Outer regional	Remote	Very remote
Males					
Median age at death (years)	79	78	76	73	68
Age-standardised rate (deaths per 100,000)	567	648	696	729	834
Rate ratio	1.0	1.1	1.2	1.3	1.5
Females					
Median age at death (years)	85	84	83	80	70
Age-standardised rate (deaths per 100,000)	405	463	467	488	680
Rate ratio	1.0	1.1	1.2	1.2	1.7

1. Rates are age standardised to the 2001 Australian population.

2. Rate ratio is the age-standardised mortality rate for each area divided by the age-standardised rate for *Major cities*.

Source: AIHW 2019e.

Health care

The challenges of geographic spread, low population density, limited infrastructure and the higher costs of delivering rural and remote health care can affect access to health care.

Primary health care

People living in *Remote* and *Very remote* areas generally have poorer access to health services than people in regional areas and *Major cities*. Medicare claims data from 2018–19 show that the numbers of non-hospital non-referred attendances per person, such as GP visits, were lower in *Remote* and *Very remote* areas (4.8 and 3.6 per person respectively), than in *Outer regional* areas (6.0 per person), *Inner regional* areas and *Major cities* (6.4 per person for each area) (Department of Health 2019).

People living in rural and remote areas face barriers to accessing health care, including that they often have to travel very long distances to get the care they need due to lack of nearby health services (AIHW 2020). However, bulk-billing rates were highest in *Very remote* areas (89%) and *Major cities* (87%) and slightly lower but similar in regional areas (84% in *Inner regional* and 85% in *Outer regional* areas) (Department of Health 2019). It should be noted that the above bulk-billing rates refer only to services where a bulk-billing option was provided. It should also be interpreted that these rates do not describe the proportion of patients who were entirely bulk-billed for their services.

People living in *Remote and very remote* areas also have lower rates of bowel, breast and cervical cancer screening and higher rates of potentially preventable hospitalisations (AIHW 2018, 2019a, 2019c, 2019d, 2020b).

See [Primary health care](#) and [Indigenous Australians' use of health services](#).

Health workforce

Australians living in *Remote* and *Very remote* areas experience health workforce shortages, despite having a greater need for medical services and practitioners with a broader scope of practice (AMA 2017). For nearly all types of health professions there is a marked decline in the rate of clinical full-time equivalent (FTE) practitioners per 100,000 population once outside *Major cities*. For example, the rate of specialists (all doctors other than GPs who require a referral from another doctor) substantially declined from 143 per 100,000 in *Major cities* to 83 in *Inner regional* areas, 63 in *Outer regional* areas, 61 in *Remote* areas and 22 in *Very remote* areas. However, the FTE rate for nurses and midwives is higher in *Remote* and *Very remote* areas compared with *Major*

cities, *Inner regional* and *Outer regional and remote* areas (Figure 3) (ABS 2019d; Department of Health 2020).

Although the clinical FTE rate for GPs increases with increasing remoteness, care should be taken in interpreting the data, as work arrangements in these areas have the potential to be more complicated (NRHA 2017). For example, there may be poor differentiation between general practice for on-call hours, activity for procedures and hospital work for GPs working in rural and remote areas, which affects the accuracy of statistics on GP supply and distribution (Walters et al. 2017).

See Health workforce.

Figure 3: Employed health professionals, clinical full-time equivalent (FTE) rate, by remoteness area, 2018

Type of health professional
Dentists
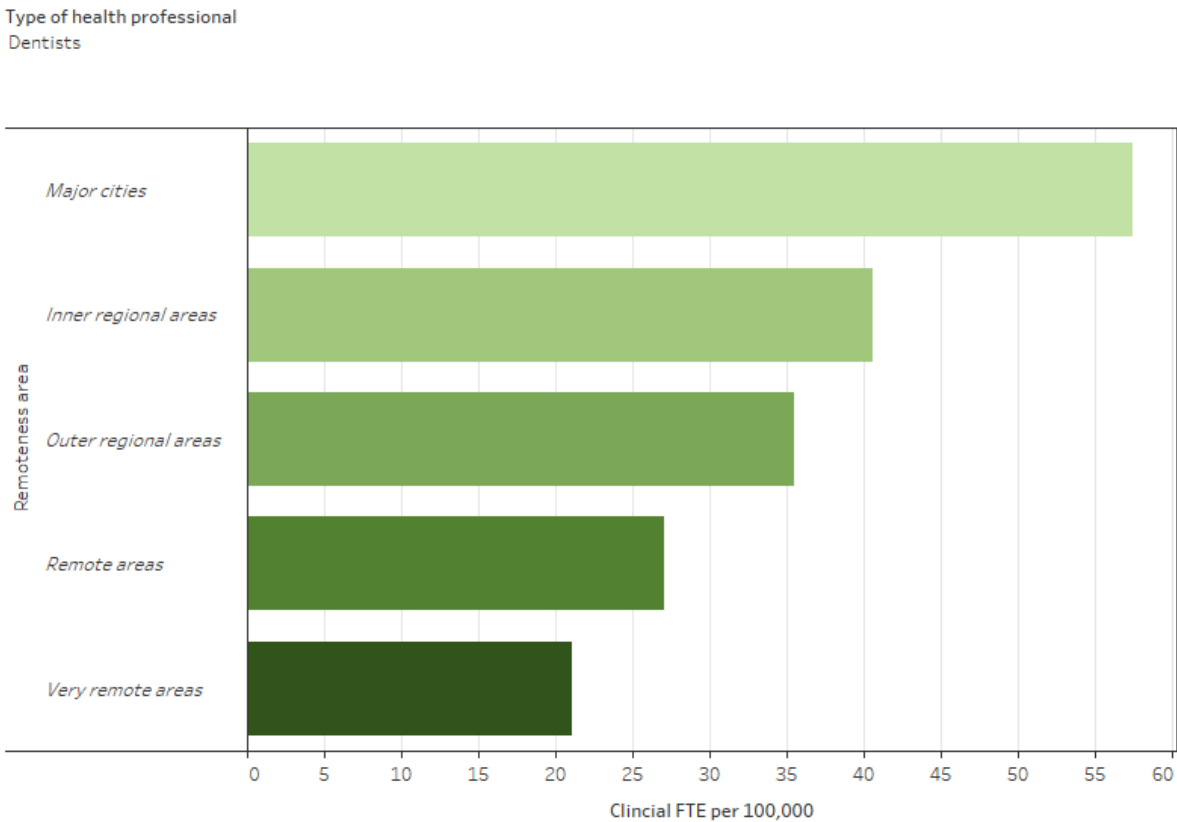
Notes
1. Calculations are based on the FTE clinical rate and report health practitioners working in clinical practice using the Estimated Resident Population as at 2019.
2. FTE clinical rates are equal to the FTE number per 100,000 population, which is based on total weekly hours worked. For medical practitioners, the standard working week is 40 hours and for all other health practitioners it is 38 hours.
3. Remoteness area is derived from remoteness area of main job where available; otherwise, remoteness area of principal practice is used as a proxy.
4. Numbers represent not only those in the labour force, but those employed and working in their registered profession.
Source: ABS 2019d; Department of Health 2020.
http://www.aihw.gov.au/

Potentially preventable hospitalisations

Potentially preventable hospitalisations (PPH) are conditions where hospitalisation could have potentially been prevented through the provision of appropriate individualised preventative health interventions and early disease management, usually delivered in primary care and community-based settings. When compared with *Major cities,* the rate of PPH for those in *Very remote* areas was 2.5 times as high and in *Remote* areas was 1.7 times as high in 2017−18. For regional areas, the PPH rates were slightly higher than for *Major cities* (AIHW 2019a). See 'Potentially preventable hospitalisations: an opportunity for greater exploration of health inequity' in Australia's health 2020: data insights.

Where do I go for more information?

For more information on rural and remote health please see:

- Rural and remote health

- Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015

- Mortality Over Regions and Time (MORT) books

- Non-admitted patient care 2017–18: Australian hospital statistics

- Disparities in potentially preventable hospitalisations across Australia, 2012–13 to 2017–18

Visit Rural and remote Australians for more on this topic.

References

ABS (Australian Bureau of Statistics) 2018a. Australian Statistical Geography Standard (ASGS): Volume 5—Remoteness structure, July 2016. ABS cat. no. 1270.0.55.005. Canberra: ABS.

ABS 2018b. Population by age and sex, regions of Australia, 2017. ABS cat. no. 3235.0. Canberra: ABS. Derived by AIHW from SA1 estimated resident population.

ABS 2018c. Remoteness structure. Canberra: ABS. Viewed 14 May 2019.

ABS 2019a. Education and work, Australia, May 2019. ABS cat. no. 6227.0. Canberra: ABS.

ABS 2019b. Household income and wealth, Australia, 2017–18. ABS cat. no. 6523.0. Canberra: ABS.

ABS 2019c. Labour force, Australia; detailed electronic delivery, December 2018. ABS cat. no. 6291.0.55.001. Canberra: ABS.

ABS 2019d. Regional population growth, Australia, 2017–18. ABS cat. no. 3218.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2014. Australia's health 2014. Cat. no. AUS 178. Canberra: AIHW.

AIHW 2018. Australia's health 2018. Australia's health series no. 16. Cat. no. AUS 221. Canberra: AIHW.

AIHW 2019a. Admitted patient care 2017–18: Australian hospital statistics. Health services series no. 90. Cat. no. HSE 225. Canberra: AIHW.

AIHW 2019b. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2015. Australian Burden of Disease series no. 19. Cat. no. BOD 22. Canberra: AIHW.

AIHW 2019c. BreastScreen Australia monitoring report 2019. Cat. no. CAN 128. Canberra: AIHW.

AIHW 2019d. National Bowel Cancer Screening Program: monitoring report 2019. Cancer series no. 125. Cat. no. CAN 125. Canberra: AIHW.

AIHW 2019e. National Mortality Database. Findings based on our unit record analysis. Canberra: AIHW.

AIHW 2019f. Rural & remote health. Cat. no. PHE 255. Canberra: AIHW. Viewed 29 October 2019.

AIHW 2020. Coordination of health care: experiences of barriers to accessing health services among patients aged 45 and over. Cat. no. CHC 04. Canberra: AIHW.

AMA (Australian Medical Association) 2017. Rural workforce initiatives 2017. Canberra: Australian Medical Association. Viewed 17 June 2019.

Australian Clearinghouse for Youth Studies 2015. Engaging young people in regional, rural and remote Australia. Tasmania: Australian Clearinghouse for Youth Studies. Viewed 24 June 2016.

Department of Health 2019. Annual Medicare statistics. Canberra: Department of Health. Viewed 16 September 2019.

Department of Health 2020. Health workforce data tool. Canberra: Department of Health. Viewed 20 February 2020.

Lamb S & Glover S 2014. Educational disadvantage and regional and rural schools. Melbourne: Mitchell Institute for Health and Education Policy, Victoria University.

NRHA (National Rural Health Alliance) 2013. A snapshot of poverty in rural and regional Australia. Canberra: NRHA. Viewed 25 June 2019.

NRHA 2014. Income inequality experienced by the people of rural and remote Australia. Canberra: NRHA.

NRHA 2017. Health workforce. Canberra: NHRA. Viewed 25 June 2019.

Regional Education Expert Advisory Group 2019. National Regional, Rural and Remote Education Strategy: final report. Canberra: Department of Education. Viewed 20 February 2020.

Walters L, McGraik M, Carson D, O'Sullivan B, Russell D, Strasser R et al. 2017. Where to next for rural general practice policy and research in Australia? The Medical Journal of Australia 207:56–58.

Wilkins R 2015. The Household, Income and Labour Dynamics in Australia Survey: selected findings from waves 1 to 12. Melbourne: Melbourne Institute of Applied Economic and Social Research.

Indigenous health

For Aboriginal and Torres Strait Islander people, good health is more than the absence of disease or illness; it is a holistic concept that includes physical, social, emotional, cultural, spiritual and ecological wellbeing, for both the individual and the community.

Culturally safe health care for Indigenous Australians

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/culturally-safe-healthcare-indigenous-australians

In Australia, there has been increasing recognition that improving cultural safety for Aboriginal and Torres Strait Islander health care users can improve their access to health care and the quality of the health care they receive (AHMAC 2016). This in turn is likely to improve health outcomes and help to address gaps in health and wellbeing between Indigenous and non-Indigenous Australians. See Indigenous health and wellbeing.

The National Aboriginal and Torres Strait Islander Health Plan 2013–23 describes a vision for the Australian health system that is culturally safe, free of racism and inequality and one where all Aboriginal and Torres Strait Islander people have access to health services that are effective, high-quality, appropriate and affordable (Department of Health 2013).

Defining cultural safety

In Australian research there are various definitions of cultural safety and what it means in relation to the provision of health care.

The Cultural Respect Framework 2016–26 defines cultural safety as: 'not [being] defined by the health professional, but is defined by the health consumer's experience—the individual's experience of care they are given, ability to access services and to raise concerns'.

The framework outlines the essential features of cultural safety, including:

- an understanding of one's culture

- an acknowledgement of difference, and a requirement that caregivers are actively mindful and respectful of difference(s)

- it is informed by a theory of power relations

- an appreciation of the historical context of colonisation, the practices of racism at individual and institutional levels, and their impact on First Nations people's living and wellbeing, both in the present and past (AHMAC 2016).

How is cultural safety measured?

The AIHW developed the [Cultural Safety in Health Care for Indigenous Australians: Monitoring Framework](#) to bring together available data to assess progress in achieving cultural safety in health care for Aboriginal and Torres Strait Islander people (AIHW 2019a).

The framework has 3 reporting modules which each include measures focusing on culturally respectful health care services, patient experience of health care among Indigenous people, and access to health care as an indirect measure of cultural safety. It presents measures from national, state and regional data sources where possible.

Module 1 Culturally respectful health care services	Module 2 Patient experience of health care	Module 3 Access to health care services
How health care is delivered and whether systems and providers are aware and responsive to Indigenous Australians' cultural perspectives. Informed by the Cultural Respect Framework for Aboriginal and Torres Strait Islander Health.	Indigenous Australians' experiences of health care, and is not defined by the caregiver. Based on a literature review and research on Indigenous Australians' views on cultural safety.	Access to health care services as a way of indirectly assessing cultural safety, though disparities may be due to a range of factors, such as availability or affordability. Relates to different levels of the health system—preventative health services; primary health care; hospital and specialist services.

Health care services

The cultural safety of Aboriginal and Torres Strait Islander health care users cannot be improved in isolation from the provision of health care, and the extent to which health care systems and providers are aware of and responsive to Indigenous Australians' perspectives. The structures, policies and processes across the health system all play a role in delivering culturally respectful health care. Aspects of the provision of culturally safe health care include organisational commitments to provide culturally safe care, appropriate communication and services, Indigenous workforce development and training, client and community feedback and collaboration with Indigenous organisations.

Most of the available data for this module relate to Aboriginal and Torres Strait Islander-specific primary health care services. Monitoring cultural safety and cultural respect directly in the health system are limited by a lack of measures in national and state level data (AIHW 2017 unpublished; DHHS 2016). This is particularly the case in relation to reporting on the policies and practices of mainstream health services, such as primary health care services and hospitals.

Selected results from the available data show that:

- 95% of Indigenous primary health care providers had a formal commitment to provide culturally safe health care in 2017–18 (AIHW analysis of Online Services Reports data 2012-13 to 2017-18).

- 363 Indigenous medical practitioners (0.4% of all employed medical practitioners) were employed in Australia in 2017—an increase from 234 in 2013 (AIHW 2019b).

- 3,540 Indigenous nurses and midwives (1.1% of all employed nurses and midwives) were employed in Australia in 2017—an increase from 2,434 in 2013 (AIHW 2019b).

- 4 in 10 (40%) Indigenous primary health care providers provided interpreter services to Indigenous Australians in 2017–18 (AIHW analysis of Online Services Reports data 2012-13 to 2017-18).

Patient experience

The experiences of Indigenous Australian health care users, including having their cultural identity respected, is critical for assessing cultural safety. Aspects of cultural safety include clear and respectful communication, respectful treatment, the inclusion of family members and empowerment in decision making. 'Take own leave', where Indigenous patients left against medical advice or were discharged at their own risk, is also measured as it may be linked to feelings of cultural safety.

Most jurisdictions undertake surveys about patients' experiences in public hospitals, but there is little available data on Indigenous Australians' patient experience. A high proportion of Indigenous Australians use mainstream health services, so further data developments in this area are required to allow for more comprehensive reporting across the health sector. Selected results from the latest available data show that:

- an estimated 89% of Indigenous adults in non-remote areas who consulted a doctor in the previous 12 months said that their doctor always/usually listened (in 2018–19) (AIHW analysis of NATSIHS 2018–19)

- an estimated 91% of Indigenous adults in non-remote areas who consulted a doctor in the previous 12 months reported their doctor always/usually showed respect for what was said (in 2018–19) (AIHW analysis of NATSIHS 2018–19).

- the rate of Indigenous patients who left against medical advice or were discharged at their own risk ranged from less than 1% of Indigenous patients hospitalised in Tasmania to 9% in the Northern Territory (in 2015–17) (AIHW 2020, forthcoming).

See Patient experience of health care.

Access

Indigenous Australians experience poorer health than non-Indigenous Australians, but they do not always have the same level of access to health services. Disparities in access may be due to factors such as remoteness, affordability and a lack of cultural safety.

Selected measures of access to health care services for Indigenous and non-Indigenous Australians are used to monitor disparities in access. These include: immunisation rates, breast cancer screening, Indigenous health checks, access to antenatal care, potentially preventable hospitalisations, access to hospital procedures, elective surgery and emergency department waiting times, claims for MBS specialist services, treatment of end-stage kidney disease, and potentially avoidable deaths. The data provide overall measures of access, but do not include information on all the factors that can affect access. Selected results from available data show that:

- BreastScreen participation rates for the 2-year period 2017–2018 for Indigenous women aged 40 and over were 25% compared with 34% for non-Indigenous women (AIHW 2020, forthcoming)

- Indigenous Australians waited longer to be admitted for elective surgery in 2017–18 than non-Indigenous Australians (median waiting time of 48 days and 40 days, respectively) (AIHW 2018)

- in 2016–17, the rate of potentially preventable hospitalisations (PPH) for Indigenous Australians was nearly 3 times the rate for non-Indigenous Australians (70 and 26 per 1,000, respectively) (AIHW 2020, forthcoming).

See Indigenous Australians' use of health services and 'Chapter xx Potentially preventable hospitalisations: an opportunity for greater exploration of health inequity' in Australia's health 2020: data insights.

Where do I go for more information?

For more information on culturally safe health care for Indigenous Australians, see:

- Cultural Safety in Health Care for Indigenous Australians: Monitoring Framework

- Council of Australian Governments Health Council Cultural Respect Framework 2016–2026 for Aboriginal and Torres Strait Islander Health

- Department of Health National Aboriginal and Torres Strait Islander Health Plan 2013–2023

- Australian Commission of Safety and Quality in Health Care National Safety and Quality Health Service Standards user guide for Aboriginal and Torres Strait Islander health

Visit Indigenous Australians for more on this topic.

References

AHMAC (Australian Health Ministers' Advisory Council) 2016. Cultural Respect Framework 2016–26 for Aboriginal and Torres Strait Islander health: a national approach to building a culturally respectful health system. Canberra: AHMAC.

AIHW (Australian Institute of Health and Welfare) 2017, unpublished. Development of cultural safety measures. Report to the Department of Health, October 2017.

AIHW 2018. Elective surgery waiting times 2017–18: Australian hospital statistics. Health services series no. 88. Cat. no. HSE 215. Canberra: AIHW.

AIHW 2019a. Cultural Safety in Health Care for Indigenous Australians: Monitoring Framework. Cat. no. IHW 222. Canberra: AIHW.

AIHW 2019b. National Health Workforce Data Set. Findings based on unit record data. Canberra: AIHW.

AIHW 2020, forthcoming. Aboriginal and Torres Strait Islander Health Performance Framework report 2020. Canberra: AIHW.

Department of Health 2013. National Aboriginal and Torres Strait Islander Health Plan 2013–2023. Australian Government.

DHHS (Department of Health and Human Services Victoria) 2016. Improving cultural responsiveness of Victorian hospitals: final report. Victoria: DHHS.

Health risk factors among Indigenous Australians

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/health-risk-factors-among-indigenous-australians

Many factors can influence how likely it is that an individual will develop a disease or health disorder. These factors are known as determinants of health. Determinants of health include both social determinants and health risk factors.

This page provides an overview of the prevalence of certain health risk factors among Aboriginal and Torres Strait Islander people including overweight and obesity, alcohol consumption and smoking, dietary behaviours, and not meeting physical activity guidelines.

These health risk factors increase the likelihood of a person developing a chronic disease, or interfere with the management of existing conditions.

Many health risk factors are preventable and modifiable and significant reduction is associated with improved health outcomes.

Prevalence of health risk factors

Figure 1 presents prevalence rates of selected health risk factors for Indigenous and non-Indigenous Australians. Although Indigenous Australians have higher rates of health risk factors, the differences are small, except for tobacco smoking.

Figure 1: Age-standardised prevalance of selected health risk factors by Indigenous status, 2018–19
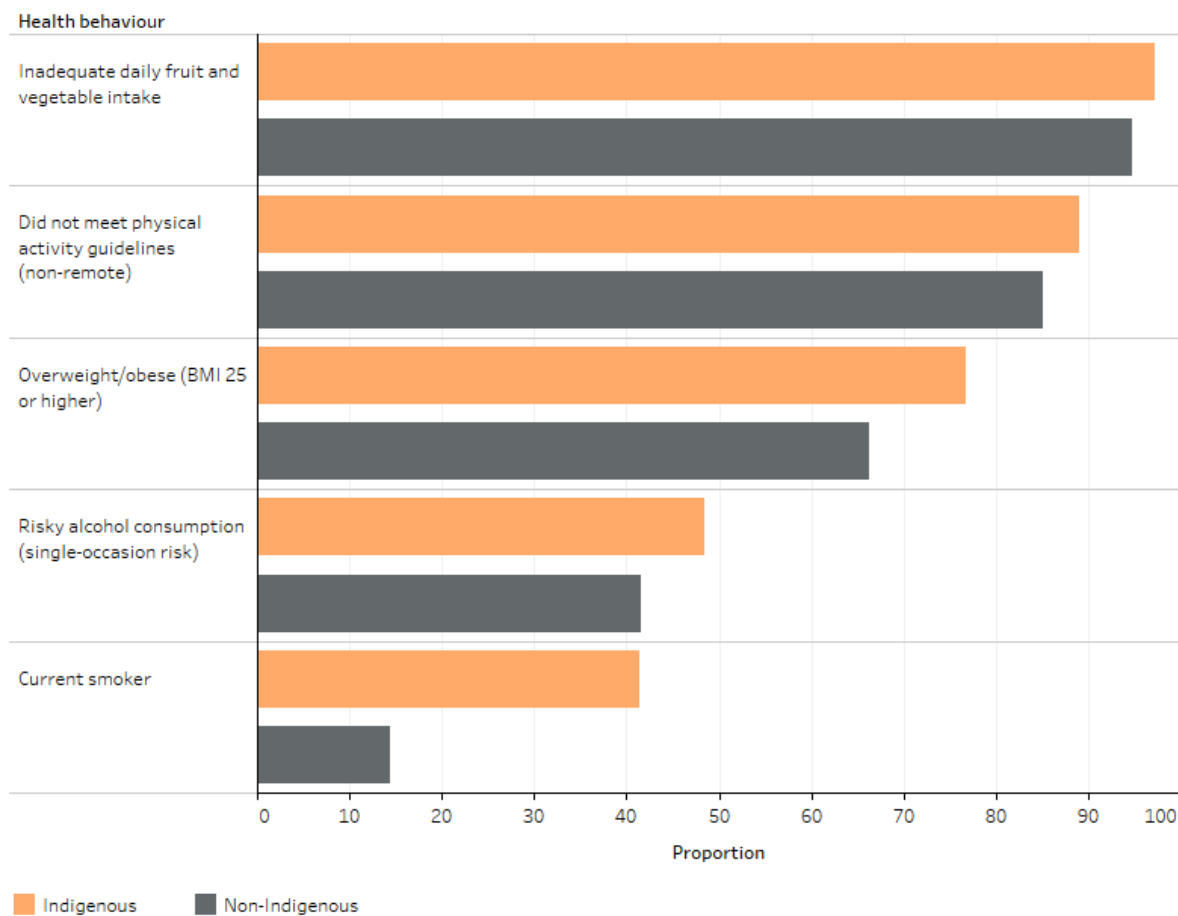
Notes
1. For non-Indigenous rates, 2017–18 was used.
2. The rates presented are age standardised rates and differ from crude rates.
3. The rate ratio is calculated by dividing the age standardised rate for Aboriginal and Torres Strait Islander people by the comparable age standardised rate for non-Indigenous Australians.
Source: ABS 2019.
http://www.aihw.gov.au/

Diet

Diet plays a key role in health and wellbeing and provides the energy and nutrients that the body needs to support tissue maintenance, repair and growth as well as overall health. If diet is poor, energy and nutritional intake can be insufficient or excessive and result in ill health.

Health conditions that are often affected by diet include overweight and obesity, coronary heart disease, stroke, high blood pressure, some forms of cancer and type 2 diabetes.

A range of external factors, including, for example, availability and affordability, may affect levels of fruit and vegetable consumption. In 2018–19, based on estimates from self-reported survey data:

- 97% (522,100) of Indigenous Australians aged 15 and over had inadequate daily fruit and vegetable consumption, with males more likely to have inadequate consumption than females (99% or 256,500 compared with 96% or 265,800, respectively)

- similar proportions of Indigenous Australians aged 15 and over in *Remote* (98% or 100,300) and *Non-remote* areas (97% or 421,700) had inadequate daily intake of fruit and vegetables

- for Indigenous children aged 2–14, 94% (224,000) had inadequate daily intake of fruit and vegetables

- The age-standardised proportion is not significantly different between Indigenous and non-Indigenous Australians (97.2% compared with 94.8%, respectively) (ABS 2019).

See Diet for more information.

Insufficient physical activity

Regular physical activity provides many benefits for physical and mental health and is an important factor in maintaining a healthy weight. Insufficient physical activity is a key contributor to disease burden in Australia. In 2018–19, based on self-reported data in *Non-remote* areas:

- most Indigenous Australians aged 15 and over (89% or 385,900) did not meet the physical activity guidelines

- there was no significant difference between the proportions of females (90% or 202,100) and males (87% or 183,200) who did not meet the physical activity guidelines (ABS 2019).

See Insufficient physical activity for more information.

Overweight and obesity

Excess weight is a major risk factor for many diseases, such as cardiovascular disease, type 2 diabetes, some musculoskeletal conditions and cancers. There are differences in weight status between Indigenous and non-Indigenous Australians, and these begin in childhood.

A healthy diet, physical activity and accessibility to support from general practitioners and other health services may all result in lower rates of overweight and obesity.

See Indigenous Australians' use of health services for more information.

Based on Body Mass Index (BMI) (derived from measured height and weight), in 2018-19 around 3.5% (17,000) of Indigenous Australians aged 18 and over were underweight, 22% (108,600) were within normal weight, 29% (141,100) were overweight and 45% (219,500) were obese. Similar proportions of Indigenous males (74% or 172,200) and females (75% or 189,100) were overweight or obese.

In 2018–19, the majority of Indigenous children aged 2–14 were within normal weight (54% or 129,100). Indigenous girls were slightly more likely to be overweight or obese (40% or 46,400) than boys (34% or 42,000) while Indigenous females aged 15–17 were 4 times as likely to be underweight than males of the same age group (14% or 3,300, compared with 3.1% or 800) (Figure 2) (ABS 2019).

Figure 2: Proportion of Indigenous Australians in each BMI category, by sex and age, 2018–19

Age group
2–14

Sex
Males

Body mass Index
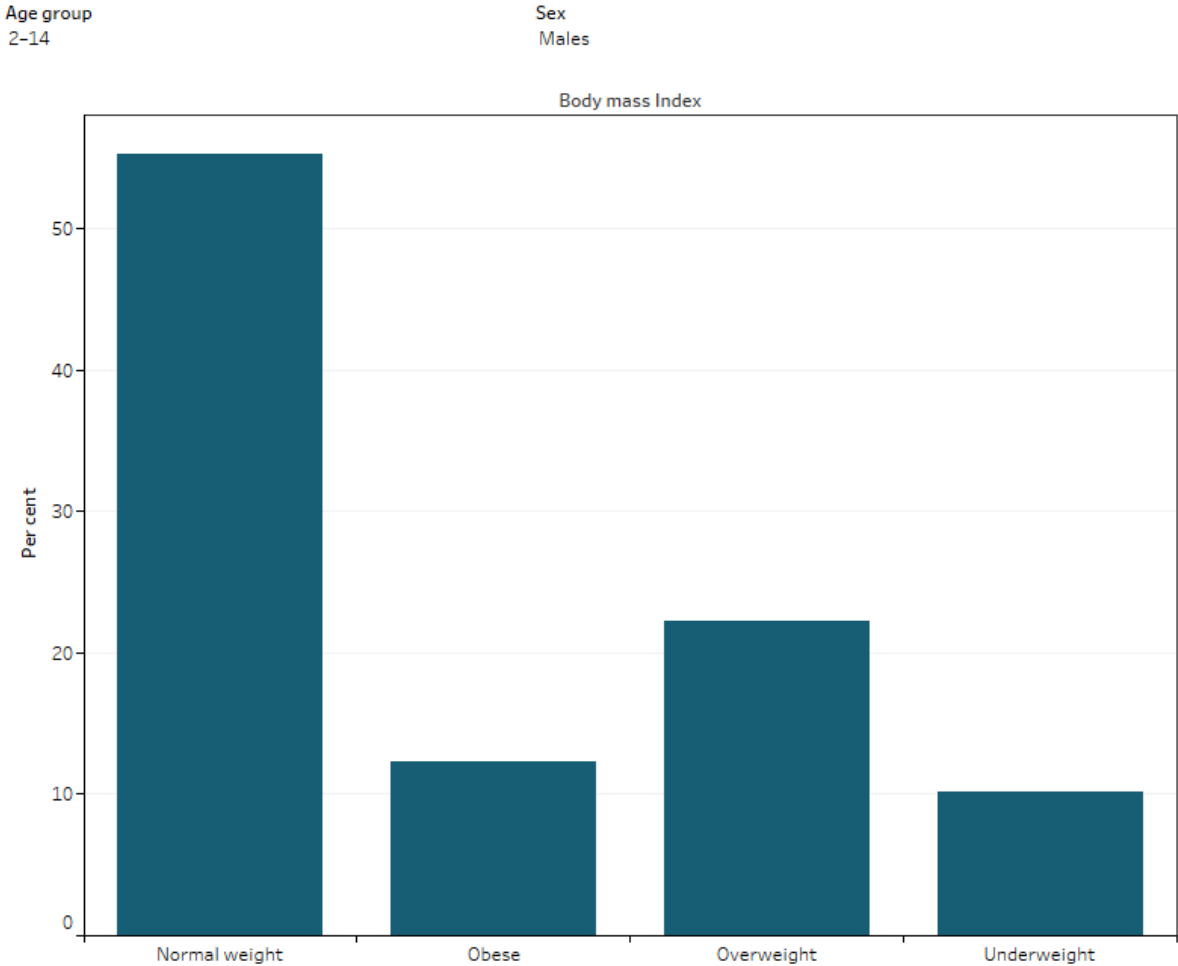
Note: BMI category is based on measured height and weight. Imputation was used to estimate BMI for Indigenous Australians whose height and/or weight was not measured (52% of those aged 2–14, 61% of those aged 15–17 and 40% of those aged 18 and over).
Source: ABS 2019.
http://www.aihw.gov.au

See Overweight and obesity for more information.

Alcohol consumption

Regular consumption of alcohol at high levels increases the risk of alcohol-related harm. High intakes can contribute to the development of chronic diseases or alcohol dependence, and premature death. Alcohol consumption can also play a part in excess energy intake, contributing to excess body weight.

Between 2001 and 2018–19, there was an increase in the proportion of Indigenous Australians aged 18 and over reporting that they had not consumed alcohol in the last 12 months or have never consumed alcohol, from 19% to 26%.

In 2018–19 survey data estimates:

- a greater number (37%) of Indigenous Australians aged 18 and over in *Remote* areas reported that they did not consume alcohol in the last 12 months or have never consumed alcohol than did Indigenous adults in the *Non-remote* areas (23%)
- similar proportions of Indigenous adults in *Non-remote* (54%) and *Remote* (53%) areas reported drinking at risky levels on at least a single occasion (known as short-term risk).

See Alcohol risk and harm for more information.

Tobacco smoking

Tobacco smoking is the leading preventable cause of ill health and death in Australia for both Indigenous and non-Indigenous Australians, contributing to respiratory diseases, cancers, cardiovascular diseases, infections and endocrine disorders.

In 2018–19, based on self-reported data, 43% (210,900) of Indigenous Australians aged 18 and over were current smokers (that is, those who regularly smoke 1 or more cigarettes, pipes, cigars or other tobacco products per day) with the proportion among males (46%) higher than among females (41%). Half of Indigenous Australians aged 18 and over who were current smokers had attempted to quit smoking in the previous 12 months (52% or 109,200).

Prevalence rates of smoking by Indigenous Australians aged 18 and over decreased between 2012–13 (46%) and 2018–19 (43%).

See Tobacco smoking for more information.

Where do I go for more information?

For more information on health risk factors among Indigenous Australians, see:

- Aboriginal and Torres Strait Islander Health Performance Framework report 2017
- Alcohol, tobacco & other drugs in Australia
- A picture of overweight and obesity in Australia
- Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011

Visit Indigenous Australians for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019. National Aboriginal and Torres Strait Islander Health Survey, 2018–19. ABS cat. no. 4715.0. Canberra: ABS.

Indigenous Australians' use of health services

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/indigenous-australians-use-of-health-services

To evaluate whether the health system is meeting adequately the needs of Aboriginal and Torres Strait Islander people, it is important to understand the use of and access to quality care, including primary health care, and specialists and hospital services. This page presents an overview of Indigenous Australians' use of these health services, both Indigenous-specific and mainstream.

Indigenous Australians' use of health services is also affected by the cultural safety of health services. For more information see Culturally safe health care for Indigenous Australians.

Indigenous-specific primary health care services

The Australian Government and state and territory governments fund Indigenous-specific services. Indigenous-specific primary health care services offer prevention, diagnosis and treatment of ill health in a range of health settings. These services are available through community clinics, Aboriginal Community Controlled Health Services and other health care facilities. Indigenous-specific services are also offered in some public hospitals.

In 2017–18, 198 Indigenous-specific primary health care services reported to the AIHW's *Online services report*: a total of 3.6 million episodes of care were delivered to around 483,000 clients, 81% of whom were Indigenous. Of the Indigenous-specific primary health care services reporting to the *Online services report*:

- around 7 in 10 (71% or 140 organisations) were Aboriginal Community Controlled Health Services
- around 3 in 10 (29%) consisted of 48 government-run organisations (36 of these were Northern Territory Government-run clinics) and 10 other non-government-run organisations (AIHW 2019d).

See Primary health care.

Medicare services

In 2017–18, an estimated 9.5 million health and allied services claims were made by around 650,000 Indigenous patients through the Medicare Benefits Schedule (MBS). Of these claims, 4.2 million were non-referred general practitioner (GP) services (AIHW 2020 forthcoming).

In 2017–18, MBS claim rates for non-referred GP visits for Indigenous Australians were 15% higher than for non-Indigenous Australians (age-standardised rates of 6,912 and 5,986 per 1,000 respectively). However MBS claim rates for specialist services by Indigenous Australians were 44% lower (age-standardised rates of 598 and 1,070 per 1,000 respectively). This large difference may reflect difficulties in accessing specialist services for many Indigenous Australians.

There was little difference in the claim rates for Indigenous Australians compared with non-Indigenous Australians for other services such as pathology and allied health (Figure 1).

Figure 1: Age-standardised rate of claimed Medicare services, by selected types of service and Indigenous status, 2017–18
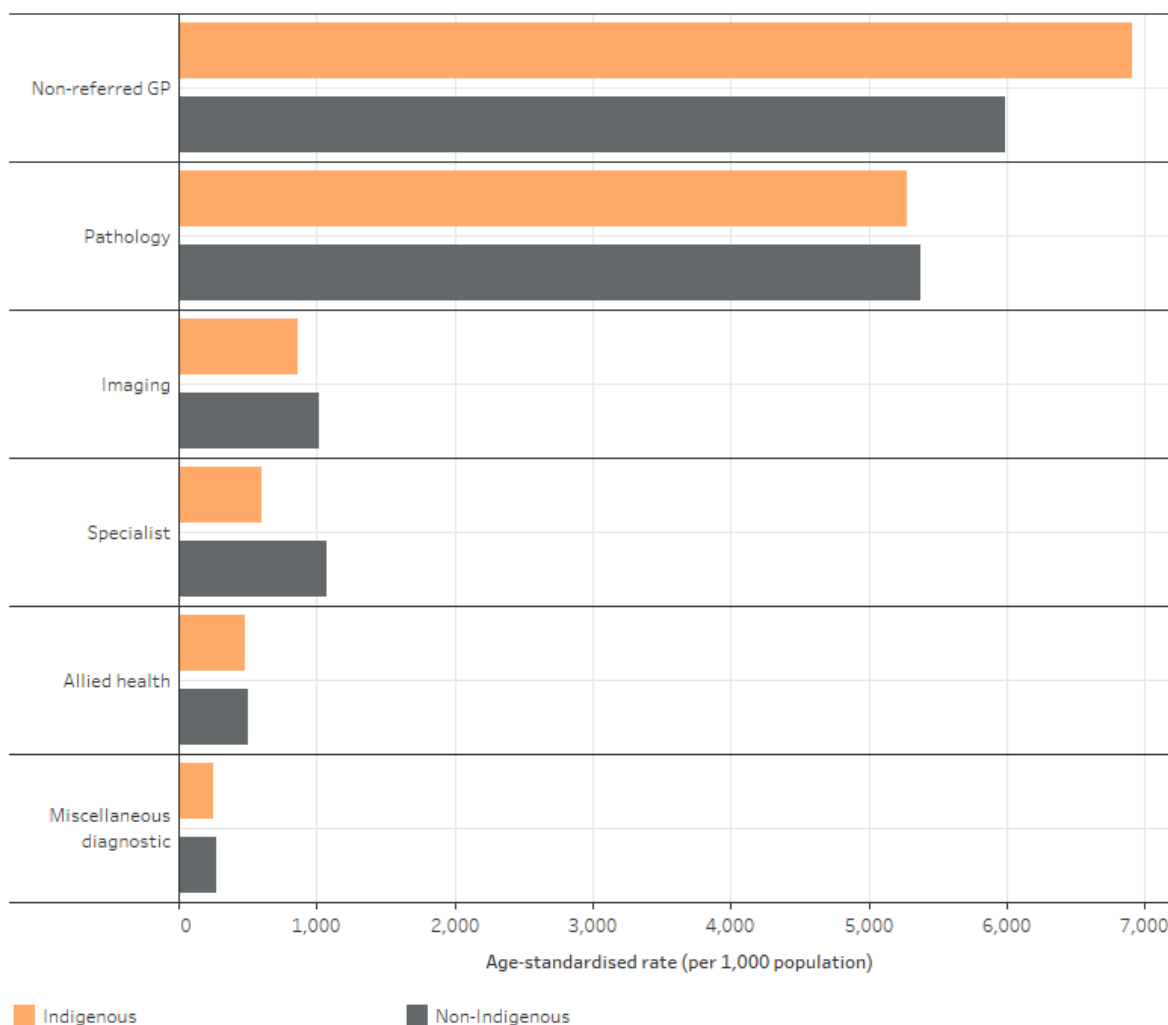
Source: AIHW 2020, forthcoming.
http://www.aihw.gov.au/

Aboriginal and Torres Strait Islander people can receive an Indigenous-specific health check or assessment from their GP through Medicare (MBS item 715), as well as referrals for Indigenous-specific follow-up services. In 2018–19 there were 249,000 Indigenous-specific health checks/assessments claimed through Medicare (AIHW 2020, forthcoming).

More detailed data on individuals available for 2017–18 show that around 29% (230,000 individuals) of the total Indigenous population claimed an Indigenous-specific health check/assessment. Around 59% of Indigenous Australians had at least 1 Indigenous-specific health check or assessment over the 5-year period to June 2018 (AIHW 2019c).

Since 2006–07, both the number of claims and the number of individuals claiming MBS item 715 have increased steadily from a base of around 23,000 total health checks or assessments. In particular the rate of Indigenous Australians undergoing MBS 715

health checks or assessments, as a proportion of the total Indigenous population, nearly tripled from 11% to 29% between 2010–11 and 2017–18 (AIHW 2019c).

The number and rate of MBS item 715 health checks or assessments among Indigenous Australians increased steadily from 2006–07 to 2017–18 across all age groups (Figure 2). The increase was highest among Indigenous Australians aged 55 and over, with a rate increase from 70 per 1,000 in 2006–07 to 396 per 1,000 in 2018–19.

Figure 2: Number and rate of MBS 715 (or equivalent) health checks/assessments for Indigenous Australians, by age, 2006–07 to 2018–19
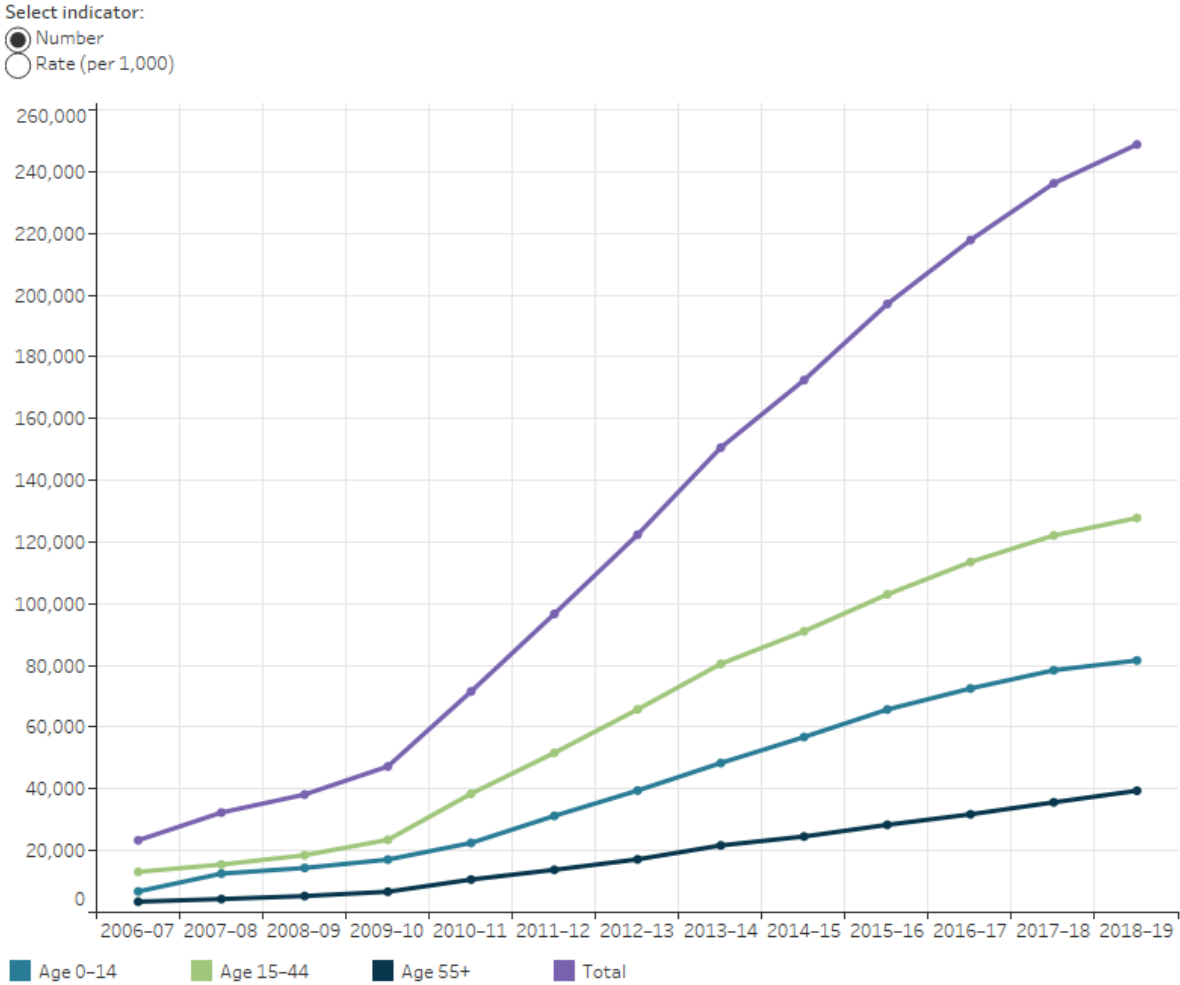
Note: As MBS item 715 commenced in May 2010, MBS item numbers 704, 706, 708 and 710 were reclassified as 715 for prior years.
Source: AIHW 2020 forthcoming.
http://www.aihw.gov.au/

Based on ABS survey data for 2018–19, an estimated 86% of Indigenous Australians reported having visited a GP or specialist in the previous 12 months—higher in *Non-remote* areas (87%) than in *Remote* areas (79%) (ABS 2019).

Preventative health services

Data on the use of various other health services by Indigenous Australians are available across administrative collections and ABS Indigenous-specific health surveys. Recent data on some additional service use measures show that:

- among Indigenous mothers who gave birth in 2017 (13,600 women), 63% attended at least 1 antenatal visit in the first trimester (an increase from 50% in 2012) (AIHW 2019a)

- 88% of Indigenous mothers who gave birth at 21 weeks or more attended at least 5 antenatal visits (AIHW 2019a)

- in December 2018, the proportion of Indigenous children who were fully vaccinated was slightly lower than for non-Indigenous children at ages 1 and 2 (92% compared with 94%, and 88% compared with 91%, respectively), while 97% of Indigenous children aged 5 were fully vaccinated, compared with 95% of other children of the same age (AIHW 2019e)

- in 2017−2018, 37% of Indigenous women aged 50−69 (age-standardised) participated in a BreastScreen program, compared with 54% of non-Indigenous women (AIHW 2020, forthcoming). The proportion of Indigenous women participating in this age group has increased from 25% in 1996−97 (AIHW 2019b).

- in 2018–19, 90% of Indigenous women aged 20–69 reported ever having a pap smear test; of whom 68% also reported having a pap smear regularly (AIHW 2020, forthcoming)

- in 2018–19, 23% of Indigenous men aged 50–74 and 20% of Indigenous women aged 50–74 had ever been tested for bowel cancer (AIHW 2020, forthcoming).

See Health of mothers and babies, Immunisation and vaccination and Cancer screening and treatment.

Hospitalisations

In the 2-year period July 2015–June 2017, the hospitalisation rate for Indigenous Australians was 2.3 times the rate for non-Indigenous Australians (based on age-standardised rates). A large part of this difference, however, was due to the substantially higher rate of hospitalisation for dialysis among Indigenous Australians (11 times higher than for non-Indigenous Australians, after age adjustments) (AIHW 2020, forthcoming).

The leading cause of hospitalisations between July 2015 and June 2017 for Indigenous Australians (excluding dialysis and pregnancy or childbirth) was *Injury, poisoning and certain other consequences of external causes*. Among all 5 leading causes of hospitalisations for Indigenous Australians (Figure 3), the age-standardised hospitalisation rate per 1,000 population was higher than the corresponding non-Indigenous rate in 4 causes, with the exception being for diseases of the digestive system.

Figure 3: Age-standardised rates of the leading causes of Indigenous hospitalisations, by Indigenous status, July 2015 to June 2017
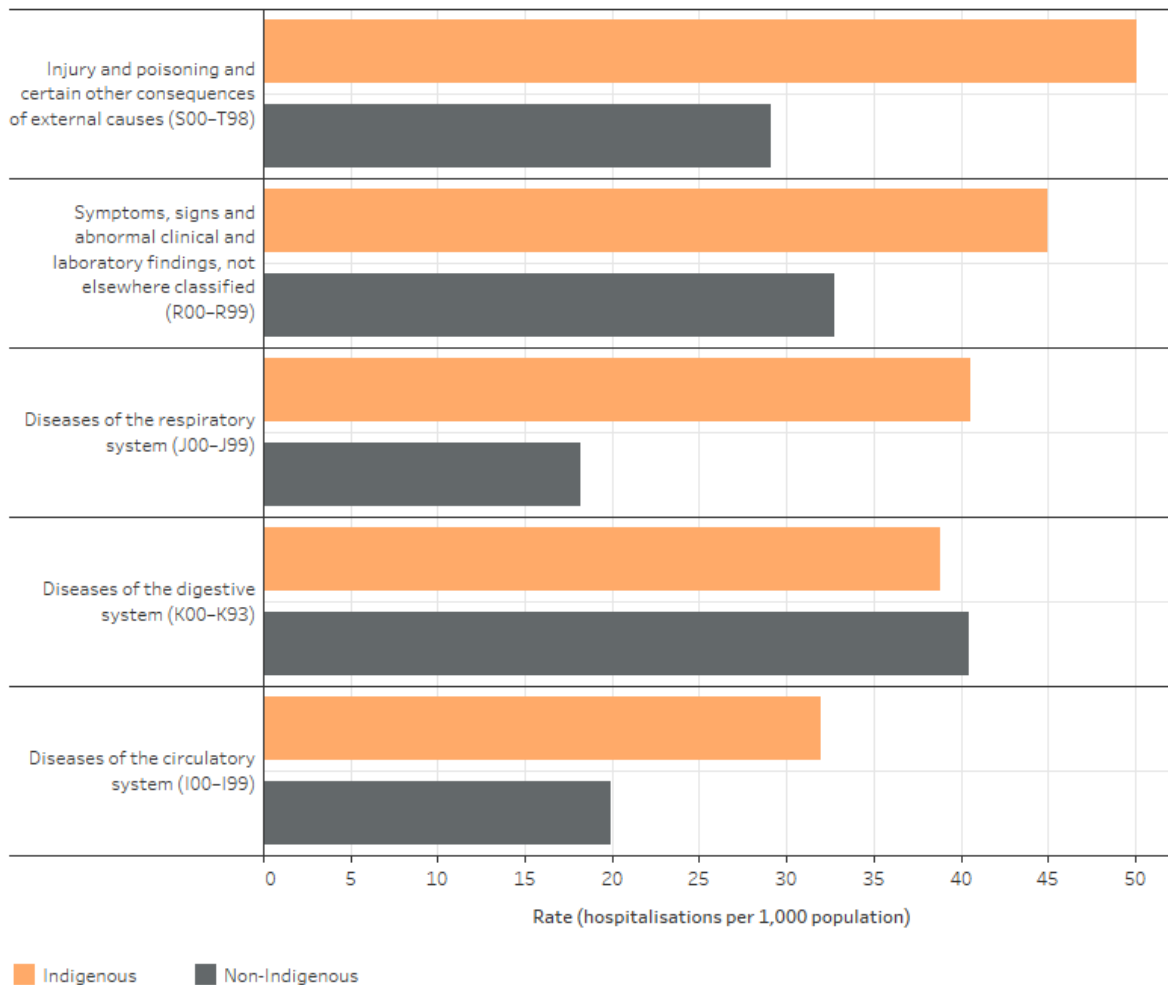
Note: Causes of hospitalisation based on ICD-10-AM codes, and exclude dialysis and pregnancy/childbirth.
Source: AIHW forthcoming 2020.
http://www.aihw.gov.au/

In 2017–18, Indigenous Australians accounted for 6.7% (or 535,000 episodes) of total public hospital emergency department presentations (AIHW 2018).

See Hospital care.

Where do I go for more information?

For more information on Indigenous Australians' use of health services, see:

- Aboriginal and Torres Strait Islander Health Performance Framework report 2017
- Indigenous health checks and follow-ups
- Aboriginal and Torres Strait Islander health organisations: Online services report—key results 2017–18
- Australia's mothers and babies 2017—in brief

- [Admitted patient care 2017–18](#)

Visit [Indigenous Australians](#) for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019. [National Aboriginal and Torres Strait Islander Health Survey, 2018–19](#). ABS cat. no. 4715.0. Canberra: ABS.

AIHW 2018. [Emergency department care 2017–18: Australian hospital statistics](#). Health services series no. 89. Cat. no. HSE 216. Canberra: AIHW.

AIHW 2019a. [Australia's mothers and babies 2017—in brief.](#) Perinatal statistics series no. 35. Cat. no. PER 100. Canberra: AIHW.

AIHW 2019b. [BreastScreen Australia monitoring report 2019](#). Cat. no. CAN 128. Canberra: AIHW.

AIHW 2019c. [Indigenous health checks and follow-ups](#). Cat. no. IHW 209. Canberra: AIHW.

AIHW 2019d. [Aboriginal and Torres Strait Islander health organisations: Online services report—key results 2017–18](#). Cat. no. IHW 212. Canberra: AIHW.

AIHW 2019e. [Tracking progress against the Implementation Plan goals for the Aboriginal and Torres Strait Islander Health Plan 2013–2023](#). Web report. Cat. no. IHW 201. Canberra: AIHW.

AIHW 2020, forthcoming. Aboriginal and Torres Strait Islander Health Performance Framework report 2020. Canberra: AIHW.

Indigenous health and wellbeing

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/indigenous-health-and-wellbeing

For Aboriginal and Torres Strait Islander people, good health is more than the absence of disease or illness; it is a holistic concept that includes physical, social, emotional, cultural and spiritual wellbeing, for both the individual and the community.

This page presents information drawn from the 2018–19 National Aboriginal and Torres Strait Islander Health Survey on self-assessed health, disability status and the prevalence of specific long-term health conditions, along with information from the Australian Burden of Disease Study.

See Indigenous life expectancy and deaths for more information on health outcomes and Profile of Indigenous Australians for more information on cultural connectedness.

Perceived health status

Self-assessed health status reflects a person's perception of their own health. It is a useful measure of a person's current health status and provides a broad picture of a population's overall health (ABS 2019). It is, however, dependent on an individual's awareness and expectations about their health (Delpierre et al. 2009). Further, compared to more objective measures of health, people's perceptions of their own health status may incorporate broader aspects of health, including cultural wellbeing and community functioning.

In 2018–19, among Indigenous Australians aged 15 and over, it was estimated that:

- 45% (238,600) rated their health as 'excellent' or 'very good', another 32% (168,900) rated their health as 'good' and 24% (128,200) rated their health as 'fair' or 'poor'. This health rating has improved since 2014–15 when 40% of Indigenous Australians rated their health as excellent or very good, 35% as good and 26% as fair or poor

- more males rated their health as 'excellent' or 'very good' than females (47% compared with 43%, respectively)

- across both *Remote* (*Remote* and *Very remote*) and *Non-remote* (*Major cities, Inner regional and Outer regional*) areas, 45% of Indigenous Australians rated their own health as 'excellent' or 'very good'

- those living in *Remote* areas were more likely to rate their health as 'good' than those living in *Non-remote* areas (36% and 30% respectively). Similarly, those living in *Remote* areas were less likely to rate their health as 'fair' or 'poor' than those living in *Non-remote* areas (20% and 25% respectively) (Figure 1) (ABS 2019).

Based on age-standardised rates, the rate of non-Indigenous Australians reporting 'excellent' or 'very good' health was 1.4 times the rate for Indigenous Australians (ABS 2019).

Figure 1: Self-assessed health status for Indigenous Australians aged 15 and over, by sex, state and remoteness area, 2018-19
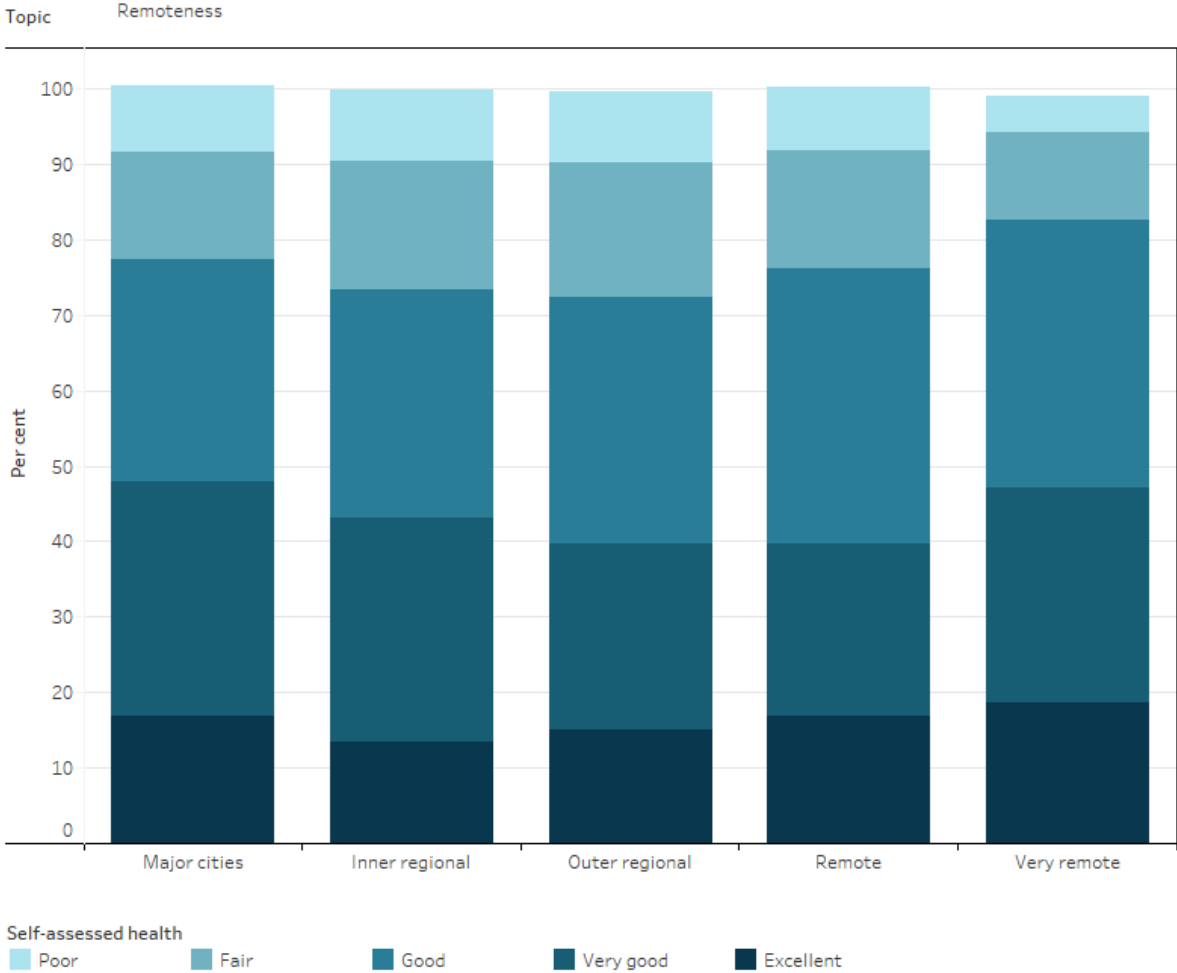
Note: Data in this figure have been randomly adjusted by the ABS to avoid the release of confidential data. Discrepancies may occur between some of the component items and totals.
Source: National Aboriginal and Torres Strait Islander Health Survey 2018-19.
http://www.aihw.gov.au/

Burden of disease

Burden of disease analysis is a measure of the impact of different diseases or injuries on a population. It combines the years of healthy life lost due to living with ill health (non-fatal burden) with the years of life lost due to dying prematurely (fatal burden). Fatal and non-fatal burden combined are referred to as total burden, reported as the disability-adjusted life years (DALYs) measure.

Indigenous Australians experienced a burden of disease that was 2.3 times the rate of non-Indigenous Australians. There were 284 years lost due to premature death or living

with illness per 1,000 Indigenous people in Australia, equivalent to 190,227 DALYs (AIHW 2016).

Chronic diseases caused 64% of the total disease burden among Indigenous Australians. These include cardiovascular diseases, mental and substance use disorders, cancer, chronic kidney disease, diabetes, vision and hearing loss and selected musculoskeletal, respiratory, neurological and congenital disorders (AIHW 2016).

Specifically, the leading causes of total disease burden experienced by Indigenous Australians were:

- mental and substance use disorders (19%)
- injuries (including suicide) (15%)
- cardiovascular diseases (12%)
- cancer (9.4%)
- respiratory diseases (7.9%) (AIHW 2016).

For more information see Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011.

Disability

A person has a disability if they have an impairment which restricts their everyday activities and has lasted, or is expected to last, for at least six months. (ABS 2019).

Indigenous Australians are at greater risk of disability due to higher prevalence of low birthweight, chronic disease, infectious diseases, injury and substance use (AIHW 2018).

In 2018−19, among the total Indigenous Australian population, an estimated 38% (306,100) had some form of disability that restricted their everyday activities, with 27% (220,300) reporting a core activity limitation or schooling/employment restriction and a further 11% (85,700) reporting an impairment with no specific limitation or restriction. Those living in *Remote* areas were less likely than those living in *Non-remote* areas to report a core activity limitation or schooling/employment restriction (21% and 28% respectively), however this may be influenced by under-reporting or lack of access to services in *Remote* areas (Figure 2) (ABS 2019).

Based on age-standardised rates, Indigenous Australians reported a disability or restrictive long-term health condition in 2018−19 at 1.8 times the rate for non-Indigenous Australians (ABS 2019).

For more information about disability among Aboriginal and Torres Strait Islander Australians, and their use of specialist disability support services, see Disability support for Indigenous Australians.

Figure 2: Disability status for Indigenous Australians, by sex and remoteness, 2018–19
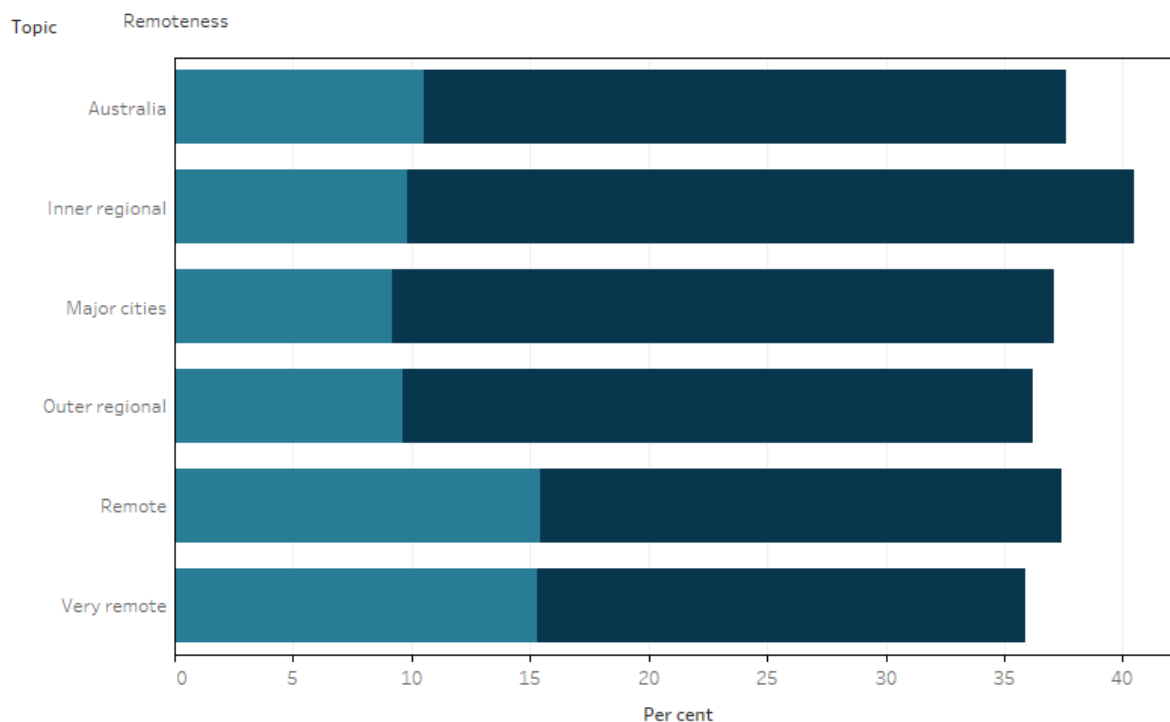
Level of limitation or restriction

■ Impairment with no specific limitation or restriction ■ Core activity limitation or schooling/employment r..

Notes
1. Data in this figure have been randomly adjusted by the ABS to avoid the release of confidential data. Discrepancies may occur between some of the component items and totals.
2. For the purpose of this chart, a disability refers to an impairment which restricts a person's everyday activities and has lasted, or is expected to last, for at least six months. A person has a specific limitation with a core activity if they need help from another person, have difficulty or use an aid or other equipment to perform at least one selected task. A person has a schooling restriction if, because of their disability, they are not attending school/undertaking further study, need time off school or study, attend special classes or a special school. have other related difficulties. A person has an employment restriction if, because of their disability, they are restricted in the type of job they could do, are restricted in the number of hours they can work, have difficulty finding suitable work, need time off work are permanently unable to work.
Source: National Aboriginal and Torres Strait Islander Health Survey 2018-19.
http://www.aihw.gov.au/

Long-term health conditions

Long-term health conditions and the social and economic consequences of these conditions may affect people's quality of life and could contribute to premature mortality and morbidity.

In 2018–19, among Indigenous Australians it was estimated that:

- 67% (545,200) reported at least 1 current long-term health condition
- 38% (307,300) reported eye or sight problems
- 24% (187,500) reported a mental health or behavioural condition (Figure 3) (ABS 2019).

Indigenous Australians in *Remote* areas were less likely to report 1 or more current long-term health condition than those in *Non-remote* areas (56% compared with 70%), although this difference may be due to under-reporting or lack of access to services in these areas (ABS 2019).

The age-standardised proportion of people reporting 1 or more long-term health condition was similar for Indigenous and non-Indigenous Australians (ABS 2019).

Figure 3: Selected long-term health conditions for Indigenous Australians, by remoteness and sex, 2018–19
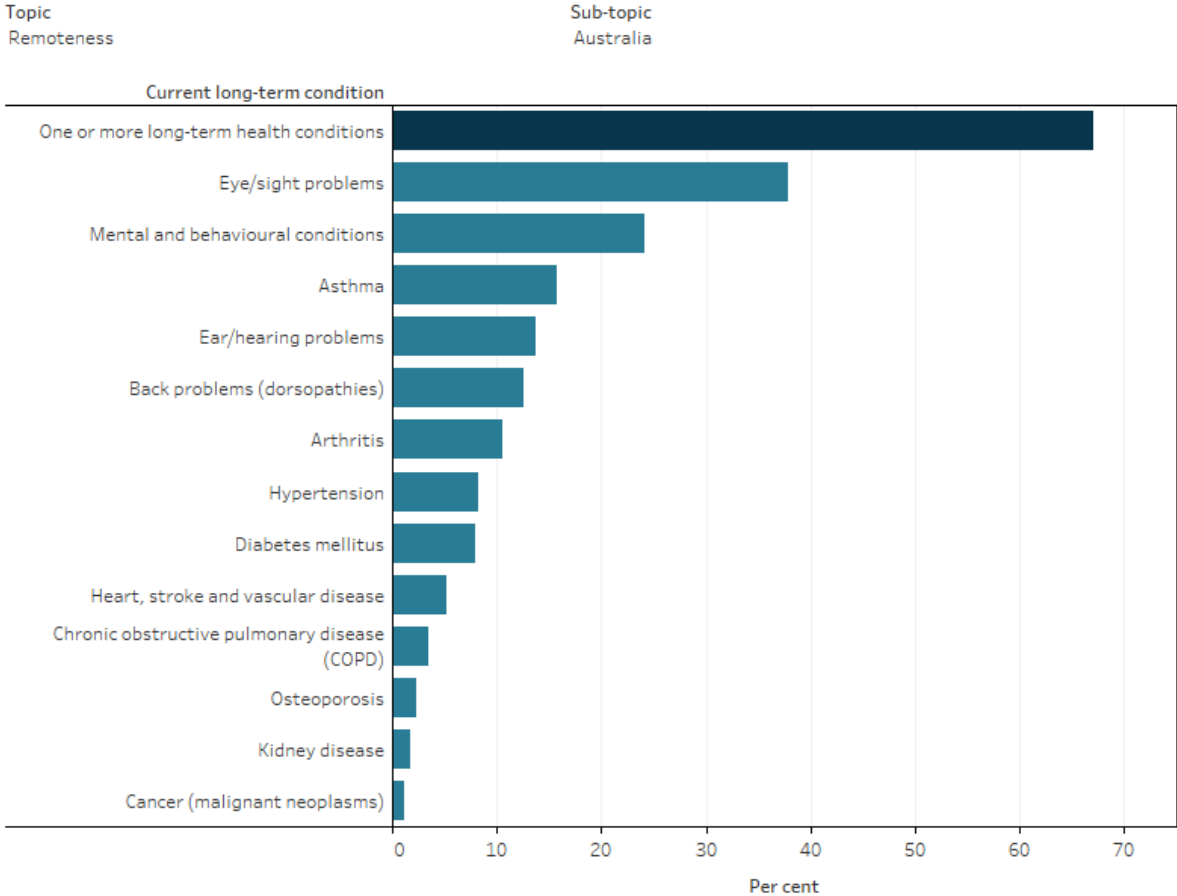
Topic
Remoteness

Sub-topic
Australia

Notes
1. Data in this figure have been randomly adjusted by the ABS to avoid the release of confidential data. Discrepancies may occur between some of the component items and totals.
2. Mental and behavioural conditions category includes depression, anxiety, alcohol and drug problems, behavioural or emotional problems and other mental health conditions.
Source: National Aboriginal and Torres Strait Islander Health Survey 2018-19.
http://www.aihw.gov.au/

Social and emotional wellbeing

Social and emotional wellbeing is a holistic concept that includes mental health and illness but also encompasses the importance of connection to land, culture, spirituality and ancestry, and how these affect the wellbeing of the individual and the community (Gee et al. 2014).

This page focuses on available information relating to diagnosed mental health and behavioural conditions along with information on self-reported psychological distress. Broader measures around culture and connection to land are presented in the Profile of Indigenous Australians.

Mental health conditions include a wide range of disorders varying in severity. Self-reported data is from an ABS survey, in which respondents were asked if they had been diagnosed with a long-term mental health (for example depression and anxiety) and behavioural condition (for example alcohol and drug problems, attention deficit hyperactivity disorder, conduct disorders and schizophrenia).

In 2018–19, among the total Indigenous Australian population:

- an estimated 24% (187,500) reported a mental health or behavioural condition, with a higher rate among females than males (25% compared with 23%, respectively)
- anxiety was the most commonly reported mental health condition (17%), followed by depression (13%) (ABS 2019) (Figure 4).

Figure 4: Self-reported mental health or behavioural conditions among Indigenous Australians, by age and sex, 2018–19
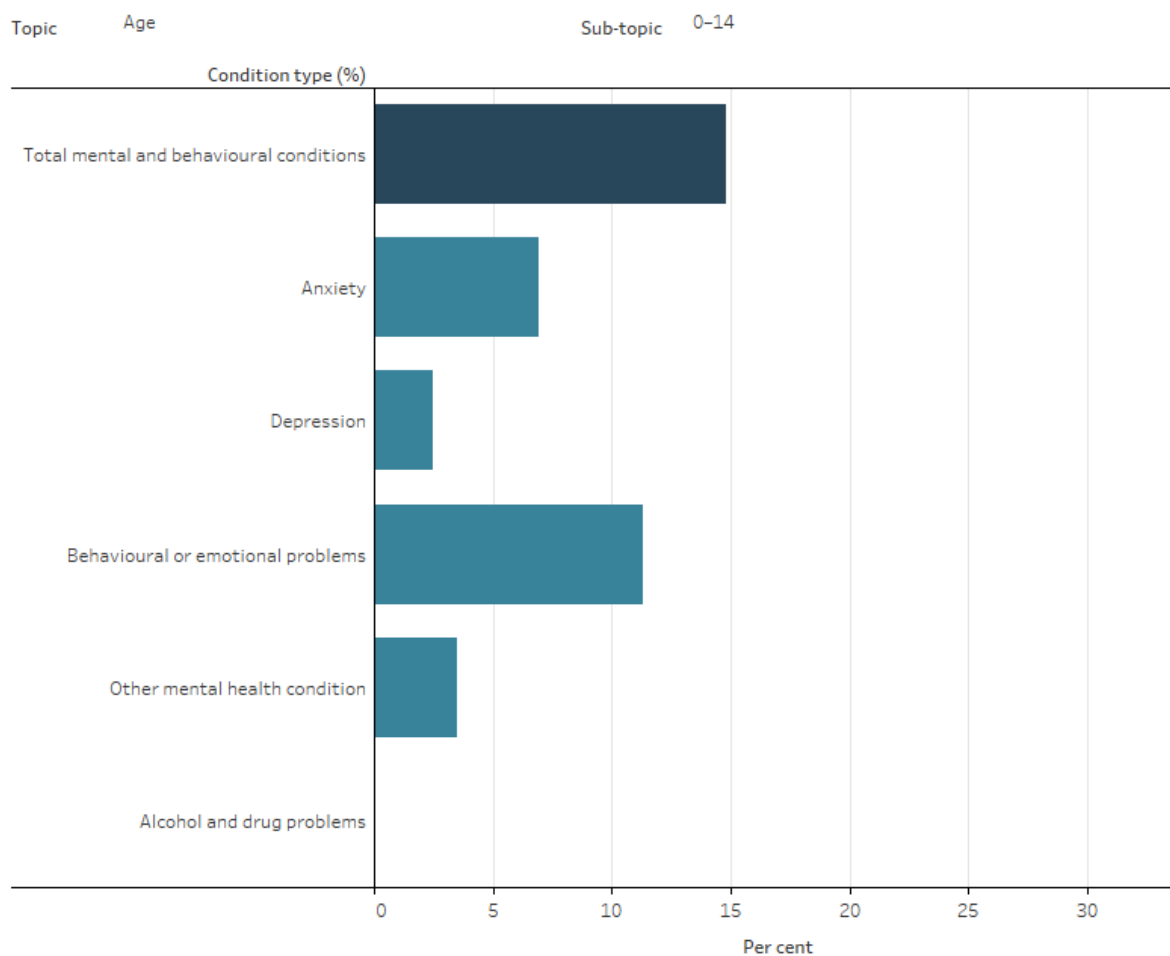
Topic   Age   Sub-topic   0–14

Note: Data in this figure have been randomly adjusted by the ABS to avoid the release of confidential data. Discrepancies may occur between some of the component items and totals.
Source: National Aboriginal and Torres Strait Islander Health Survey 2018-19.
http://www.aihw.gov.au/

Data on self-assessed psychological distress among Indigenous Australians are also available (Figure 5).

In 2018–19, among Indigenous Australian adults, an estimated:

- 66% reported 'low or moderate' levels of psychological distress, while 31% reported 'high or very high' levels

- 32% of those living in *Non-remote* areas reported 'high or very high' levels of psychological distress, compared with 27% of those living in *Remote* areas (ABS 2019).

The rate of Indigenous Australians reporting 'high or very high' levels of psychological distress was 2.3 times the rate for non-Indigenous Australians, based on age-standardised rates (ABS 2019).

Figure 5: Low/moderate levels of psychological distress among Indigenous Australian adults, by sex and remoteness, 2018–19
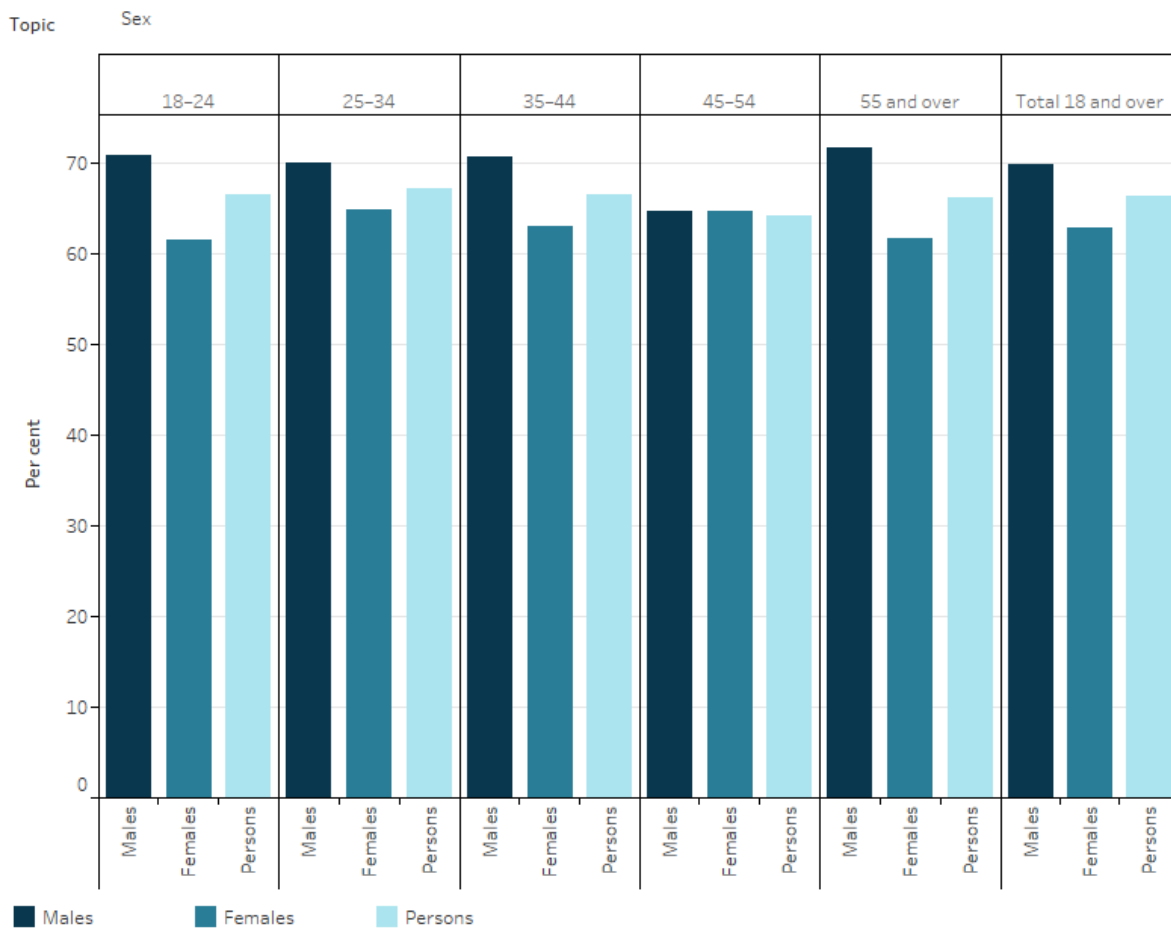
Notes
1. Data in this figure have been randomly adjusted by the ABS to avoid the release of confidential data. Discrepancies may occur between some of the component items and totals.
2. Based on scores from the modified Kessler Psychological Distress Scale (K5).
Source: National Aboriginal and Torres Strait Islander Health Survey 2018-19.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on Indigenous health and wellbeing, see:

- Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011
- Aboriginal and Torres Strait Islander Health Performance Framework 2017

Visit Indigenous Australians for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019. National Aboriginal and Torres Strait Islander Health Survey, 2018–19. ABS cat. no. 4715.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2018. Aboriginal and Torres Strait Islander Health Performance Framework (HPF) report 2017. Cat. no. IHW 194. Canberra: AIHW. Viewed 06 May 2020, https://www.aihw.gov.au/reports/indigenous-australians/health-performance-framework/contents/overview

AIHW 2016. Australian Burden of Disease Study: impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011. Australian Burden of Disease Study series no. 6. Cat. no. BOD 7. Canberra: AIHW.

Gee G, Dudgeon P, Schultz C, Hart A & Kelly K 2014. Social and emotional wellbeing and mental health: an Aboriginal perspective. In: Dudgeon P, Milroy H, & Walker R (eds). Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice. 2nd edn. Chapter 4, Canberra: Australian Government Department of the Prime Minister and Cabinet, 55−68.

Delpierre C, Lauwers-Cances V, Datta G, Lang T & Berkman L 2009. Using self-rated health for analysing social inequalities in health: a risk for underestimating the gap between socioeconomic groups? Journal of Epidemiology and Community Health 63:426−32.

Indigenous hearing health

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/indigenous-hearing-health

Ear and hearing health is important to overall health and quality of life. Poor ear health and hearing loss can have long-lasting impacts on education, wellbeing and employment. Aboriginal and Torres Strait Islander children experience some of the highest rates of ear disease and associated hearing loss in the world (WHO 2004).

While ear disease is a common childhood illness, often accompanying a cold or flu, Indigenous children are more likely than non-Indigenous children to develop ear disease at a younger age, and experience greater frequency and severity of infections (Jervis-Bardey et al. 2014). Otitis media—inflammation and/or infection of the middle ear—is the main condition contributing towards hearing loss in Indigenous children (Burns & Thomson 2013).

Ear disease and associated hearing loss are largely preventable. Poor ear and hearing health is associated with household overcrowding, hygiene practices, second-hand smoke exposure, a poor diet and lack of access to medical services (Burns & Thomson 2013; Kong & Coates 2009). Experiencing hearing loss in childhood can affect speech and language development, and may lead to behavioural problems, early school leaving, limited employment options and increased contact with the criminal justice system (Burns & Thomson 2013). See 'Housing conditions and key challenges in Indigenous health' in Australia's health 2020: data insights.

Ear and hearing problems among Indigenous Australians

Self-reported ear and hearing problems

In 2018–19, based on self-reported data from the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS), an estimated 14% (111,700) of Indigenous Australians had a long-term ear/hearing problem. The proportion was the same for men and women (14%), and similar for *Remote* (13%) and *Non-remote* (14%) areas (ABS 2019b) (Figure 1).

Ear and hearing problems increased with age. Indigenous Australians aged over 55 had the highest proportion of ear/hearing problems (34%), with deafness accounting for the majority of problems (30%). Children aged 0–14 were more likely to have otitis media than older age groups (2.6% compared with 0.2%–1.0%, respectively) (ABS 2019b).

Figure 1: Indigenous Australians with a self-reported long-term ear/hearing problem, by age, sex and remoteness, 2018–19

Select indicator:
- ◉ By age group
- ○ By remoteness
- ○ By sex
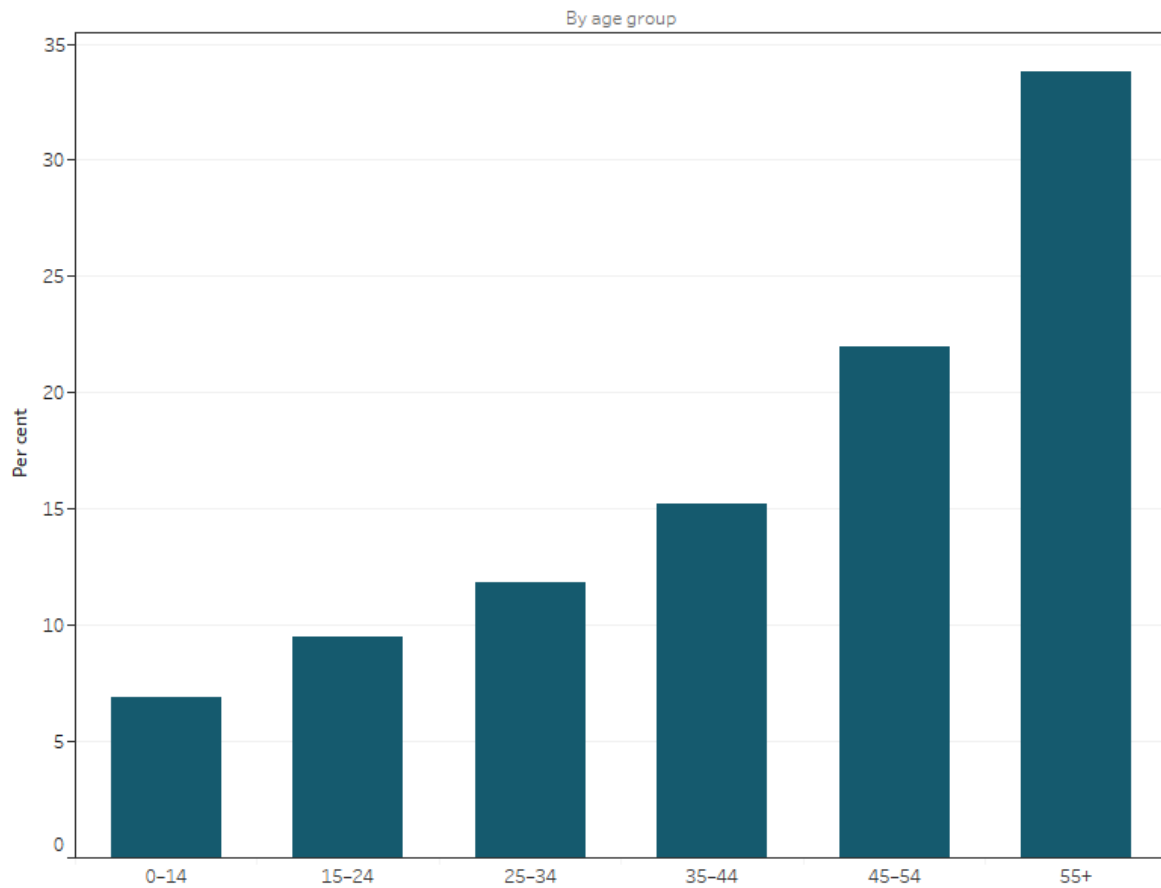
Source: ABS 2019a.
http://www.aihw.gov.au/

The proportion of Indigenous Australians with a self-reported long-term ear/hearing problem was similar between 2001 and 2018–19 (Table 1). However, for Indigenous children aged 0–14, the proportion with an ear/hearing problem decreased from 11.2% to 6.9% over the same period (ABS 2019b, AIHW 2018).

Table 1: Indigenous Australians with a self-reported long-term ear/hearing problem, 2001 to 2018–19

Year	Total (per cent)	Total children aged 0–14 (per cent)
2001	14.6	11.2
2004–05	12.2	9.5

Year	Total (per cent)	Total children aged 0–14 (per cent)
2012–13	12.3	7.1
2018–19	13.7	6.9

Sources: ABS 2019b; AIHW 2018.

Indigenous Australians were more likely than non-Indigenous Australians to have ear/hearing problems

Based on age-standardised proportions, compared with non-Indigenous Australians, Indigenous Australians were:

- 1.4 times as likely to have a long-term ear/hearing problem
- 3 times as likely to have otitis media (ABS 2019a).

Among children aged 0–14, Indigenous Australians were:

- twice as likely to have a long-term ear/hearing problem
- 3 times as likely to have otitis media (ABS 2019a, 2019b).

The proportions of Indigenous and non-Indigenous children with self-reported long-term ear/hearing problems decreased between 2001 and 2017–19 (ABS 2019a, 2019b; AIHW 2018).

Measured hearing loss

For the first time, the 2018–19 NATSIHS included a hearing test, which aims to provide a national picture on hearing loss in Indigenous Australians.

In 2018–19, an estimated 43% (290,400) of Indigenous Australians aged 7 and over were found to have hearing loss in one or both ears during the NATSIHS hearing test. The proportion was similar between men (43%) and women (42%), and increased with age (from 29% for 7–14 years to 82% for 55 years and over) (ABS 2019b).

The proportion of Indigenous Australians with measured hearing loss was higher in *Remote* (59%) than *Non-remote* (39%) areas. It also varied across states and territories, from 33% in Victoria to 60% in the Northern Territory (ABS 2019b) (Figure 2).

The proportion of Indigenous Australians with measured hearing loss (43%) was higher than self-reported hearing loss (12%) among those aged 7 and over (Figure 2).

Figure 2: Indigenous Australians aged 7 and over with measured and self-reported long-term hearing loss, by age group, sex, remoteness and state/territory, 2018–19

Select indicator:
- By age group
- By remoteness
- By sex
- By state/territory
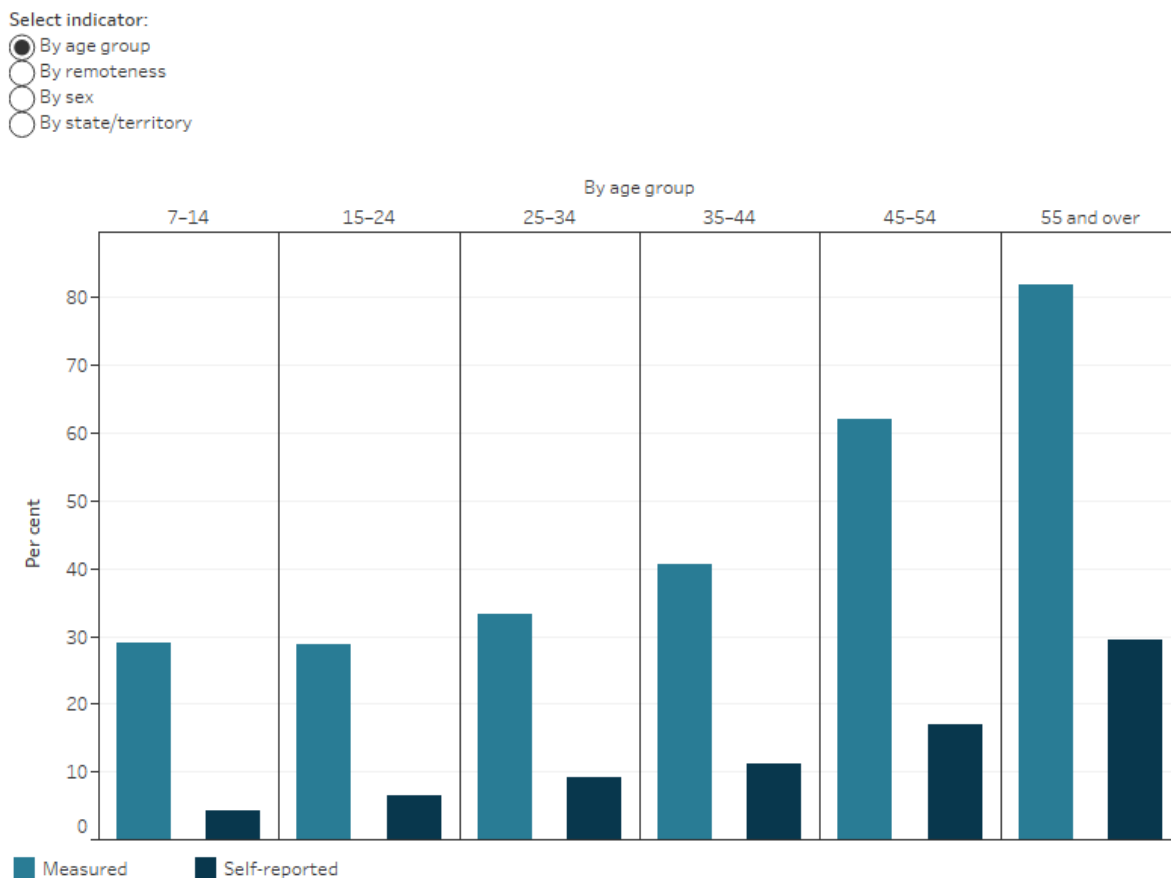
*Estimate has a high margin of error and should be used with caution.

Notes

1. Self-reported hearing loss: self-reported hearing problems that have lasted, or are expected to last, for six months or more.
2. Measured hearing loss: hearing loss in one or both ears based on results of voluntary, self-administered hearing test undertaken by respondents without a cochlear implant at the time of interview.

Source: ABS 2019a.

http://www.aihw.gov.au/

The majority (79%) of Indigenous Australians who had measured hearing loss did not self-report a long-term hearing problem. This could be due to several factors including undiagnosed hearing loss, short-term hearing loss due to a temporary cause such as a cold, or limitations with the hearing test (ABS 2019b).

The proportion of Indigenous Australians with measured hearing loss who did not self-report hearing loss generally decreased with increasing age (from 92% for 7–14 years to 67% for 55 years and over), and was higher in *Remote* (84%) than *Non-remote* (77%) areas (ABS 2019b) (Figure 3).

Figure 3: Indigenous Australians aged 7 and over with measured hearing loss who did not self-report long-term hearing loss, by age, sex, remoteness and state/territory, 2018–19

Select indicator:
- ● By age group
- ○ By remoteness
- ○ By sex
- ○ By state/territory

By age group
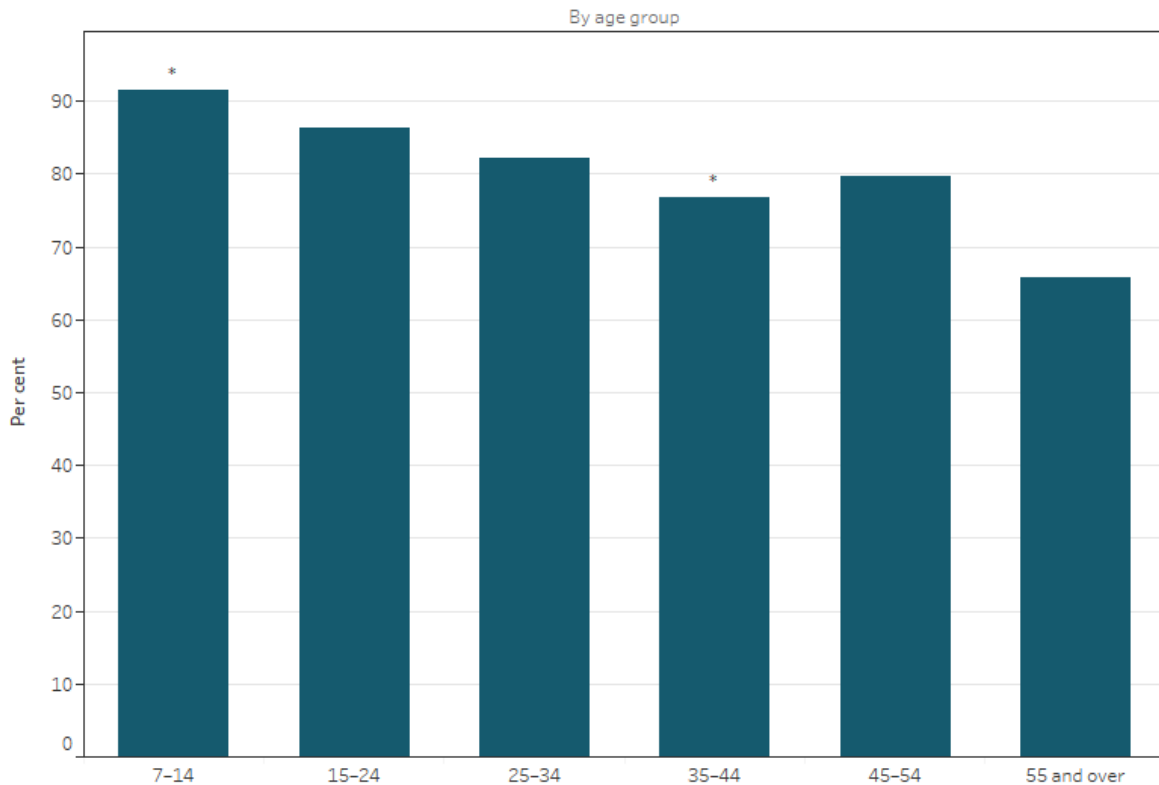
*Estimate has a high margin of error and should be used with caution.
Source: ABS 2019a.
http://www.aihw.gov.au/

Treatment and management

Hospitalisations

Hospitalisations for diseases of the middle ear and mastoid process reflect use of health services, rather than the prevalence of these conditions in the community.

Between July 2015 and June 2017, there were 4,522 hospitalisations for Indigenous children aged 0–14 for diseases of the middle ear and mastoid process. The age-standardised hospitalisation rate for Indigenous children was higher than for non-Indigenous children (8.1 compared with 6.7 per 1,000, respectively) (AIHW forthcoming 2020).

For Indigenous children, the rate increased after 2007–08 and may reflect improved diagnosis and use of ear health services. The rate for non-Indigenous children has remained relatively stable since 2004–05 (Figure 4) (AIHW forthcoming 2020).

Figure 4: Rate of hospitalisations of children aged 0–14 for diseases of the middle ear and mastoid process, by Indigenous status, 2004–05 to 2016–17

Source: AIHW forthcoming 2020.
http://www.aihw.gov.au/

Assistive hearing devices

Hearing Australia provides government-funded audiology services and hearing aids to Australian children and young people aged under 26 with permanent or long-term hearing loss. Since June 2019, Hearing Australia's Hearing Assessment Program—Early Ears has also provided early identification and intervention services to Indigenous children aged 0–5 in rural areas.

In 2018, of the 25,381 children and young people who were fitted with a hearing aid or cochlear implant through Hearing Australia, 1 in 11 (9%) were Indigenous. In the Northern Territory, Indigenous children accounted for the majority (81%) of children

newly fitted with an assistive hearing device. Non-Indigenous children are more likely to receive an assistive hearing device at a younger age compared with Indigenous children, although with targeted early diagnosis and intervention, the gap has started to decrease in recent years (Hearing Australia 2019).

Hearing health programs

A range of Australian and state government programs aimed at decreasing the prevalence of ear disease and hearing loss have been implemented over time. A variety of programs exists focusing on promotion, prevention and early treatment of ear disease and hearing loss, such as the Australian Government's Care for Kids' Ears campaign, neonatal hearing screening programs and outreach programs such as the Northern Territory Remote Aboriginal Investment (NTRAI) Hearing Health Program (AIHW 2014).

Hearing health services in the Northern Territory

For the past decade the Australian Government has funded the Northern Territory Government to provide hearing health services to Indigenous children and young people aged under 21 in the Northern Territory. In 2018, 1,817 children and young people received at least 1 service through the NTRAI Hearing Health Program Among these:

- 3 in 5 (61%) were diagnosed with at least 1 ear condition. Among these children, the majority (68%) also experienced hearing loss

- younger children were more likely to have an ear condition, with 73% of children aged 0–2 and 61% of those aged 3–5 having at least 1 ear condition (AIHW 2019).

Nearly half (47%) of children who received an audiology service in 2018 had hearing loss. The most common type of hearing loss was conductive (28%), which is associated with chronic ear disease (AIHW 2019).

Children who received hearing health services through the NTRAI Hearing Health Program have had improvements in ear health and a reduction in hearing loss over time. Between 2012 and 2018:

- the percentage of children and young people with at least 1 ear disease decreased from 66% to 61%

- the percentage of children and young people with hearing loss decreased from 55% to 47%.

Children who received multiple services over time had a larger reduction in ear disease. For children and young people who received at least 2 services between July 2012 and December 2018, the proportion with at least 1 ear condition decreased by 22 percentage points between the first and last service (from 76% to 54%) (AIHW 2019).

Where do I go for more information?

For more information on Indigenous hearing health, see:

- [Australia's health 2018](#) 'Chapter 6.4 Ear health and hearing loss among Indigenous children'
- [Hearing health outreach services for Aboriginal and Torres Strait Islander children in the Northern Territory: July 2012 to December 2018](#)
- National Indigenous Australians Agency [Aboriginal and Torres Strait Islander Health Performance Framework 2017 report: 1.15 Ear Health](#)

Visit [Indigenous Australians](#) for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019a. Microdata: National Health Survey, 2017–18. ABS cat. no. 4324.055.00. Findings based on Detailed Microdata analysis. Canberra: ABS.

ABS 2019b. [National Aboriginal and Torres Strait Islander Health Survey, 2018–19](#). ABS cat. no. 4715.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2014. [Ear disease in Aboriginal and Torres Strait Islander children. Resource sheet no. 35 produced by the Closing the Gap Clearinghouse](#). Canberra: AIHW.

AIHW 2018. [Australia's health 2018](#). Cat. no. AUS 221. Canberra: AIHW.

AIHW 2019. [Hearing health outreach services for Aboriginal and Torres Strait Islander children in the Northern Territory: July 2012 to December 2018.](#) Cat. no. IHW 213. Canberra: AIHW.

AIHW forthcoming 2020. Aboriginal and Torres Strait Islander Health Performance Framework (HPF) report 2020. Canberra: AIHW.

Burns J & Thomson N 2013. Review of ear health and hearing among Indigenous Australians. Australian Indigenous Health Bulletin 13(4):1–22.

Hearing Australia 2019. [Aided child demographics 2019](#). Sydney: Hearing Australia.

Jervis-Bardy J, Sanchez L & Carney A 2014. Otitis media in Indigenous Australian children: review of epidemiology and risk factors. The Journal of Laryngology & Otology S16–S27. doi:10.1017/S0022215113003083.

Kong K & Coates H 2009. Natural history, definitions, risk factors and burden of otitis media. Medical Journal of Australia 91(9):S39 doi:10.5694/j.1326-5377.2009.tb02925.x.

WHO (World Health Organization) 2004. [Chronic suppurative otitis media: burden of illness and management options](#). Geneva: WHO.

Indigenous life expectancy and deaths

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/indigenous-life-expectancy-and-deaths

Life expectancy and deaths are widely used as indicators of population health. Although Australia's national life expectancy is high compared with that of other countries, there are significant disparities between Aboriginal and Torres Strait Islander Australians and non-Indigenous Australians.

Deaths data by Indigenous status are reported for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory, as these jurisdictions have sufficient levels of Indigenous identification and numbers of deaths to support analysis.

Life expectancy

Life expectancy is a summary measure of how long a person can expect to live and is not a measure of the quality of life.

In 2015–2017, life expectancy at birth for Indigenous Australians was estimated to be 71.6 years for males and 75.6 years for females. In comparison, over the same period life expectancy at birth for non-Indigenous Australians was 80.2 years for males and 83.4 years for females (Figure 1) (AIHW 2019).

Closing the gap in life expectancy between Indigenous and non-Indigenous Australians within a generation (by 2031) is one of the original Closing the Gap targets set by the Council of Australian Governments in 2008. Based on the most recent data, progress on the target is not on track to be met (PM&C 2019).

Figure 1: Life expectancy, by Indigenous status and sex, 2015–2017
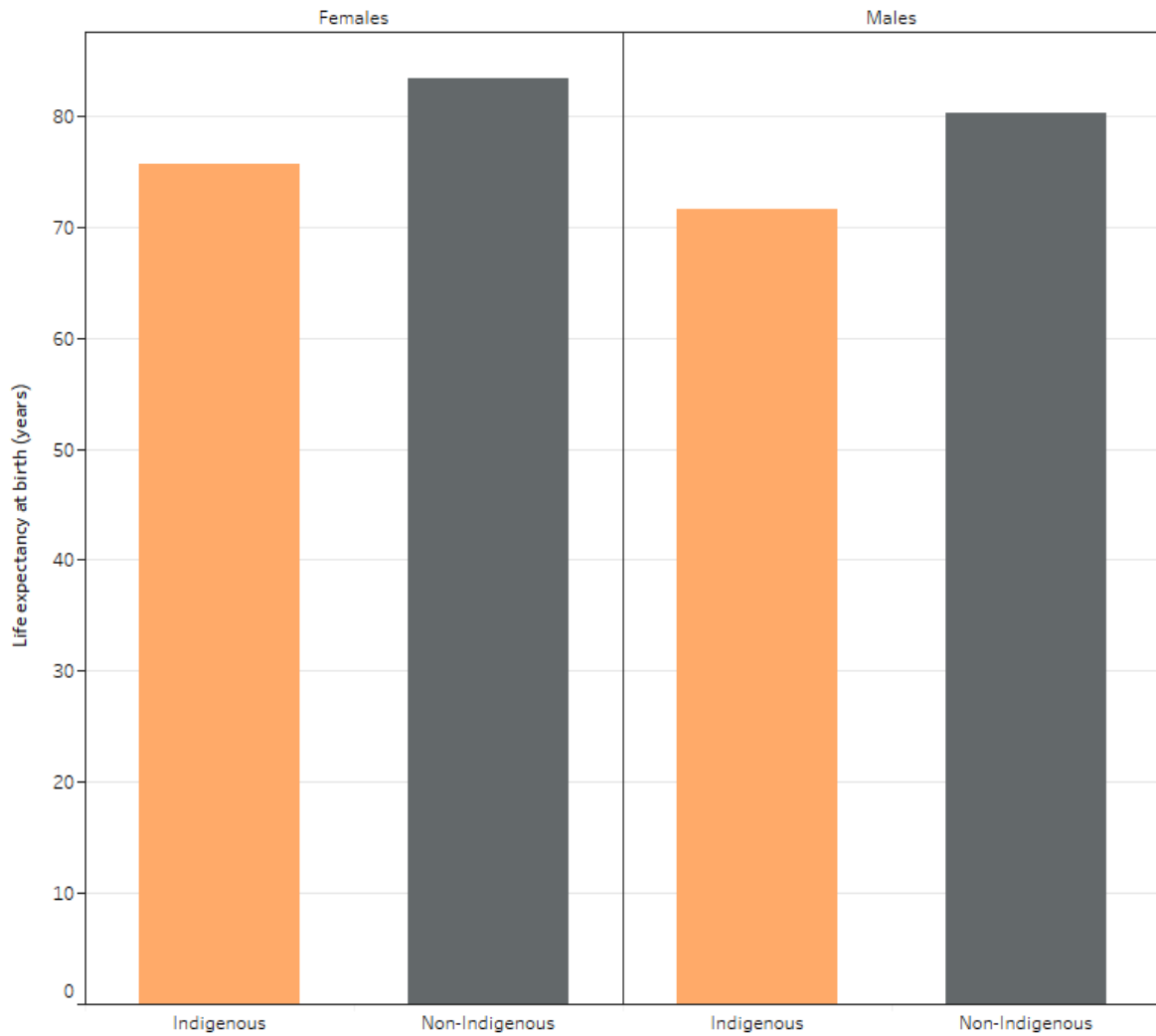
Remoteness areas

In 2015–2017, life expectancy at birth among Indigenous Australians decreased with increased remoteness, among both males and females (Table 1).

Table 1: Indigenous life expectancy by remoteness, 2015–2017

	Males	Females
Major cities	72.1	76.5
Inner and Outer regional	70.0	74.8
Remote and Very remote	65.9	69.6

Socioeconomic areas

Life expectancy at birth among Indigenous Australians also varied according to the socioeconomic level of the area in which people lived, with those living in the most disadvantaged areas having lower life expectancy.

Table 2 presents life expectancy by the ABS's Socio-Economic Indexes for Areas (SEIFA) based on the Index of Relative Socio-Economic Disadvantage (IRSD).

Males and females living in the most disadvantaged areas had a life expectancy which was 4.2 and 3.8 years lower than those living in the least disadvantaged areas respectively.

Table 2: Indigenous life expectancy distribution by SEIFA level of disadvantage, 2015–2017

Quintile	Males	Females
1 (most disadvantaged)	68.2	72.8
2	70.3	75.5
3	69.9	74.3
4 and 5 combined (least disadvantaged)	72.4	76.6

Note: Socioeconomic areas based on Index of Relative Socio-Economic Disadvantage.

Deaths

In 2018, after accounting for differences in age structures in the populations, the overall death rate for Indigenous Australians was almost twice the rate for non-Indigenous Australians.

Age-specific death rate

In 2018, there were 3,218 deaths among Indigenous Australians. The median age at death for Indigenous Australians was 60, compared with 82 for non-Indigenous Australians. This result partly reflects the fact that Australia's Indigenous population is considerably younger than the non-Indigenous population. See Profile of Indigenous Australians.

Death rates differ by age group among both Indigenous and non-Indigenous Australians (Figure 2).

Figure 2: Age-specific death rates, by Indigenous status, 2018

Select measure:
- ◉ Rate per 100,000
- ○ Number of deaths
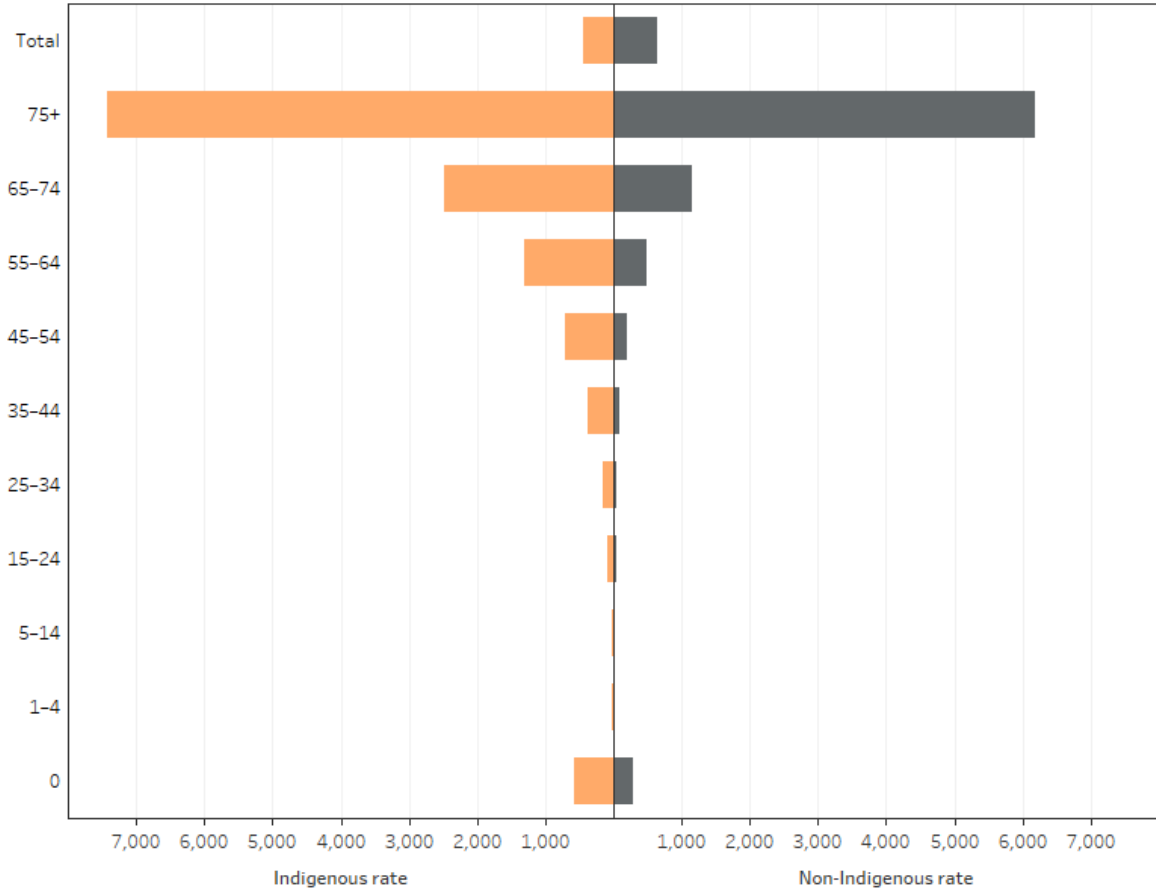
Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined.
Source: AIHW analysis of ABS 2019b.
http://www.aihw.gov.au/

From 2008 to 2018, the Indigenous death rate fell across all age groups, except those aged 75 and over. However, the Indigenous death rate was higher than the non-Indigenous in each age group (Figure 3).

Figure 3: Age-specific death rate, by Indigenous status, 2008 to 2018

Select age group:
<1 year
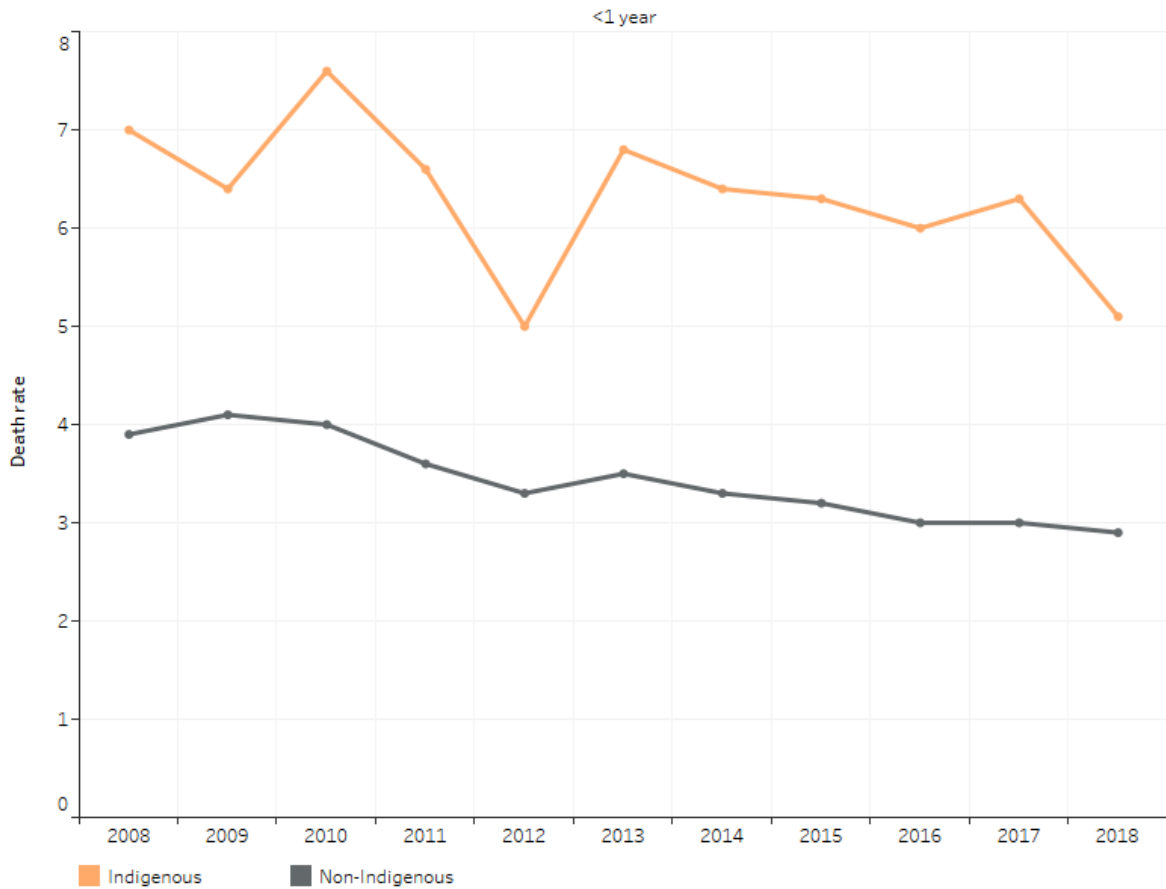
Notes
1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined.
2. <1 year death rate is per 1,000 live births, while all other age catergories are per 100,000 population.
Source: AIHW analysis of ABS 2019b.
http://www.aihw.gov.au/

The death rate for children under 5 is a key indicator of the general health and wellbeing of a population.

In 2018 in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, the majority (85%) of child deaths occurred among infants:

- There were 117 deaths among Indigenous children aged under 5—a death rate of 140.8 per 100,000 population (ABS 2019b).

- Of these, 99 deaths (85%) were among Indigenous infants (<1)—a death rate of 5.1 per 1,000 live births (ABS 2019b) (Figure 4).

Figure 4: Indigenous child deaths (under 5 years of age), by age at death, 2018
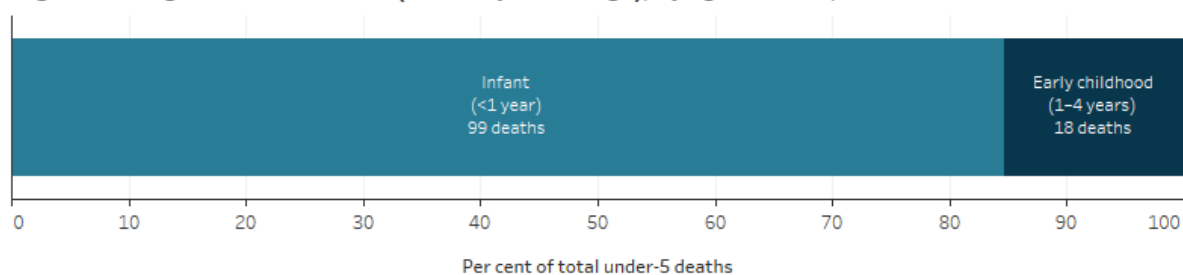
Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined.
*Source:* ABS 2019b.
http://www.aihw.gov.au/

Causes of death

Where do I go for more information?

For more information on Indigenous life expectancy and deaths, see:

- Deaths in Australia

- Australian Bureau of Statistics (ABS) Life tables for Aboriginal and Torres Strait Islander Australians, 2015–2017

- ABS Deaths, Australia, 2018

- ABS Causes of death, Australia, 2018

Visit Indigenous Australians for more on this topic.

References

ABS (Australian Bureau of Statistics) 2018. Life tables for Aboriginal and Torres Strait Islander Australians, 2015–2017. ABS cat. no. 3302.0.55.003. Canberra: ABS.

ABS 2019a. Causes of death, Australia, 2018. ABS cat. no. 3303.0. Canberra: ABS.

ABS 2019b. Deaths, Australia, 2018. ABS cat. no. 3302.0. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2018. Aboriginal and Torres Strait Islander Health Performance Framework (HPF) report 2017. Cat. no. IHW 194. Canberra: AIHW.

AIHW 2019. Deaths in Australia. Cat. no. PHE 229. Canberra: AIHW.

AIHW 2020, forthcoming. Aboriginal and Torres Strait Islander Health Performance Framework (HPF) report 2020. Canberra: AIHW.

PM&C (Department of the Prime Minister and Cabinet) 2019. Closing the Gap Prime Minister's report. Canberra: PM&C.

Profile of Indigenous Australians

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/profile-of-indigenous-australians

Aboriginal and Torres Strait Islander people are the Indigenous peoples of Australia. They comprise hundreds of groups, each with its own distinct language, history and cultural traditions.

This page provides some demographic information on the Indigenous population, as well as information on languages and cultures.

Indigenous population

In 2016, an estimated 798,400 Australians identified as Indigenous (3.3% of the total Australian population) (ABS 2019a). Among the Indigenous Australian population in 2016:

- 91% identified as being of Aboriginal origin
- 4.8% identified as being of Torres Strait Islander origin
- 4.0% were of both Aboriginal and Torres Strait Islander origin (ABS 2018b).

Using estimated resident population (ERP) projections based on the 2016 Census of Population and Housing, it is projected that in 2020 around 864,200 people will identify as Indigenous Australians (ABS 2019a).

Indigenous identification

The Australian Government defines Indigenous Australians as people who: are of Aboriginal or Torres Strait Islander descent; identify as being of Aboriginal or Torres Strait Islander origin; and are accepted as such in the communities in which they live or have lived.

In most data collections, a person is considered to be Indigenous if they identified themselves, or were identified by another household member, as being of Aboriginal or Torres Strait Islander origin. For a few data collections, information on acceptance of a person as being Indigenous by an Indigenous community may be required.

Age distribution

The Indigenous Australian population has a relatively young age structure compared to non-Indigenous Australians (Figure 1). In 2020, a projected 33% of Indigenous Australians are aged under 15 (compared with 18% of non-Indigenous Australians), and

only 5.2% of Indigenous Australians aged 65 and over (compared with 16% of non-Indigenous Australians) (ABS 2018a, 2019a).

Figure 1: Australian population distribution projection, by Indigenous status and age group, 2020
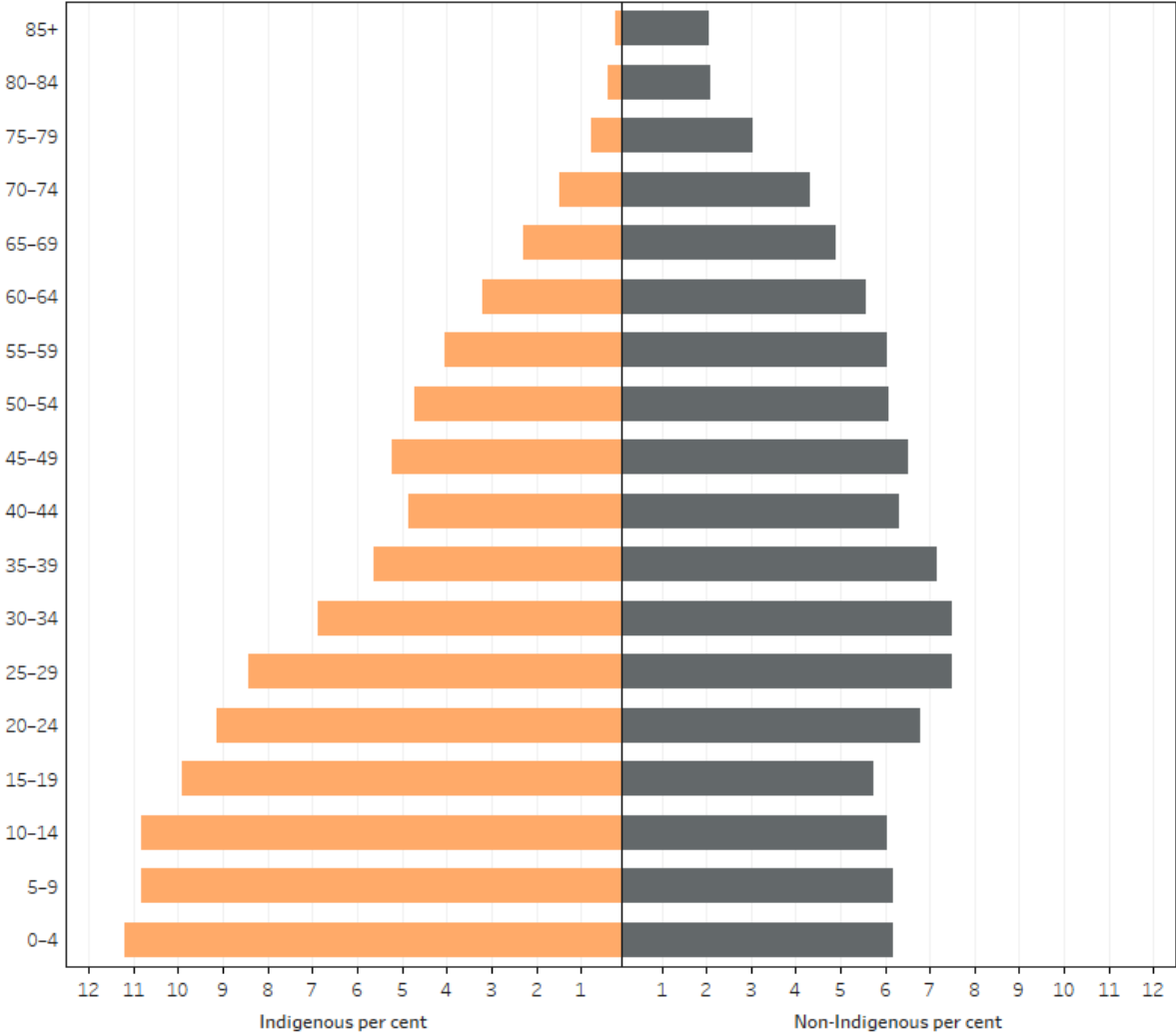
Note: Data based on projections from 2016 Census of Population and Housing.
Sources: ABS 2019a, ABS 2018a.
http://www.aihw.gov.au/

Geographic distribution

Indigenous Australians live in all parts of the nation, from cities to remote tropical and desert areas. However, overall Indigenous Australians are more likely to live in urban and regional areas than remote areas.

Figure 2 presents the distribution of Indigenous Australians at 30 June 2016 (as low-level spatial projections are not available for 2020).

Figure 2: Geographic distribution of the Indigenous population, 30 June 2016

Select geographic classification:
○ State/Territory
● Remoteness area
○ Remoteness by state
○ Indigenous regions

Click on area to view data

Very Remote Australia

Indigenous Australians:
95,222

Non-Indigenous Australians:
106,329

Per cent of population who are Indigenous:
47.2%

Indigenous population by sex:
47,997 females
47,225 males

Indigenous Australians aged <15:
29,610

Indigenous Australians aged 65+:
3,437
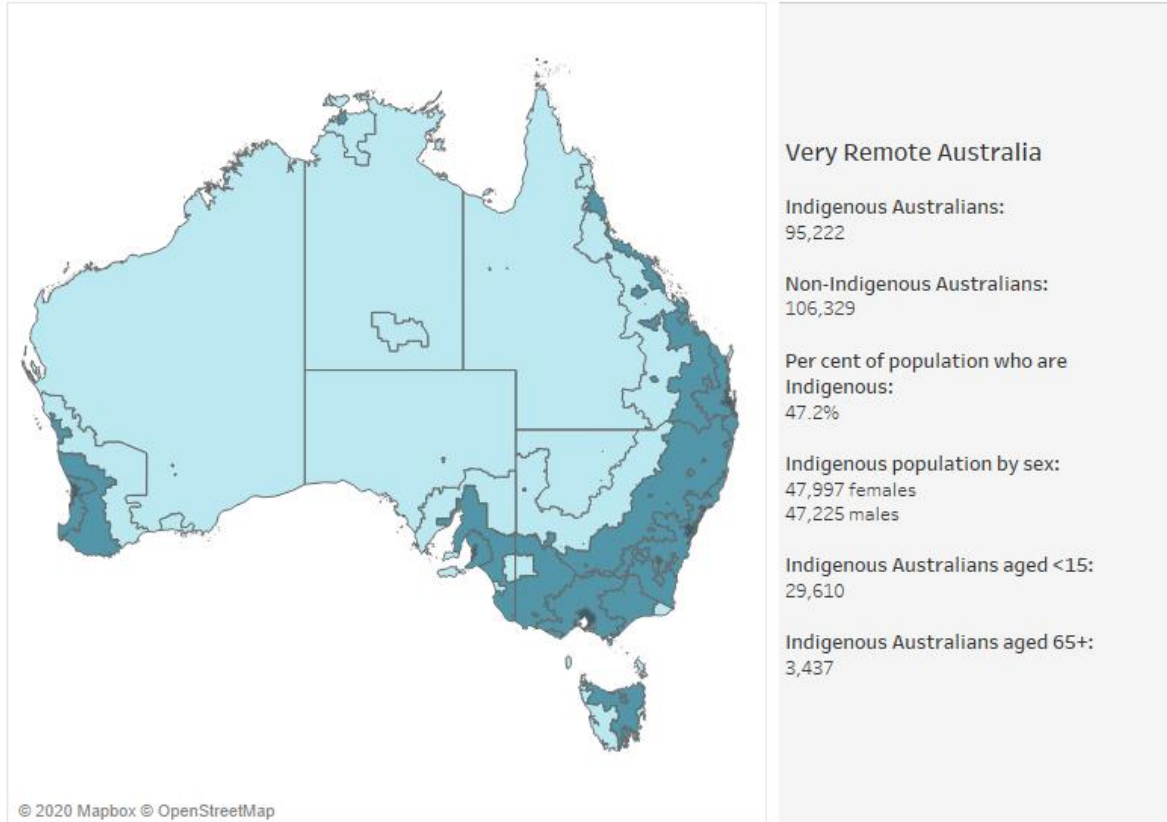
Note: Darker colours indicate larger numbers of Indigenous Australians.
Source: AIHW analysis of ABS 2018b.
http://www.aihw.gov.au/

Based on projections by the ABS using the 2016 Census (ABS 2019a), it is estimated that in 2020, among Indigenous Australians:

- 38% (329,100 people) live in *Major cities*

- 44% (381,300) live in *Inner and outer regional* areas

- 18% (153,700) live in *Remote and very remote* areas combined (ABS 2019a).

Across Australia, the Northern Territory has the highest proportion of Indigenous residents among its population—an estimated 31% (78,600 people) in 2020 (Figure 3) (ABS 2018; 2019a).

In 2020, an estimated 33% of Indigenous Australians (286,600 people) live in New South Wales and 28% (241,100) in Queensland (Figure 3).

Figure 3: Estimated Indigenous population by jurisdiction, 2020

Select indicator:
◉ Proportion of jurisdiction that is Indigenous
◯ Indigenous distribution across Australia
◯ Number of Indigenous Australians, by jurisdiction
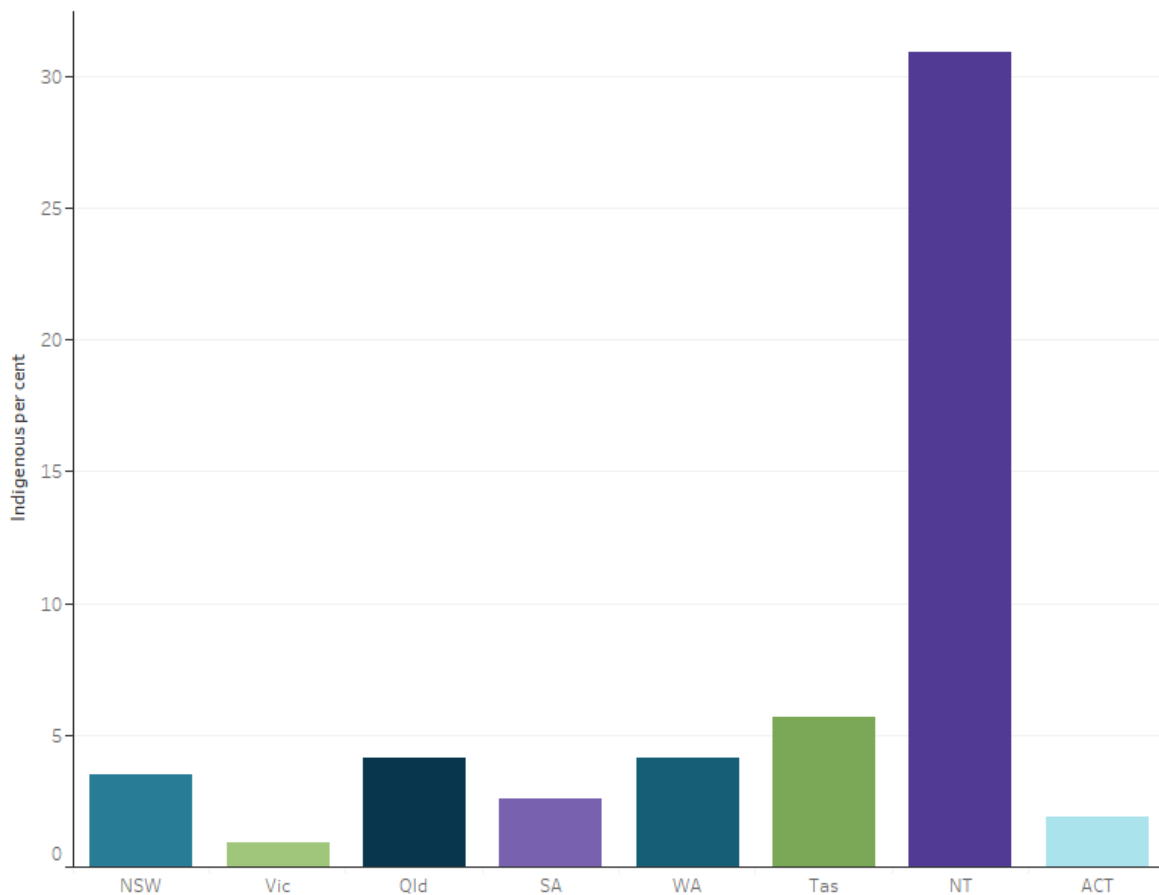
Note: Data based on projections from 2016 Census of Population and Housing.
Sources: ABS 2018a, ABS 2019a.
http://www.aihw.gov.au/

Language and culture

Indigenous communities pass on knowledge, tradition, ceremony and culture from one generation to the next through language, performance, protection of significant sites, storytelling and the teachings of Elders. Cultural factors such as connection to community, land and spirituality are important for the social and emotional wellbeing of Indigenous Australians (AIHW 2013).

In the 2016 Census, 1 in 10 (9.8%) Indigenous people reported that they spoke an Indigenous language at home, with over 150 different Indigenous languages being spoken (ABS 2019b). The most common Indigenous language spoken at home was Kriol (11%), followed by Yumplatok (Torres Strait Creole) (9.4%) and Djambarrpuyngu (6.7%) (ABS 2019b).

Data from the 2018–19 National Aboriginal and Torres Strait Islander Health Survey show that Indigenous Australians have strong connections to their family, community and culture.

Figure 4 shows that in 2018–19, among Indigenous Australians aged 15 and over:

- 74% (357,600 people) recognised an area as a homeland/traditional country—this was 89% in *Remote* areas compared with 70% in *Non-remote* areas.

  - Of these, 37% (130,700 people) lived on their homeland—this was 52% in *Remote* areas compared with 32% in *Non-remote* areas.

- 65% (314,300 people) identified with a clan or language group—this was 85% in *Remote* areas compared with 60% in *Non-remote* areas (ABS 2019c).

Figure 4: Selected measures of cultural connectedness among Indigenous Australians aged 15 and over, by remoteness, 2018–19
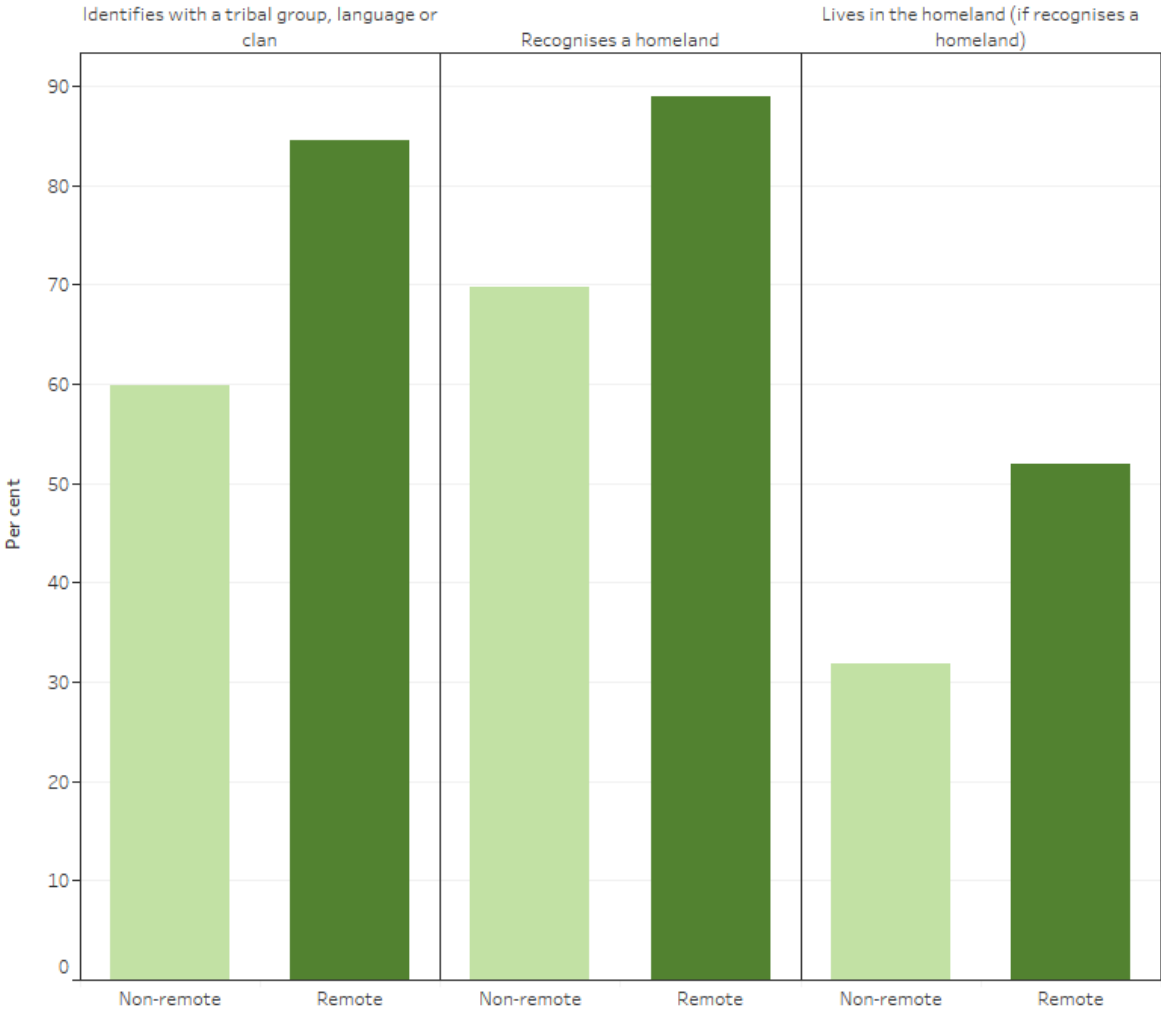
Source: ABS 2019c.
http://www.aihw.gov.au/

Education and economic participation

The circumstances in which people live, as well as their employment and education levels, tend to influence health, with health outcomes improving with increased education and employment (Crawford & Biddle 2017).

Based on self-reported survey data, outcomes for Indigenous Australians have improved across a number of areas between 2012–13 and 2018–19:

- The proportion of Indigenous Australians aged 15–64 who are not employed decreased from 22% to 19%.

- The proportion of Indigenous Australians aged 20–24 who completed at least Year 12 or equivalent or Certificate II or above, increased from 59% to 66% (Productivity Commission 2019).

In addition, the proportion of Indigenous households that were home owners increased from 34% in 2006 to 38% in 2016 (AIHW 2019).

See Social determinants and Indigenous health for more detailed information.

Indigenous welfare and wellbeing

Additional information on Indigenous Australians and their wellbeing is reported in Australia's welfare snapshots, including an overview of these topics:

- understanding Indigenous welfare and wellbeing

- education and skills

- employment

- housing

- income and finance

- disability support

- aged care

- community safety.

Where do I go for more information?

For more information on profile of Indigenous Australians, see:

- Australian Bureau of Statistics Aboriginal and Torres Strait Islander Peoples

Visit Indigenous Australians for more on this topic.

References

ABS (Australian Bureau of Statistics) 2018b. Estimates of Aboriginal and Torres Strait Islander Australians, June 2016. ABS cat. no. 3238.0.55.001. Canberra: ABS.

ABS 2018a. Population projections, Australia, 2017 (base)—2066. ABS cat. no. 3222.0. Canberra: ABS.

ABS 2019b. Census of Population and Housing: characteristics of Aboriginal and Torres Strait Islander Australians, 2016. ABS cat. no. 2076.0. Canberra: ABS.

ABS 2019a. Estimates and projections, Aboriginal and Torres Strait Islander Australians, 2006 to 2031. ABS cat. no. 3238.0. Canberra: ABS.

ABS 2019c. Microdata: National Aboriginal and Torres Strait Islander Health Survey, 2018–19. ABS cat. no. 4715.0. Findings based on use of Confidentialised Unit Record File analysis. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2013. Strategies and practices for promoting the social and emotional wellbeing of Aboriginal and Torres Strait Islander people. Cat. no. IHW 82. Canberra: AIHW.

AIHW 2019. Australia's welfare 2019: in brief. Cat. no. AUS 227. Canberra: AIHW.

Crawford H and Biddle N 2017. Changing associations of selected social determinants with Aboriginal and Torres Strait Islander health and wellbeing. Canberra: Australian National University.

Productivity Commission 2019. National Indigenous Reform Agreement Performance Data. Canberra: Productivity Commission.

Social determinants and Indigenous health

Find the most recent version of this information at:
https://www.aihw.gov.au/reports/australias-health/social-determinants-and-indigenous-health

Good health is related to a complex set of factors that include health risk factors, access to and use of health services, environmental factors, and an individual's own health capabilities or endowments. Systematic differences in these factors between individuals and subgroups of society are related to their socioeconomic position, including differences in education, employment and income. These socioeconomic differences are called the social determinants of health that are behind the observed differences in health outcomes (see Social determinants of health and Health across socioeconomic groups).

Broadly, social determinants are the circumstances in which people grow, live, work and age (WHO 2008). They can be measured by indicators that reflect an individual's own personal situation—such as their income, education, employment, and levels of social support and social inclusion; or their external natural environment—such as the levels of air pollution and hazardous materials they are exposed to in the areas they live in.

Early life experiences, housing conditions, transportation and access to health services are other commonly accepted social determinants of health (Wilkinson & Marmot eds 2003). Most of these social determinants are closely related; for example, higher levels of education usually lead to better employment prospects and higher incomes, and that leads to healthier housing conditions.

For Aboriginal and Torres Strait Islander people, the social determinants of health also include factors such as cultural identity, family, participation in cultural activities and access to traditional lands. Factors related to Indigenous community functioning are also important determinants of Indigenous health and wellbeing (AIHW 2017). See Profile of Indigenous Australians for more information on cultural connectedness.

The importance of social determinants in understanding and addressing the health gap between Indigenous and non-Indigenous Australians, along with differences in health outcomes within the Indigenous population, is well established. This page presents examples of the relationship between selected social determinants and self-assessed health status, and selected health risk factors. The focus is primarily on how these social determinants help to explain differences in health risk factors and outcomes within the Indigenous population.

Social determinants and the health gap

Studies have shown the importance of social determinants in understanding and addressing the health gap (differences in the average values of many health indicators between Indigenous Australians and non-Indigenous Australians) (AHMAC 2017; AIHW 2018; Booth & Carroll 2008; Marmot 2011).

Estimating impact of social determinants on the Indigenous health gap

The AIHW quantified the role of social determinants behind the average health gap between Indigenous and non-Indigenous Australians using a composite measure of health. The analysis relates to data on people aged 15–64 from the ABS 2012–13 Australian Aboriginal and Torres Strait Islander Health Survey (Indigenous data), and comparable data from the ABS 2011–12 Australian Health Survey (non-Indigenous component).

In these data 28% of Indigenous adults were assessed to be in good health, based on the composite health measure, compared with 54% of non-Indigenous adults, leading to an average gap of 26 percentage points.

The results of the statistical analyses showed that more than half (53%) of this health gap between Indigenous and non-Indigenous working-age adults can be accounted for by:

- a set of 5 selected social determinants (contributed 34% of the gap): employment and hours worked, highest non-school qualification, level of schooling completed, housing adequacy and household income

- a set of 6 'health risk factors' (contributed 19% of the gap): binge drinking, high blood pressure, overweight and obesity status, inadequate fruit and vegetable consumption, insufficient physical exercise, and smoking.

Household income differences alone contributed almost 14% of the overall health gap, followed by differences in employment and hours worked (12%), and level of schooling completed (8.7%). Among the health risk factors, the key component was the difference in smoking status between Indigenous and non-Indigenous Australians (which contributed to 10% of the health gap).

The 47% of the health gap that remained unexplained after accounting for the selected social determinants and health risk factors can be related to other variables not able to be included in the analysis, which include differences in access to health services.

For more information, see 'Chapter 6.7 Size and sources of the Indigenous health gap' in Australia's health 2018.

Differences in social determinants can also account for a large part of the differences in health status within the Indigenous population. For instance, Indigenous Australians who are not employed and those with lower levels of education in general, have poorer health than employed Indigenous Australians and those with higher education levels.

Also, Indigenous Australians who are not employed, and those with lower levels of education, are more likely to smoke which also contributes to their poorer health.

Self-assessed health

Indigenous Australian adults were more likely to report very good or excellent health if they lived in higher socioeconomic areas, were employed, or had completed a higher level of educational attainment at school.

Figure 1 shows differences in health status among Indigenous Australians by selected social determinants in 2018–19.

Among Indigenous Australian adults who were employed:

- 54% reported having very good or excellent health, compared with 37% among those who were not employed (ABS 2019b).

Among Indigenous Australian adults who had a Year 12 or equivalent level of school qualification:

- 54% reported being in very good or excellent health, compared with 38% among those who had only a Year 10 or lower level of school qualification (ABS 2019b).

The difference in the proportions reporting excellent or very good health on 2 other socio-economic determinants defined at the household level (that is, whether the actual house that is lived in is of an acceptable standard or not, and the socioeconomic ranking of the region the household is in) are also shown in Figure 1.

See Indigenous health and wellbeing for more information on the health of Indigenous Australians.

Figure 1: Selected social determinants of health, by disaggregation and period

Select disaggregation
- ◉ Education
- ◯ Employment
- ◯ Income

Proportion of persons aged 25–64 with a non-school qualification at Certificate III or above, 2004 to 2019

Legend:
- Persons
- Males
- Females

Note: From 2013, persons permanently unable to work were included in the scope of the Survey of Education and Work, and re-based estimated resident population data were used from 2014. These factors may affect the comparison of data over time.
Source: ABS 2019a.

http://www.aihw.gov.au/
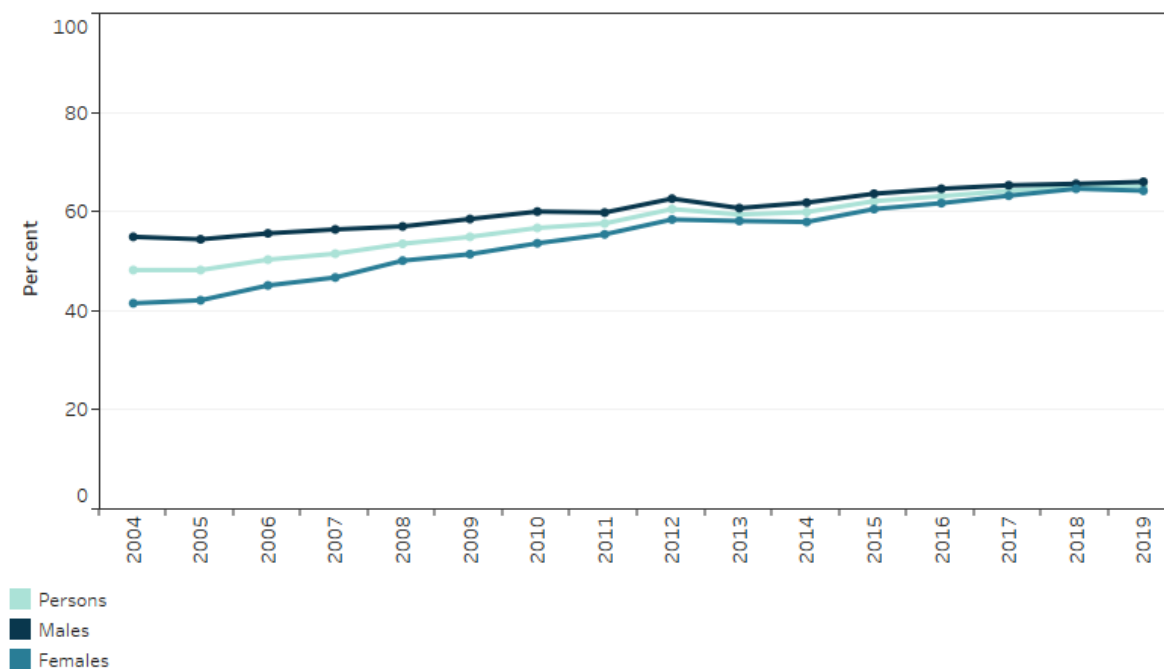
Health risk factors

Broadly, Indigenous Australians who are more advantaged across social and economic measures are more likely to have a lower prevalence of health risk factors.

Figure 2 shows the relationship between 2 selected risk factors (smoking and adequate physical activity) among Indigenous Australians based on their level of school education, and among those who were employed compared with those who were not employed.

In 2018–19, among Indigenous Australian adults aged 18 and over, the proportion who did not smoke was higher among those:

- who were employed compared with those not employed (including those not in the labour force) (66% compared with 48%, respectively)

- who had completed Year 12 or equivalent, compared with those with a Year 10 or lower level of school qualification (71% compared with 49%, respectively) (ABS 2019a).

Similarly, in 2018–19 the proportion of Indigenous Australian adults that met the guidelines for weekly physical activity was higher among those employed (15%) than among those not employed (8.4%), and higher among those who had completed Year 12 or equivalent (15%) than those with Year 10 or below (9.1%) level of schooling (ABS 2019a).

See also Health risk factors among Indigenous Australians.

Figure 2: Rate of homelessness, people per 10,000 population, by homelessness group, 2001 to 2016

Homelessness group
All homeless persons
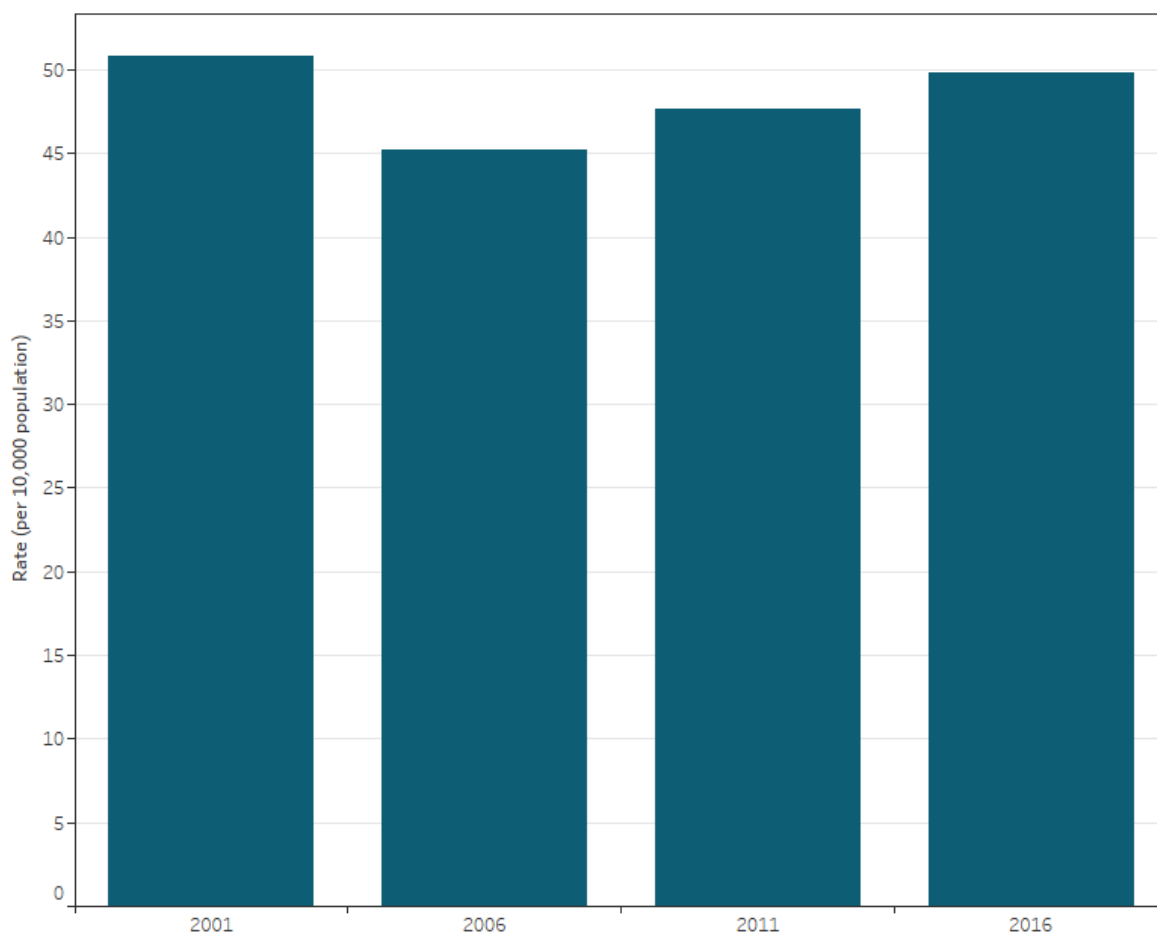
Note: Homelessness groups are mutually exclusive, therefore persons will only appear in one category.
Source: ABS 2018.
http://www.aihw.gov.au/

Where do I go for more information?

For more information on social determinants and Indigenous health, see:

- [Australia's health 2018](#) 'Chapter 6.7 Sizes and sources of the Indigenous health gap'
- Australian Health Ministers' Advisory Council [Aboriginal and Torres Strait Islander Health Performance Framework 2017 report](#)
- Australian Bureau of Statistics [National Aboriginal and Torres Strait Islander Health Survey, 2018–19](#)

Visit [Indigenous Australians](#) for more on this topic.

References

ABS (Australian Bureau of Statistics) 2019a. [National Aboriginal and Torres Strait Islander Health Survey, 2018–19](#). cat. no. 4715.0. Canberra: ABS.

ABS 2019b. [National Aboriginal and Torres Strait Islander Health Survey, 2018–19](#). Expanded Confidentialised Unit Record File, DataLab. Findings based on use of ABS Microdata. Canberra: ABS.

AHMAC (Australian Health Ministers' Advisory Council) 2017. [Aboriginal and Torres Strait Islander Health Performance Framework 2017 report](#). Canberra: AHMAC.

AIHW (Australian Institute of Health and Welfare) 2017. [Australia's welfare 2017](#). Australia's welfare series no. 13. Cat. no. AUS 214. Canberra: AIHW.

AIHW 2018. [Australia's health 2018](#). Australia's health series no. 16. Cat. no. AUS 221. Canberra: AIHW.

Booth A & Carroll N 2008. Economic status and the Indigenous/non-Indigenous health gap. Economic Letters 99(3):604–606.

Marmot, M. 2011. Social determinants and the health of Indigenous Australians. Medical Journal of Australia 194(10):512–513.

WHO (World Health Organization) Commission on Social Determinants of Health 2008. [Closing the gap in a generation: Health equity through action on the social determinants of health](#). Final report of the Commission on Social Determinants of Health. Geneva: WHO.

Wilkinson R & Marmot M eds. 2003. [The social determinants of health: the solid facts. 2nd edn](#). Copenhagen: World Health Organization Europe.

Glossary

abnormal blood lipid levels: Abnormal levels of fats in the blood, such as cholesterol or triglycerides. Here it has been defined as total cholesterol ≥5.5 mmol/L, LDL cholesterol ≥3.5 mmol/L, HDL cholesterol <1.0 mmol/L in men or <1.3 mmol/L in women, triglycerides ≥2mmol/L, or use of lipid-modifying medication.

Aboriginal and Torres Strait Islander health practitioner: A person who has completed a Certificate IV in Aboriginal and/or Torres Strait Islander Primary Health Care (Practice) and is registered with the Aboriginal and Torres Strait Islander Health Practice Board of Australia. The practitioner may undertake higher levels of clinical assessment and care within their agreed scope of practice.

Aboriginal and Torres Strait Islander health worker: An Aboriginal and/or Torres Strait Islander with a minimum qualification in the field of primary health care work or clinical practice. This includes Aboriginal and Torres Strait Islander health practitioners who are one speciality stream of health worker. Health workers liaise with patients, clients and visitors to hospitals and health clinics, and work as a team member to arrange, coordinate and deliver health care in community health clinics.

Aboriginal or Torres Strait Islander: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander. See also **Indigenous**.

abstainer (alcohol): a person who has not consumed alcohol in the previous 12 months.

Accessibility/Remoteness Index of Australia: Classifies of the level of accessibility to goods and services (such as to general practitioners, hospitals and specialist care) based on proximity to these services (measured by road distance).

acquired immune deficiency syndrome (AIDS): A syndrome caused by the human immunodeficiency virus (HIV). If HIV is untreated, the body's immune system is damaged and is unable to fight infections and cancer.

active travel: The process of being physically active to make a journey. Common forms of active travel are walking and cycling.

acute: A term used to describe something that comes on sharply and is often brief, intense and severe.

acute care: Care provided to patients admitted to hospital that is intended to cure illness, alleviate symptoms of illness or manage childbirth.

Acute coronary event: An umbrella term that is used to describe sudden and life threatening conditions that result in reduced blood flow to the heart. The term includes acute myocardial infarction (sometimes referred to as heart attack), unstable angina, and deaths due to acute coronary heart disease.

Acute myocardial infarction: Life-threatening emergency that occurs when a vessel supplying blood to the heart muscle is suddenly blocked completely by a blood clot.

additional diagnosis: The diagnosis of a condition or recording of a complaint—either coexisting with the principal diagnosis or arising during the episode of admitted patient care (hospitalisation), episode of residential care or attendance at a health care establishment—that requires the provision of care. Multiple diagnoses may be recorded.

adequate consumption of fruit and vegetables: A balanced diet, including sufficient fruit and vegetables, reduces a person's risk of developing conditions such as heart disease and diabetes. The National Health and Medical Research Council's 2013 Australian Dietary Guidelines recommend a minimum number of serves of fruit and vegetables each day, depending on a person's age and sex, to ensure good nutrition and health.

ADF personnel: Serving and ex-serving members of the Australian Defence Force; civilian personnel employed by the Department of Defence are excluded.

admission: An admission to hospital. In this report, the term hospitalisation is used to describe an episode of hospital care that starts with the formal admission process and ends with the formal separation process. The number of separations has been taken as the number of admissions; hence, the admission rate is the same as the separation rate.

admitted care: A specialised mental health service that provides overnight care in a psychiatric hospital or a specialised mental health unit in an acute hospital. Psychiatric hospitals and specialised mental health units in acute hospitals are establishments devoted primarily to the treatment and care of admitted patients with psychiatric, mental or behavioural disorders. These services are staffed by health professionals with specialist mental health qualifications or training and have as their principal function the treatment and care of patients affected by mental disorder/illness.

admitted patient: A patient who undergoes a hospital's formal admission process.

age structure: The relative number of people in each age group in a population.

age-specific rate: A rate for a specific age group. The numerator and denominator relate to the same age group.

age-standardisation: A way to remove the influence of age when comparing populations with different age structures. This is usually necessary because the rates of many diseases vary strongly (usually increasing) with age. The age structures of the different populations are converted to the same 'standard' structure, and then the disease rates that would have occurred with that structure are calculated and compared.

air pollutants: Pollutants that include ozone (O3), nitrogen dioxide (NO2), particulate matter (PM10 or 2.5), carbon monoxide (CO), sulfur dioxide (SO2) and biological allergens.

Alcohol-induced deaths: Deaths that can be directly attributable to alcohol use, as determined by toxicology and pathology reports.

allergic rhinitis: A bodily response triggered by an allergic reaction. The symptoms may include a runny or blocked nose and/or sneezing and watery eyes. Also known as 'hay fever'.

allied health professional: A health professional who is not a doctor, nurse or dentist. Allied health professionals include (but are not limited to) chiropractors, occupational therapists, optometrists, osteopaths, pharmacists, physiotherapists, podiatrists, psychologists and speech pathologists.

Alzheimer's disease: A degenerative brain disease caused by nerve cell death resulting in shrinkage of the brain. A common form of dementia.

ambulatory care: A specialised mental health service that provides services to people who are not currently admitted to a mental health admitted or residential service. Services are delivered by health professionals with specialist mental health qualifications or training. Ambulatory mental health services include:

- community-based crisis assessment and treatment teams
- day programs
- mental health outpatient clinics provided by either hospital or community-based services
- child and adolescent outpatient and community teams
- social and living skills programs
- psychogeriatric assessment services
- hospital-based consultation-liaison and in-reach services to admitted patients in non-psychiatric and hospital emergency settings
- ambulatory-equivalent same day separations
- home based treatment services
- hospital based outreach services.

anaemia: A condition in which the body lacks healthy red blood cells that carry oxygen to the body's tissues.

angina: Temporary chest pain or discomfort when the heart's own blood supply is inadequate to meet extra needs, as in exercise.

antenatal: The period covering conception up to the time of birth. Synonymous with prenatal.

antenatal care: A planned visit between a pregnant woman and a midwife or doctor to assess and improve the wellbeing of the mother and baby throughout pregnancy. It does not include visits where the sole purpose is to confirm the pregnancy. Also known as an antenatal visit.

anxiety disorders: A group of mental disorders marked by excessive feelings of apprehension, worry, nervousness and stress. Includes generalised anxiety disorder, obsessive-compulsive disorder, panic disorder, post-traumatic stress disorder and various phobias.

apparent consumption of alcohol: Provides estimates of apparent consumption of alcohol based on availability of alcoholic beverages in Australia. It contains data on the quantity of pure alcohol available for consumption from beer, wine, spirits, ready to drink (pre-mixed) beverages and cider, plus estimates of the total volume of beer and wine available for consumption. Apparent consumption measures the amount of alcohol available for consumption (based on excise, import and sales data), but does not measure actual consumption as it does not account for factors such as waste or storage.

Apgar score: Numerical score used to indicate a baby's condition at 1 minute and at 5 minutes after birth. Between 0 and 2 points are given for each of 5 characteristics: breathing, colour, heart rate, muscle tone and reflex irritability. The total score is between 0 and 10.

arthritis: A group of disorders for which there is inflammation of the joints—which can then become stiff, painful, swollen or deformed. The two main types of arthritis are osteoarthritis and rheumatoid arthritis.

Artificial intelligence: The simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using rules to reach approximate or definite conclusions) and self-correction.

associated cause(s) of death: A cause(s) listed on the Medical Certificate of Cause of Death, other than the underlying cause of death. They include the immediate cause, any intervening causes, and conditions that contributed to the death but were not related to the disease or condition causing death. See also **cause(s) of death**.

asthma: A common, chronic inflammatory disease of the air passages that presents as episodes of wheezing, breathlessness and chest tightness due to widespread narrowing of the airways and obstruction of airflow.

asthma–COPD overlap: A condition where adults have features of both asthma and chronic obstructive pulmonary disease (COPD).

at risk of homelessness: Person who is at risk of losing their accommodation or are experiencing one or more factors or triggers that can contribute to homelessness. Risk factors include financial or housing affordability stress, inadequate or inappropriate dwelling conditions, previous accommodation ended, child abuse, family, sexual and domestic violence, and relationship or family breakdown.

atrial fibrillation: An uneven and fast heartbeat.

attributable burden: The amount of burden that could be reduced if exposure to the risk factor had been avoided.

Australian Standard Geographical Classification (ASGC): Common framework defined by the Australian Bureau of Statistics for collecting and disseminating geographically classified statistics. The framework was implemented in 1984 and its final release was in 2011. It has been replaced by the Australian Statistical Geography Standard (ASGS).

Australian Statistical Geography Standard (ASGS): Common framework defined by the Australian Bureau of Statistics for collecting and disseminating geographically classified statistics. It replaced the Australian Standard Geographical Classification (ASGC) in July 2011.

average length of stay: The average number of patient days for admitted patient episodes. Patients who have an admission and a separation on the same date are allocated a length of stay of 1 day.

avoidable burden: The reduction in future burden that would occur if current and/or future exposure to a particular risk factor were avoided. Compare with attributable burden.

avoidable deaths: See **potentially avoidable deaths**.

back pain and problems: A range of conditions related to the bones, joints, connective tissue, muscles and nerves of the back. Back problems are a substantial cause of disability and lost productivity.

binge drinking: The consumption of an excessive amount of alcohol in a short period of time.

birthweight: The first weight of the baby (stillborn or liveborn) obtained after birth (usually measured to the nearest 5 grams and obtained within 1 hour of birth).

blood cholesterol: Fatty substance produced by the liver and carried by the blood to supply the rest of the body. Its natural function is to supply material for cell walls and for steroid hormones, but if levels in the blood become too high this can lead to atherosclerosis (a disease in which plaque builds up inside the arteries) and heart disease.

blood pressure: The force exerted by the blood on the walls of the arteries as it is pumped around the body by the heart. It is written, for example, as 134/70 mmHg, where the upper number is the systolic pressure (the maximum force against the arteries as the heart muscle contracts to pump the blood out) and the lower number is the diastolic pressure (the minimum force against the arteries as the heart relaxes and fills again with blood). Levels of blood pressure can vary greatly from person to person and from moment to moment in the same person. See also **high blood pressure/hypertension**.

bodily pain: An indication of the severity of any bodily pain that the respondent had experienced (from any and all causes) during the last 4 weeks.

body mass index (BMI): The most commonly used method of assessing whether a person is normal weight, underweight, overweight or obese (see **obesity**). It is calculated

by dividing the person's weight (in kilograms) by their height (in metres) squared—that is, kg ÷ m2. For both men and women, underweight is a BMI below 18.5, normal weight is from 18.5 to less than 25, overweight but not obese is from 25 to less than 30, and obese is 30 and over. Sometimes overweight and obese are combined—defined as a BMI of 25 and over.

bronchiectasis: An abnormal widening of the lungs' air passages (bronchi). This allows infections to develop and leads to coughing with pus and sometimes blood. It has several causes, including cystic fibrosis; reduced immune functioning; and infections such as tuberculosis, whooping cough (pertussis) and measles.

bronchitis: Inflammation of the main air passages (bronchi). May be acute or chronic.

built environment: The built environment refers to the human-made surroundings where people live, work and recreate. It includes buildings and parks as well as supporting infrastructure such as transport, water and energy networks (Coleman 2017).

bulk-billing: The process where a medical practitioner or other health practitioner sends the bill for eligible services directly to Medicare, so the patient pays nothing. Also known as direct billing.

burden of disease: The quantifiable impact of a disease, injury or risk factor on a population, using the disability-adjusted life year (DALY) measure.

burden of disease (and injury): The quantified impact of a disease or injury on a population, using the disability-adjusted life years (DALYs) measure. Referred to as the 'burden' of the disease or injury in this report.

caesarean section: A method of birth in which a surgical incision is made into the mother's uterus via the abdomen to directly remove the baby.

campylobacteriosis: A disease caused by Campylobacter bacteria. It is a one of the most common causes of gastroenteritis in Australia and is a notifiable disease.

cancer: A large range of diseases where some of the body's cells become defective, begin to multiply out of control, invade and damage the area around them, and can then spread to other parts of the body to cause further damage.

cancer incidence: The number or rate of new cases of cancer diagnosed in a population during a given time period.

cancer of secondary site: A cancer that has metastasised (spread) from the place where it first started (primary site) to another part of the body (secondary site). If a secondary cancer is diagnosed but the practitioner is unsure of where it began, the cancer is referred to one of a secondary site or unknown primary cancer.

capital expenditure: Spending on large-scale fixed assets (for example, new buildings and equipment) with a useful life extending over several years.

cardiomyopathy: A condition where there is direct and widespread damage to the heart muscle, weakening it. It can be due to various causes, such as viral infections and

severe alcohol abuse. It can lead to an enlarged, thickened and dilated heart as well as heart failure.

cardiovascular disease/condition: Any disease of the circulatory system, namely the heart (cardio) or blood vessels (vascular). Includes angina, heart attack, stroke and peripheral vascular disease. Also known as circulatory disease.

caries: Bacterial disease that causes the demineralisation and decay of teeth and can involve inflammation of the central dental pulp.

cause(s) of death: All diseases, morbid conditions or injuries that either resulted in or contributed to death—and the circumstances of the accident or violence that produced any such injuries—that are entered on the Medical Certificate of Cause of Death. Causes of death are commonly reported by the underlying cause of death. See also **associated cause(s) of death** and **multiple causes of death**.

cerebrovascular disease: Any disorder of the blood vessels supplying the brain or its covering membranes. A notable and major form of cerebrovascular disease is stroke.

cervical screening test (CST): Consists of an human papillomavirus (HPV) test with partial genotyping and, if the HPV test detects oncogenic HPV, liquid based cytology (LBC).

child: A person aged 0–14 unless otherwise stated.

chlamydia: The most common sexually transmissible infection in Australia, caused by Chlamydia trachomatis bacteria. It is treatable and may not cause symptoms; however, it can lead to serious illness if untreated. It is a notifiable disease.

cholesterol: See **blood cholesterol**.

chronic: Persistent and long-lasting.

chronic conditions: A term describing a health condition that is persistent and long lasting.

chronic diseases/conditions: A diverse group of diseases/conditions, such as heart disease, cancer and arthritis, which tend to be long lasting and persistent in their symptoms or development. Although these features also apply to some communicable diseases (infectious diseases), the term is usually confined to non-communicable diseases.

chronic kidney disease (CKD): Refers to all conditions of the kidney, lasting at least 3 months, where a person has had evidence of kidney damage and/or reduced kidney function, regardless of the specific cause.

chronic obstructive pulmonary disease (COPD): Serious, progressive and disabling long-term lung disease where damage to the lungs (usually because of both emphysema and chronic bronchitis) obstructs oxygen intake and causes increasing shortness of breath. By far the greatest cause of COPD is cigarette smoking.

chronic sinusitis: The inflammation of the lining of one or more sinuses (large air cavities inside the face bones). It occurs when normal draining of the sinuses is

obstructed by swelling, excessive mucus or an abnormality in the structure of the sinuses.

circulatory disease: Alternative name for cardiovascular disease.

clinical domain: A component of the health system delivering health care to an identifiable patient population.

clinical quality registry: A mechanism for monitoring the quality (appropriateness and effectiveness) of health care, within specific clinical domains, by routinely collecting, analysing and reporting health-related information.

clinical trials: These are controlled investigations on patients and non-patients conducted with the purpose of testing various hypotheses, such as the use of new and existing drugs, treatments or behavioural therapies, to test their safety and effectiveness.

closed treatment episode: A period of contact between a client and a treatment provider, or team of providers. An episode is closed when treatment is completed, there has been no further contact between the client and the treatment provider for 3 months, or when treatment is ceased.

colorectal (bowel) cancer: This disease comprises cancer of the colon, cancer of the rectosigmoid junction and cancer of the rectum (ICD-10 codes C18–C20).

communicable disease: See **infectious disease**.

community health services: Non-residential health services offered to patients/clients in an integrated and coordinated manner in a community setting, or the coordination of health services elsewhere in the community. Such services are provided by, or on behalf of, state and territory governments.

comorbidity: Defined in relation to an index disease/condition, comorbidity describes any additional disease that is experienced by a person while they have the index disease. The index and comorbid disease/condition will change depending on the focus of the study. Compare with multimorbidity.

condition (health condition): A broad term that can be applied to any health problem, including symptoms, diseases and various risk factors (such as high blood cholesterol, and obesity). Often used synonymously with disorder.

conductive hearing loss: A deviation of hearing threshold from the normal range associated with reduced conduction of sound through the outer ear, tympanic membrane (eardrum) or middle ear, including the ossicles (middle ear bones).

confidence interval: A range determined by variability in data, within which there is a specified (usually 95%) chance that the true value of a calculated parameter lies.

congenital: A condition that is recognised at birth, or is believed to have been present since birth, including conditions inherited or caused by environmental factors.

constant prices: Dollar amounts for different years that are adjusted to reflect the prices in a chosen reference year. This allows spending over time to be compared on an

equal dollar-for-dollar basis without the distorting effects of inflation. The comparison will reflect only the changes in the amount of goods and services purchased—changes in the 'buying power'—not the changes in prices of these goods and services caused by inflation.

co-payment (PBS RPBS): The costs incurred by an individual for payment of a Pharmaceutical Benefits Scheme (PBS) or Repatriation Pharmaceutical Benefits Scheme (RPBS) medicine.

core activity: Term used in discussions of disability that refers to the basic activities of daily living: self-care, mobility and communication.

core activity limitation: A limitation where someone needs help with—or is having difficulty in using aids and equipment for—self-care, mobility and/or communication. See also **disability**, **mild or moderate core activity limitation** and **severe or profound core activity limitation**.

coronary heart disease: A disease due to blockages in the heart's own (coronary) arteries, expressed as angina or a heart attack. Also known as ischaemic heart disease.

critical care: The specialised care of patients whose conditions are life-threatening and who require comprehensive care and constant monitoring, usually in intensive care units.

current prices: Expenditures reported for a particular year, unadjusted for inflation. Changes in current price expenditures reflect changes in both price and volume.

current smoker: Reported smoking daily, weekly or less than weekly at the time of the survey.

current use of e-cigarettes: reported smoking electronic cigarettes daily, weekly, monthly or less than monthly.

cytology: Cytology means 'study of cells' and, in the context of cervical screening, refers to cells from the cervix that are collected and examined for abnormalities.

daily smoker: reported smoking tobacco at least once a day (includes manufactured (packet) cigarettes, roll-your-own cigarettes, cigars or pipes). Excludes chewing tobacco, electronic cigarettes (and similar) and smoking of non-tobacco products.

DALY: See **disability-adjusted life year**.

data linkage: The bringing together (linking) of information from two or more different data sources that are believed to relate to the same entity (for example, the same individual or the same institution). This linkage can yield more information about the entity and, in certain cases, provide a time sequence—helping to 'tell a story', show 'pathways' and perhaps unravel cause and effect. The term is used synonymously with 'record linkage' and 'data integration'.

deep vein thrombosis (DVT): Deep vein thrombosis (DVT) is a blood clot that forms in the veins of the leg. Complications include pulmonary embolism (PE), which can be fatal, phlebitis (inflammation) and leg ulcers.

Dementia: A term used to describe a group of similar conditions characterised by the gradual impairment of brain function. It is commonly associated with memory loss, but can affect speech, cognition (thought), behaviour and mobility. An individual's personality may also change, and health and functional ability decline as the condition progresses.

deployment: Warlike or non-warlike service overseas by members assigned for duty with a United Nations mission or a similar force.

depression: A mood disorder with prolonged feelings of being sad, hopeless, low and inadequate, with a loss of interest or pleasure in activities and often with suicidal thoughts or self-blame.

depressive disorders: A group of mood disorders with prolonged feelings of being sad, hopeless, low and inadequate, with a loss of interest or pleasure in activities and often with suicidal thoughts or self-blame.

determinant: Any factor that can increase the chances of ill health (risk factors) or good health (protective factors) in a population or individual. By convention, services or other programs that aim to improve health are usually not included in this definition.

developmentally vulnerable: Children who scored in the lowest 10 per cent on one or more of the 5 domains of the Australian Early Development Census. The domains are physical health and wellbeing, social competence, emotional maturity, language and cognition skills, and communication skills and general knowledge.

diabetes (diabetes mellitus): A chronic condition where the body cannot properly use its main energy source—the sugar glucose. This is due to a relative or absolute deficiency in insulin, a hormone produced by the pancreas that helps glucose enter the body's cells from the bloodstream and be processed by them. Diabetes is marked by an abnormal build-up of glucose in the blood; it can have serious short- and long-term effects. For the three main types of diabetes, see **type 1 diabetes**, **type 2 diabetes** and **gestational diabetes**.

diagnostic imaging: The production of diagnostic images; for example, computed tomography, magnetic resonance imaging, X-rays, ultrasound and nuclear medicine scans.

dialysis: An artificial method of removing waste substances from the blood and regulating levels of circulating chemicals—functions usually performed by the kidneys.

digital health: The electronic management of health information. This includes using technology to collect and share a person's health information. It can be as simple as a person wearing a device to record how much exercise they do each day, to health care providers sharing clinical notes about an individual.

disability: An umbrella term for any or all of the following: an impairment of body structure or function, a limitation in activities, or a restriction in participation. Disability is a multidimensional concept and is considered as an interaction between health conditions and personal and environmental factors. See also **core activity limitation**,

mild or moderate core activity limitation and **severe or profound core activity limitation**.

disability-adjusted life year (DALY): A year of healthy life lost, either through premature death or, equivalently, through living with ill health due to illness or injury. It is the basic unit used in burden of disease and injury estimates.

discharge (Australian Defence Force): Separation from the Australian Defence Force.

discretionary foods: Foods and drinks not necessary to provide the nutrients the body needs, but which may add variety. Many are high in saturated fats, sugars, salt and/or alcohol, and are energy dense.

disease: A physical or mental disturbance involving symptoms (such as pain or feeling unwell), dysfunction or tissue damage, especially if these symptoms and signs form a recognisable clinical pattern.

disease vector: Living organisms that can transmit infectious diseases between humans or from animals to humans; these are frequently blood sucking insects such as mosquitoes.

disorder (health disorder): A term used synonymously with condition.

domestic violence: A set of violent behaviours between current or former intimate partners—typically, where one partner aims to exert power and control over another, usually through fear. Domestic violence can include physical violence, sexual violence, and emotional and psychological abuse.

drug-induced deaths: Drug-induced deaths are defined as those that can be directly attributable to drug use, as determined by toxicology and pathology reports. They are classified due to their intent—accidental, intentional (including assault and suicide), undetermined intent or other. Further, they include deaths from illicit drugs (for example, heroin, amphetamines and cocaine) and licit drugs (for example, benzodiazepines and anti-depressants). Deaths solely attributable to alcohol and tobacco are excluded.

 drug-related hospitalisation: Hospital care with selected principal diagnoses of drug use disorder or harm (accidental, intended or self-inflicted) due to selected drugs.

drug-related separations: Hospital care with selected principal diagnoses of a substance misuse disorder or harm.

dwelling density: The number of dwellings divided by the area in hectares.

elective surgery: Elective care in which the procedures required by patients are listed in the surgical operations section of the Medicare Benefits Schedule, excluding specific procedures often done by non-surgical clinicians.

electronic cigarette (e-cigarette): devices designed to produce a vapour that the user inhales. Usually contain a battery, a liquid cartridge and a vaporisation system and are used in a manner that simulates smoking.

electronic health records: A longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting.

emotional maturity: A set of abilities that enable children to understand and manage how they respond when faced with situations that elicit an emotional reaction.

emphysema: A chronic lung disease where over-expansion or destruction of the lung tissue blocks oxygen intake, leading to shortness of breath and other problems.

end-stage kidney disease (ESKD): The most severe form of chronic kidney disease (CKD), also known as Stage 5 CKD or kidney failure.

epilepsy: A common, long-term brain condition where a person has repeated seizures.

equivalised household income: Household income adjusted by the application of an equivalence scale to facilitate comparison of income levels between households of differing size and composition, reflecting that a larger household would normally need more income than a smaller household to achieve the same standard of living. Equivalised total household income is derived by calculating an equivalence factor according to the 'modified OECD' equivalence scale, and then dividing income by the factor.

estimated resident population (ERP): The official Australian Bureau of Statistics estimate of the Australian population. The ERP is derived from the 5-yearly Census counts and is updated quarterly between each Census. It is based on the usual residence of the person. Rates are calculated per 1,000 or 100,000 mid-year (30 June) ERP.

ex-serving (Australian Defence Force): Includes serving, reserve, and ex-serving members in the Australian Defence Force.

ex-smoker: A person who has smoked at least 100 cigarettes or equivalent tobacco in his or her lifetime, but does not smoke now.

extreme weather event: An unusual weather event or phenomenon at the extreme of a 'typical' historical distribution, such as a violent storm, exceptionally high levels of rainfall, or a heat wave or drought that is longer or hotter than normal.

family violence: Violence between family members as well as between current or former intimate partners. For example, family violence can include acts of violence between a parent and a child. 'Family violence' is the preferred term used to identify experiences of violence for Indigenous people as it encompasses the broad range of extended family and kinship relationships within which violence may occur.

fatal burden: Quantified impact on a population of premature death due to disease or injury. Measured as years of life lost (YLL).

fertility rate: Number of live births per 1,000 females aged 15–49.

fetal death (stillbirth): Death, before the complete expulsion or extraction from its mother, of a product of conception of 20 or more completed weeks of gestation, or of 400 g or more birthweight. Death is evidenced by the fact that, after such separation,

the fetus does not breathe or show any other signs of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles.

filicide: A homicide where a parent (or step-parent) kills a child.

first trimester: The first 3-months of a pregnancy. Pregnancy is divided into three trimesters: first trimester (conception to 13 weeks), second trimester (13 to 26 weeks) and third trimester (26 to 40 weeks).

forceps: Hand-held, hinged obstetric instrument applied to the fetal head to assist birth.

foreign body: An object which is left inside the human body which is not meant to be there, for example surgical instruments.

Forest Fire Danger Index (FFDI): The McArthur Forest Fire Danger Index uses dryness (a product of rainfall and evaporation), wind speed, temperature and humidity to indicate the degree of danger of fire in Australian Forests.

full-time equivalent (FTE) workforce or workload: A standard measure of the size of a workforce that takes into account both the number of workers and the hours that each works. For example, if a workforce comprises 2 people working full time 38 hours a week and 2 working half time, this is the same as 3 working full time—that is, an FTE of 3.

gastrointestinal: A term relating to the stomach and the intestine.

gastrointestinal infection: An infection that occurs when a micro-organism or its toxic product affects the gastrointestinal tract (including the stomach and intestines) causing illness such as pain, vomiting, diarrhoea and other symptoms. Can usually be passed from person to person.

general practitioner (GP): A medical practitioner who provides primary comprehensive and continuing care to patients and their families in the community.

general private health insurance cover: Private health insurance for non-hospital medical services that are not covered by Medicare, such as dental, optical, physiotherapy, other therapies and ambulance. Also known as 'ancillary' or 'extras' insurance.

gestational age: Duration of pregnancy in completed weeks, calculated either from the date of the first day of a woman's last menstrual period to her baby's date of birth, or via ultrasound, or from clinical assessment during pregnancy, or from examination of the baby after birth.

gestational diabetes: A form of diabetes that is first diagnosed during pregnancy (gestation). It may disappear after pregnancy but signals a high risk of diabetes occurring later on in life. See also **diabetes (diabetes mellitus)**.

glycylated haemoglobin: A form of haemoglobin that is chemically linked to sugar. The linkage between glucose and haemoglobin A1c indicates the presence of excessive sugar in the blood stream which can be used to diagnose and monitor diabetes.

gonorrhoea: A common sexually transmissible infection caused by Neisseria gonorrhoeae bacteria. It is treatable; however, if left untreated, it can lead to serious illness. It is a notifiable disease.

gout: A disease brought on by excess uric acid in the blood, causing attacks of joint pain (most often in the big toe) and other problems.

gross domestic product (GDP): A statistic commonly used to indicate national wealth. It is the total market value of goods and services produced within a given period after deducting the cost of goods and services used up in the process of production but before deducting allowances for the consumption of fixed capital.

haemorrhage (bleeding): The escape of blood from a ruptured blood vessel, externally or internally.

haemorrhagic stroke: A type of stroke caused by the rupture and subsequent bleeding of an artery in the brain or its surroundings.

HbA1c: See **glycylated haemoglobin**.

health: The World Health Organization (WHO) defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

health and medical research: Research with a health socioeconomic objective, including the prevention of disease, maintenance of health and operation of the health system. It describes a wide range of research activities including laboratory research, public health, epidemiological studies, health services research, clinical research on patient samples as well as clinical trials. It can be conducted in a variety of settings, including tertiary institutions, private non-profit organisations, and government facilities, and is usually approved by a research governance or ethics body.

health indicator: See **indicator**.

Health Lens Analysis: A process used in Health in All Policies that outlines a series of steps used to apply to South Australian Strategic Plan targets by a range of government agencies.

health literacy: The ability of people to access, understand and apply information about health and the health care system so as to make decisions that relate to their health.

health outcome: A change in the health of an individual or population due wholly or partly to a preventive or clinical intervention.

health promotion: A broad term to describe activities that help communities and individuals increase control over their health behaviours. Health promotion focuses on addressing and preventing the root causes of ill health, rather than on treatment and cure.

health research: Research with a health socioeconomic objective, which is done in tertiary institutions, private non-profit organisations, and government facilities. It

excludes commercially oriented research that private business funds, the costs of which are assumed to be included in the prices charged for the goods and services (for example, medications that have been developed and/or supported by research activities).

health status: The overall level of health of an individual or population, taking into account aspects such as life expectancy, level of disability, levels of disease risk factors and so on.

health-adjusted life expectancy: The average number of years that a person at a specific age can expect to live in full health; that is, taking into account years lived in less than full health due to the health consequences of disease and/or injury.

hearing: The sense for perceiving sounds; includes regions within the brain where the signals are received and interpreted.

hearing loss: Any hearing threshold response (using audiometry—the testing of a person's ability to hear various sound frequencies) outside the normal range, to any sound stimuli, in either ear. Hearing loss in a population describes the number of people who have abnormal hearing. Hearing loss may affect one ear (unilateral) or both ears (bilateral).

heart attack: Life-threatening emergency that occurs when a vessel supplying blood to the heart muscle is suddenly blocked completely by a blood clot. The medical term commonly used for a heart attack is myocardial infarction. See also **cardiovascular disease/condition**.

heart failure: A condition that occurs when the heart functions less effectively in pumping blood around the body. It can result from a wide variety of diseases and conditions that can impair or overload the heart, such as heart attack, other conditions that damage the heart muscle directly (see **cardiomyopathy**), high blood pressure, or a damaged heart valve.

hepatitis: Inflammation of the liver, which can be due to certain viral infections, alcohol excess or a range of other causes.

high blood cholesterol: Total cholesterol levels above 5.5 mmol/L.

high blood pressure/hypertension: Definitions can vary but a well-accepted definition is from the World Health Organization: a systolic blood pressure of 140 mmHg or more or a diastolic blood pressure of 90 mmHg or more, or if [the person is] receiving medication for high blood pressure. See also **blood pressure**.

highest educational attainment: Derived from information on the highest year of school completed and level of highest non-school qualification. It can be used as a proxy measure of socioeconomic position. Classified using the ABS Australian Standard Classification of Education (ASCED).

HIV: Human Immunodeficiency Virus

homelessness: There is no single definition of homelessness.

The Specialist Homelessness Services Collection defines a person as homeless if they are living in either:

- non-conventional accommodation or sleeping rough (such as living on the street)
- short-term or emergency accommodation due to a lack of other options (such as living temporarily with friends and relatives).

The Australian Bureau of Statistics (ABS) defines homelessness, for the purposes of the Census of Population and Housing, as the lack of one or more of the elements that represent home. According to the ABS, when a person does not have suitable accommodation alternatives they are considered homeless if their current living arrangement:

- is in a dwelling that is inadequate
- has no tenure, or if their initial tenure is short and not extendable
- does not allow them to have control of and access to space for social relations.

hospital-acquired complications: A complication for which clinical action may reduce (but not necessarily eliminate) the risk of its occurring—for example, selected infections or pressure injuries

hospital non-specialist: A subset of medical practitioners that includes doctors in training as interns and resident medical officers, career medical officers, hospital medical officers and other salaried hospital doctors who are not specialists or in recognised training programs to become specialists.

hospital private health insurance cover: Private insurance cover for the cost of in-hospital treatment by medical practitioners, and hospital costs such as accommodation and theatre fees.

hospital services: Services provided to a patient who is receiving admitted patient services or non-admitted patient services in a hospital.

hospitalisation: Synonymous with admission and separation; that is, an episode of hospital care that starts with the formal admission process and ends with the formal separation process. An episode of care can be completed by the patient's being discharged, being transferred to another hospital or care facility, or dying, or by a portion of a hospital stay starting or ending in a change of type of care (for example, from acute to rehabilitation).

household: A group of two or more related or unrelated people who usually live in the same dwelling, and who make common provision for food or other essentials for living; or a single person living in a dwelling who makes provision for his or her own food and other essentials for living, without combining with any other person.

housing adequacy: A measure to assess whether a dwelling is overcrowded. The number of bedrooms a dwelling should have to provide freedom from crowding is determined by the Canadian National Occupancy Standard. This standard assesses bedroom requirements based on the following criteria:

- there should be no more than 2 people per bedroom
- children aged under 5 of different sexes may reasonably share a bedroom
- children aged 5 and over of opposite sex should have separate bedrooms
- children aged under 18 and of the same sex may reasonably share a bedroom
- single household members aged 18 and over should have a separate bedroom, as should parents or couples.

housing tenure: Describes whether a household rents or owns an occupied dwelling, or whether it is occupied under another arrangement.

human immunodeficiency virus (HIV): A virus that damages the immune system and makes it harder for a person to fight infection. There is no cure for HIV but there are treatments available to stop its progression.

Human papillomavirus (HPV): A virus, a virus that affects both males and females. There are around 100 types of HPV, with around 40 types known as 'genital HPV', which are contracted through sexual contact. Currently, 15 types of HPV are recognised as being associated with cervical cancer, the most common of which are types 16, 18, and 45. Persistent infection with oncogenic (cancer causing) HPV types can lead to cervical cancer, whereas infection with non-oncogenic types of HPV can cause genital warts.

hypertension: See **high blood pressure/hypertension**.

illicit drugs: Illegal drugs, drugs and volatile substances used illicitly, and pharmaceuticals used for non-medical purposes.

illness: A state of feeling unwell, although the term is also often used synonymously with disease.

imaging: See **diagnostic imaging**.

immunisation: A procedure designed to induce immunity against infection by using an antigen to stimulate the body to produce its own antibodies. See also **vaccination**.

immunochemical faecal occult blood test (iFOBT): A test used to detect tiny traces of blood in a persons' faeces that may be a sign of bowel cancer. The iFOBT is a central part of Australia's National Bowel Cancer Screening Program.

impaired fasting blood glucose: Blood glucose levels between 6.1 to 6.9 mmol/L, which is above normal but less than diabetes levels.

impaired glucose regulation: Condition in which blood glucose levels are higher than normal but less than required for a diagnosis of diabetes, but which signal an increased risk of developing type 2 diabetes.

impairment: Any loss or abnormality of psychological, physiological or anatomical structure or function.

incidence: The number of new cases (of an illness or event, and so on) occurring during a given period. Compare with prevalence.

Index of Relative Socio-Economic Disadvantage (IRSD): One of the set of Socio-Economic Indexes for Areas for ranking the average socioeconomic conditions of the population in an area. It summarises attributes of the population such as low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations.

Index of Relative Socio-economic Advantage and Disadvantage (IRSAD): 1 of 4 Socio-Economic Indexes for Areas (SEIFA) compiled by the ABS. The IRSAD has been used in this report to indicate socioeconomic position for five groups (quintiles)—from the most disadvantaged (worst off or lowest socioeconomic area) to the most advantaged (best off or highest socioeconomic area).

indicator: Aa key statistical measure selected to help describe (indicate) a situation concisely so as to track change, progress and performance; and to act as a guide for decision making.

Indigenous: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander. See also **Aboriginal or Torres Strait Islander**.

infant: A child aged under 1 year.

Infectious disease: Disease or illness caused by infectious organisms or their toxic products. The disease may be passed directly or indirectly to humans through contact with other humans, animals or other environments where the organism is found. Also referred to as an communicable disease.

inflammation: Local response to injury or infection, marked by local redness, heat, swelling and pain. Can also occur when there is no clear external cause and the body reacts against itself, as in auto-immune diseases.

influenza (flu): An acute contagious viral respiratory infection marked by fever, fatigue, cough, muscle aches, headache and sore throat.

injury cases: Estimated as the number of injury separations, less those records where the mode of admission was 'Admitted patient transferred from another hospital'. These transfers are omitted to reduce over-counting.

instrumental delivery: Vaginal delivery using forceps or vacuum extraction. See also **instrumental birth**.

instrumental birth: Vaginal birth using forceps or vacuum extraction. See also **instrumental delivery**.

insulin: Hormone produced by the pancreas which regulates the body's energy sources, most notably the sugar glucose. It is an injectable agent that helps lower blood glucose levels by moving glucose into cells to be used as energy.

intentional self-harm: Includes attempts to suicide, as well as cases where people have intentionally hurt themselves, but not necessarily with the intention of suicide (e.g. acts of self-mutilation).

The Intergovernmental Panel on Climate Change (IPCC): The United Nations body for assessing the science related to climate change.

International Classification of Diseases (ICD): The World Health Organization's internationally accepted classification of death and disease. The 10th revision (ICD-10) is currently in use. The Australian modification of the ICD-10 (ICD-10-AM) is used for diagnoses and procedures recorded for patients admitted to hospitals.

International Statistical Classification of Diseases and Related Health Problems (ICD): The World Health Organization's internationally accepted classification of death and disease. The Tenth Revision (ICD-10) is currently in use. The ICD-10-AM is the Australian Modification of the ICD-10; it is used for diagnoses and procedures recorded for patients admitted to hospitals.

interoperability: The ability of different information systems, devices and applications ('systems') to access, exchange, integrate and cooperatively use data in a coordinated manner.

intervention (for health): Any action taken by society or an individual that 'steps in' (intervenes) to improve health, such as medical treatment and preventive campaigns.

intimate partner violence: A set of violent behaviours between current or former intimate partners. See also **domestic violence**.

ischaemia: Reduced or blocked blood supply. See also **ischaemic heart disease**.

ischaemic heart disease: See **heart attack** and **angina**. Also known as coronary heart disease. See also **ischaemia**.

Ischaemic stroke: A type of stroke due to a reduced or blocked supply of blood in the brain. Also known as cerebral infarction.

juvenile arthritis: Inflammatory arthritis in children that begins before their 16th birthday and lasts at least 6 weeks. Also known as juvenile idiopathic arthritis.

Kessler Psychological Distress Scale—10 items (Kessler-10; K10): A survey device that is used to measure non-specific psychological distress in people. It uses 10 questions about negative emotional states that participants in the survey may have had in the 4 weeks leading up to their interview. The designers recommend using only for people aged 18 and over.

kidney replacement therapy: Having a functional kidney transplant or receiving regular dialysis.

kidney transplant: A procedure whereby a healthy kidney is taken from one person and surgically placed into someone with end-stage kidney disease. The kidney can come from a live or deceased donor.

labour force: People who are employed or unemployed (not employed but actively looking for work). Also known as the workforce.

life expectancy: An indication of how long a person can expect to live, depending on the age they have already reached. Technically, it is the number of years of life left to a

person at a particular age if death rates do not change. The most commonly used measure is life expectancy at birth.

lifetime risk (alcohol): The accumulated risk from drinking either on many drinking occasions, or on a regular (for example, daily) basis over a lifetime. The lifetime risk of harm from alcohol-related disease or injury increases with the amount consumed. For healthy men and women, drinking no more than 2 standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury

linked disease: A disease or condition on the causal pathway of the risk factor, and therefore more likely to develop if exposed to the risk.

lipids: Fatty substances, including cholesterol and triglycerides, that are in blood and body tissues.

live birth (live born): The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life (such as the beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles), whether or not the umbilical cord has been cut or the placenta is attached; each product of such birth is considered live born (WHO definition).

Local Health Network: Corporations within defined geographical regions, which have responsibility for managing public hospitals and health institutions in that region, in accordance with the National Health Reform Agreement.

long-term condition: A term used in the Australian Bureau of Statistics National Health Surveys to describe a health condition that has lasted, or is expected to last, at least 6 months. See also **chronic diseases/conditions**.

low birthweight: Weight of a baby at birth that is less than 2,500 grams.

low income household: A household with an equivalised disposable household income (that is, after-tax income, adjusted for the number of people in the household) that is less than 50% of the national median.

major burns: Burns of any depth that involve more than 20 percent of the total body surface for an adult or more than 10 percent of the total body surface for a child.

malignant: A tumour with the capacity to spread to surrounding tissue or to other sites in the body.

mammogram: An X-ray of the breast. It may be used to assess a breast lump or as a screening test in women with no evidence of cancer.

mandate: An official order.

margin of error: The largest possible difference (due to sampling error) that could exist between the estimate and what would have been produced had all persons been included in the survey, at a given level of confidence (commonly 95%). It is useful for understanding and comparing the accuracy of proportion estimates. Equivalent to the width of a confidence interval.

maternal age: Mother's age in completed years at the birth of her baby.

maternity: A mother's period close to and including childbirth.

measles: A highly contagious infection, usually of children, that causes flu-like symptoms, fever, a typical rash and sometimes serious secondary problems such as brain damage. It is preventable by vaccination.

median: The midpoint of a list of observations that have been ranked from the smallest to the largest.

median age: The age point at which half the population is older than that age and half is younger than that age.

medical specialist: A doctor who has completed advanced education and clinical training in a specific area of medicine.

Medicare: A national, government-funded scheme that subsidises the cost of personal medical services for all Australians and aims to help them afford medical care. The Medicare Benefits Schedule (MBS) is the listing of the Medicare services subsidised by the Australian Government. The schedule is part of the wider Medicare Benefits Scheme (Medicare).

Medicare levy: A 2% tax on taxable income charged to fund Medicare. The Medicare levy is reduced if taxable income is below a certain threshold.

Medicare levy surcharge: A levy paid by Australian taxpayers who do not have private hospital cover and who earn above a certain income.

medications: Benefit-paid pharmaceuticals and other medications.

melanoma: A cancer of the body's cells that contain pigment (melanin), mainly affecting the skin. Survival rates are very high for those whose melanoma is detected and removed early, but low if not.

mental illness: Disturbances of mood or thought that can affect behaviour and distress the person or those around them, so that the person has trouble functioning normally.

mental illness (or mental disorders): Disturbances of mood or thought that can affect behaviour and distress the person or those around them, so that the person has trouble functioning normally. They include anxiety disorders, depression and schizophrenia.

mesothelioma: An aggressive form of cancer occurring in the mesothelium—the protective lining of the body cavities and internal organs, such as the lungs, heart and bowel.

metadata: Information about how data are defined, structured and represented. It makes data files meaningful by describing the information captured in data, and how it is measured and represented.

metformin: A medication that lowers blood glucose levels by reducing the amount of stored glucose released by the liver, slowing the absorption of glucose from the

intestine, and helping the body to become more sensitive to insulin so that it works better.

midwife: A person, typically a woman, who is trained to help women in childbirth.

mild or moderate core activity limitation: The limitation of a person who needs no help but has difficulty with core activities (moderate) or has no difficulty (mild) with core activities, but uses aids or equipment, or has one or more of the following restrictions:

- cannot easily walk 200 metres
- cannot walk up and down stairs without a handrail
- cannot easily bend down to pick up an object from the floor
- cannot use public transport
- can use public transport but needs help or supervision
- needs no help or supervision but has difficulty using public transport.

mobile health: The delivery of health care services via mobile communication devices.

moderate physical activity: Physical activity at a level that causes the heart to beat faster, accompanied by some shortness of breath, but during which a person can still talk comfortably.

monitoring (of health): A process of keeping a regular and close watch over important aspects of the public's health and health services through various measurements, and then regularly reporting on the situation, so that the health system and society more generally can plan and respond accordingly. The term is often used interchangeably with surveillance, although surveillance may imply more urgent watching and reporting, such as the surveillance of infectious diseases and their epidemics. Monitoring can also be applied to individuals, such as hospital care where a person's condition is closely assessed over time.

mood (affective) disorders: A set of psychiatric disorders, also called mood disorders. The main types of affective disorders are depression, bipolar disorder, and anxiety disorder. Symptoms vary by individual and can range from mild to severe.

morbidity: The ill health of an individual and levels of ill health in a population or group.

mortality: Number or rate of deaths in a population during a given time period.

multimorbidity: The presence of two or more chronic diseases/conditions in a person at the same time. Compare with comorbidity.

multiple causes of death: All the causes listed on the Medical Certificate of Cause of Death. These include the underlying cause of death and all associated cause(s) of death. See also **cause(s) of death**.

musculoskeletal: A term that relates to the muscles, joints and bones.

musculoskeletal conditions: Disorders that affect the bones, muscles and joints, such as back pain and problems, juvenile arthritis, osteoarthritis, osteopenia, osteoporosis and rheumatoid arthritis.

My Health Record: An online platform for storing a person's health information, including their Medicare claims history, hospital discharge information, diagnostic imaging reports, and details of allergies and medications.

natural environment: A setting that includes all vegetation and animal species (including micro-organisms), habitats and landscapes on earth, but excludes aspects of the environment that result from human activities. The natural environment includes air, water and climate.

neonatal death: Death of a liveborn baby within 28 days of birth.

neonatal mortality rate: Number of neonatal deaths per 1,000 live births.

neurology: A branch of medicine concerned especially with the structure, function and diseases of the nervous system.

never smoker: A person who does not smoke now and has smoked fewer than 100 cigarettes or the equivalent tobacco in his or her lifetime.

non-admitted patient: A patient who receives care from a recognised non-admitted patient service/clinic of a hospital, including emergency departments and outpatient clinics.

non-fatal burden: The quantified impact on a population of ill health due to disease or injury. Measured as years lived with disability (YLD), which is also sometimes referred to as years of healthy life lost due to disability.

non-hospital medical services: Medical services delivered to patients who are not admitted patients.

non-Indigenous: People who have declared that they are not of Aboriginal or Torres Strait Islander descent. Compare with Other Australians.

non-medical use: The use of drugs either alone or with other drugs to induce or enhance a drug experience for performance enhancement or cosmetic purposes (this includes pain-killers/analgesics, tranquillisers/sleeping pills, steroids and meth/amphetamines and other opioids such as morphine or pethidine).

non-school qualification: An educational qualification other than that of pre-primary, primary or secondary education. Non-school qualifications comprise a Bachelor degree; a Master degree; a Doctorate; a Diploma; a Graduate Diploma; an Advanced Diploma; a Certificate I, II, III and IV (trade certificates); and a Graduate Certificate.

non-smoker: never smoked or an ex-smoker.

notifiable disease: A group of communicable diseases that are reported to state and territory health departments, as required by legislation. The information enables public health responses and the monitoring of disease activity.

nutrition: The intake of food, considered in relation to the body's dietary needs.

obesity: Marked degree of overweight, defined for population studies as body mass index of 30 or over, calculated from the patient's height and weight.

obstetrics: The branch of medicine and surgery concerned with childbirth and midwifery.

obstetric trauma: Refers to the tearing of perineum during vaginal delivery of a child. These tears can extend to the perineal muscles and bowel wall, resulting in major surgery. These types of tears are not possible to prevent in all cases, but can be reduced by employing appropriate labour management and high quality obstetric care. Hence, the proportion of deliveries involving higher degree lacerations is a useful indicator of the quality of obstetric care.

occupational disease (work-related disease): Employment or work-related diseases which are the result of repeated or long-term exposure to agent(s) or event(s) where there was a long latency period.

occupational exposures and hazards: Chemical, biological, psychosocial, physical and other factors in the workplace that can potentially cause harm.

occupational injury (work-related injury): Employment or work-related injuries which are the result of a traumatic event occurring where there was a short or no latency period. It includes injuries which are the result of a single exposure to an agent causing an acute toxic effect.

occupational lung diseases: Diseases that result from breathing in harmful dusts or fumes, such as silica, asbestos and coal dust. This exposure typically occurs in the workplace. Pneumoconiosis, or scarring of the lung tissue caused by inhaled dust, is one of the most common forms of occupational lung disease.

opiate/opioid substitution treatment (OST): The provision to opioid drug users of a prescription medicine that replaces their drug of choice (for example, heroin) and helps them to manage their addiction. This medicine is usually supplied in a clinically supervised setting. OST is also called opioid replacement therapy or maintenance therapy. The three medicines most commonly used as OST in Australia are methadone, buprenorphine and buprenorphine-naloxone.

opioid: A chemical substance that has a morphine-type action in the body. Opioids are most commonly used for pain relief, but they are addictive and can lead to drug dependence.

opioid pharmacotherapy treatment: Opioid pharmacotherapy treatment is one of the main treatment types used for opioid drug dependence and involves replacing the opioid drug of dependence with a legally obtained, longer-lasting opioid that is taken orally.

opioid substitution therapy (OST): The provision to opioid drug users of a prescription medicine that replaces their drug of choice (for example, heroin) and helps them to manage their addiction. This medicine is usually supplied in a clinically supervised setting. OST is also called opioid replacement therapy or maintenance therapy. The three medicines most commonly used as OST in Australia are methadone, buprenorphine and buprenorphine-naloxone.

optometry: The practice of primary eye care, including testing for visual acuity and prescribing treatments for eye disorders.

oral health: The health of the mouth, tongue and oral cavity; the absence of active disease in the mouth.

Organisation for Economic Co-operation and Development (OECD): An organisation of 36 countries, including Australia, that are mostly developed and some emerging (such as Mexico, Chile and Turkey). The organisation's aim is to promote policies that will improve the economic and social wellbeing of people around the world.

osteoarthritis: A chronic and common form of arthritis, affecting mostly the spine, hips, knees and hands. It first appears from the age of about 30 and is more common and severe with increasing age.

osteopenia: A condition when bone mineral density is lower than normal but not low enough to be classified as osteoporosis.

osteoporosis: A condition that causes bones to become thin, weak and fragile, such that even a minor bump or accident can break a bone.

Other Australians: People who have declared that they are not of Aboriginal or Torres Strait Islander descent, and people whose Indigenous status is unknown. Compare with non-Indigenous.

other diabetes: A name for less common diabetes resulting from a range of different health conditions or circumstances.

other health practitioner services: Services that health practitioners (other than doctors and dentists) provide. These other practitioners include, but are not limited to, audiologists, chiropractors, dieticians, homeopaths, naturopaths, occupational therapists, optometrists, physiotherapists, podiatrists, practice nurses, practitioners of Chinese medicine and other forms of traditional medicine, and speech therapists.

other medications: Pharmaceuticals for which no Pharmaceutical Benefits Scheme (PBS) or Repatriation Pharmaceutical Benefits Scheme (RPBS) benefit was paid. They include:

- pharmaceuticals listed in the PBS or RPBS, the total costs of which are equal to, or less than, the statutory patient contribution for the class of patient (under co-payment pharmaceuticals)

- pharmaceuticals dispensed through private prescriptions that do not fulfil the criteria for payment of benefit under the PBS or RPBS

- over-the-counter medications, including pharmacy-only medications, aspirin, cough and cold medicines, vitamins and minerals, herbal and other complementary medications, and various medical non-durables, such as condoms, adhesive and non-adhesive bandages.

otitis media: All forms of inflammation and infection of the middle ear. Active inflammation or infection is nearly always associated with a middle ear effusion (fluid in the middle ear space).

outcome (health outcome): A health-related change due to a preventive or clinical intervention or service. (The intervention may be single or multiple, and the outcome may relate to a person, group or population, or be partly or wholly due to the intervention.)

out-of-pocket costs/expenditure: The total costs incurred by individuals for health care services over and above any refunds from Medicare and private health insurance funds.

out-of-pocket costs/spending: The total costs incurred by individuals for health care services over and above any refunds from Medicare and private health insurance funds.

overnight hospitalisation: An admitted patient who received hospital treatment for a minimum of 1 night (that is, admitted to, and has a separation from, hospital on different dates).

over-the-counter medicines: Medicine that one can buy without a prescription from a pharmacy or retail outlet.

overweight: Defined for the purpose of population studies as a body mass index of 25 or over. See also **obesity**.

overweight but not obese: Defined for the purpose of population studies as a body mass index between 25 and less than 30.

palliative care: Treatment given primarily to control pain or other symptoms. Consequent benefits of the treatment are considered secondary contributions to quality of life.

Pap test: See **Papanicolaou smear (Pap smear)**.

Papanicolaou smear (Pap smear): A procedure to detect cancer and precancerous conditions of the female genital tract, which is the screening test of the National Cervical Screening Program. During a Pap test, cells are collected from the transformation zone of the cervix—the area of the cervix where the squamous cells from the outer opening of the cervix and glandular cells from the endocervical canal meet. This is the site where most cervical abnormalities and cancers are detected. For conventional cytology, these cells are transferred onto a slide, and sent to a pathology laboratory for assessment. Collected cells are then examined under a microscope to look for abnormalities.

parricide: A homicide where a child kills a parent or step-parent.

pathology: A general term for the study of disease, but often used more specifically to describe diagnostic services that examine specimens, such as samples of blood or tissue.

patient days: The number of full or partial days of stay for patients who were admitted to hospital for an episode of care and who underwent separation during the reporting

period. A patient who is admitted and separated on the same day is allocated 1 patient day.

patient transport services: The services of organisations primarily engaged in transporting patients by ground or air—along with health (or medical) care. These services are often provided for a medical emergency, but are not restricted to emergencies. The vehicles are equipped with lifesaving equipment operated by medically trained personnel.

patient-centred care: An approach to health care which places the patient at the centre of the care model, with an emphasis on collaboration between the patient and health-care providers when making decisions about their health and treatment approaches.

Patient Reported Experience Measures (PREMs): Used to obtain patients' views and observations on aspects of health care services they have received. This includes their views on the accessibility and physical environment of services (for example, waiting times and the cleanliness of consultation rooms and waiting spaces) and aspects of the patient–clinician interaction (such as whether the clinician explained procedures clearly or responded to questions in a way that they could understand).

Patient Reported Outcome Measures (PROMs): Used to obtain information from patients on their health status, usually using standardised and validated questionnaires. They measure aspects such as overall health and wellbeing (or 'health-related quality of life'), the severity of symptoms such as pain, measures of daily functioning (activities required for self-care and to support social interactions) and psychological symptoms.

peer worker: A person employed (or engaged via contract), either part time or full time, on the basis of their lived experience, to support others experiencing a similar situation.

perinatal: Describes something that pertains to, or that occurred in, the period shortly before or after birth (usually up to 28 days after).

perinatal death: A fetal or neonatal death of at least 20 weeks gestation or at least 400 grams birthweight.

peripheral vascular disease: A disease characterised by pain in the extremities, often the legs, due to an inadequate blood supply to them.

personal stressors: Events or conditions that occur in a person's life that may adversely impact on the individual's or their family's health or wellbeing.

pertussis: A highly infectious bacterial disease of the air passages marked by explosive fits of coughing and often a whooping sound on breathing in. It is preventable by vaccination. Also known as whooping cough.

Pharmaceutical Benefits Scheme (PBS): A national, government-funded scheme that subsidises the cost of a wide range of pharmaceutical drugs for all Australians to help them afford standard medications. The Schedule of Pharmaceutical Benefits (schedule) lists all the medicinal products available under the PBS and explains the uses for which they can be subsidised.

pharmacotherapy: The treatment of disease and illnesses using pharmaceutical drugs.

physical therapy: The treatment or management of physical disability, malfunction, or pain using therapeutic exercises, physical modalities such as massage and hydrotherapy, assistive devices, and patient education and training. Often referred to as physiotherapy.

physical activity: Australia's Physical Activity and Sedentary Behaviour Guidelines (2014) recommend that:

- Young people (13-17 years) accumulate at least 60 minutes of moderate to vigorous physical activity everyday, from a variety of activities including some vigorous.

- Adults (18-64 years) should be active most days of the week, accumulate 150 to 300 minutes moderate intensity physical activity or 75 to 150 minutes of vigorous intensity physical activity (or an equivalent combination each week), and do muscle strengthening activities on at least two days each week.

- Older Australians (65 years and over) should accumulate at least 30 minutes of moderate intensity physical activity on most, preferably all, days.

PM2.5: Atmospheric particulate matter (PM) that have a diameter of less than 2.5 micrometres (0.0025millimetres).

pneumonia: Inflammation of the lungs as a response to infection by bacteria or viruses. The air sacs become flooded with fluid, and inflammatory cells and affected areas of the lung become solid. Pneumonia is often quite rapid in onset and marked by a high fever, headache, cough, chest pain and shortness of breath.

population health: Typically, the organised response by society to protect and promote health, and to prevent illness, injury and disability. Population health activities generally focus on:

- prevention, promotion and protection rather than on treatment

- populations rather than on individuals

- the factors and behaviours that cause illness.

It can also refer to the health of particular subpopulations, and comparisons of the health of different populations.

post-traumatic stress disorder (PTSD): The development of a set of reactions in people who have experienced a traumatic event that might have threatened their life or safety, or others around them. Examples of traumatic events can include war or torture, serious accidents, physical or sexual assault, or disasters. A person who has PTSD can experience feelings of helplessness, horror or intense fear.

potentially avoidable deaths: Deaths among people younger than age 75 that are avoidable in the context of the present health care system. They include deaths from conditions that are potentially preventable through individualised care and/or treatable through existing primary or hospital care. They are a subset of premature deaths. The rate of potentially avoidable deaths in Australia is used as an indicator of the health system's effectiveness. Potentially avoidable deaths are classified using nationally agreed definitions. (A revised definition was adopted in the National Healthcare

Agreement 2015 leading to differences in the counts and rates of potentially avoidable deaths published previously.)

potentially preventable hospitalisations (PPHs): Hospital separations for a specified range of conditions where hospitalisation is considered to be largely preventable if timely and adequate care had been provided through population health services, primary care and outpatient services. The PPH conditions are classified as vaccine preventable, chronic and acute. Respective examples include influenza and pneumonia, diabetes complications and COPD, and dental and kidney conditions. The rate of PPHs is currently being used as an indicator of the effectiveness of a large part of the health system, other than hospital inpatient treatment.

practising doctors: Medically qualified physicians who provide services to patients. Does not include students who have not graduated, unemployed or retired doctors, those working outside the country, dentists, stomatologists, dental or maxillofacial surgeons.

practising nurses: Professional nurses enrolled to practice in a particular country. Excludes those who are students, those who are unemployed retired or no longer practicing, and midwives unless they work most of the time as nurses.

pre-eclampsia: A condition that complicates pregnancy and is characterised by high blood pressure, fluid retention and protein in the urine. The placental function may be compromised.

Pre-Exposure Prophylaxis (PrEP): An anti-retroviral treatment taken daily to prevent HIV infection in people who do not have HIV but are at medium or high risk of being infected.

premature deaths (or premature mortality): Deaths that occur at a younger age than a selected cut-off. The age below which deaths are considered premature can vary depending on the purpose of the analysis and the population under investigation. In this report, deaths among people aged under 75 are considered premature.

prescription pharmaceuticals: Pharmaceutical drugs available only on the prescription of a registered medical or dental practitioner and available only from pharmacies.

pre-term birth: Birth before 37 completed weeks of gestation.

prevalence: The number or proportion (of cases, instances, and so forth) in a population at a given time. For example, in relation to cancer, refers to the number of people alive who had been diagnosed with cancer in a prescribed period (usually 1, 5, 10 or 26 years). Compare with incidence.

prevention (of ill health or injury): Action to reduce or eliminate the onset, causes, complications or recurrence of ill health or injury.

primary health care: These are services delivered in many community settings, such as general practices, community health centres, Aboriginal health services and allied health practices (for example, physiotherapy, dietetic and chiropractic practices) and come under numerous funding arrangements.

Primary Health Network: Primary Health Networks were established on 1 July 2015. These networks are intended to play a critical role in connecting health services across local communities so that patients, particularly those needing coordinated care, have the best access to a range of health care providers, including practitioners, community health services and hospitals. Primary Health Networks work directly with general practitioners, other primary care providers, secondary care providers and hospitals.

principal diagnosis: The diagnosis established after study to be chiefly responsible for occasioning an episode of patient care (hospitalisation), an episode of residential care or an attendance at the health care establishment. Diagnoses are recorded using the relevant edition of the International statistical classification of diseases and related health problems, 10th revision, Australian modification (ICD-10-AM).

principal drug of concern: The main substance that led the client to seek treatment from an alcohol and drug treatment agency.

prisoner: An adult aged 18 and over held in custody, whose confinement is the responsibility of a corrective services agency. Prisoners includes sentenced prisoners, and prisoners held in custody awaiting trial or sentencing (remandees). Juvenile offenders, people in psychiatric custody, police cell detainees, people held in immigration detention centres, or Australians held in overseas prisons, are not included. Prison entrants refer to those who are entering the prison. Prison dischargees are those who are in the process of being released from prison.

private hospital: A privately owned and operated institution, catering for patients who are treated by a doctor of their own choice. Patients are charged fees for accommodation and other services provided by the hospital and by relevant medical and allied health practitioners. The term includes acute care and psychiatric hospitals as well as private free-standing day hospital facilities.

private patient: A person admitted to a private hospital, or a person admitted to a public hospital who decides to choose the doctor(s) who will treat them or to have private ward accommodation—this means they will be charged for medical services, food and accommodation.

procedure: A clinical intervention that is surgical in nature, carries a procedural risk, carries an anaesthetic risk, and requires specialist training and/or special facilities or equipment available only in the acute-care setting.

protective factors: Factors that enhance the likelihood of positive outcomes and lessen the chance of negative consequences from exposure to risk.

psychological distress: Unpleasant feelings or emotions that affect a person's level of functioning and interfere with the activities of daily living. This distress can result in having negative views of the environment, others and oneself, and manifest as symptoms of mental illness, including anxiety and depression (see also **Kessler Psychological Distress Scale—10 items**).

psychosocial: Involving both psychological and social factors.

psychotic disorders: 'A diverse group of illnesses that have their origins in abnormal brain function and are characterised by fundamental distortions of thinking, perception and emotional response' (Slade et al. 2009).

public health: Activities aimed at benefiting a population, with an emphasis on prevention, protection and health promotion as distinct from treatment tailored to individuals with symptoms. Examples include the conduct of anti-smoking education campaigns, and screening for diseases such as cancer of the breast and cervix. See also **population health**.

public hospital: A hospital controlled by a state or territory health authority. In Australia, public hospitals offer free diagnostic services, treatment, care and accommodation to all eligible patients.

public hospital services expenditure: Services provided by public hospitals from the balance of public hospital expenditure remaining after costs of community health services, public health services, non-admitted dental services, patient transport services, and health research activities conducted by public hospitals have been removed and reallocated to their own expenditure categories.

public patients: Patients who are admitted to hospital at no charge and are mostly funded through public sector health or hospital service budgets.

pulmonary embolism (PE): A blockage in the arteries that supply blood to the lungs caused by one or more blood clots. A blood clot can form in the veins of the legs, pelvis, abdomen (tummy) or in the heart. The clot can then dislodge from where it first forms and travel in the blood stream to lodge in one of the pulmonary arteries, the arteries that send blood to the lungs.

quality: The degree to which health services for individuals and populations increase the likelihood of desired health outcomes, and are consistent with current professional knowledge.

quintile: A group derived by ranking the population or area according to specified criteria and dividing it into five equal parts. The term can also mean the cut-points that make these divisions—that is, the 20th, 40th, 60th and 80th percentiles—but the first use is the more common one. Commonly used to describe socioeconomic areas based on socioeconomic position.

rate: A rate is one number (the numerator) divided by another number (the denominator). The numerator is commonly the number of events in a specified time. The denominator is the population 'at risk' of the event. Rates (crude, age-specific and age-standardised) are generally multiplied by a number such as 100,000 to create whole numbers.

recent user (alcohol and other drugs): Someone who has used in the last 12 months.

recurrent expenditure: Spending (expenditure) on goods and services that are used during the year (for example, salaries). Compare with capital expenditure.

recurrent spending: Spending on health goods and services that are consumed within a year, and that does not result in the creation or acquisition of fixed assets.

referred medical services: Non-hospital medical services that are not classified as primary health care. See also **unreferred medical service**.

refugee: A person who is subject to persecution in their home country and in need of resettlement. The majority of individuals considered to be a refugee are identified by the United Nations High Commissioner for Refugees (UNHCR) and referred by the UNHCR to Australia.

relative income poverty: A situation where a family's income is low compared with that of other families. It is assessed by the proportion of households with an equivalised income that is less than 50% of the national median equivalised household income.

relative risk: This measure is derived by comparing two groups for their likelihood of an event. It is also called the risk ratio because it is the ratio of the risk in the 'exposed' population divided by the risk in the 'unexposed' population. It is also known as the rate ratio.

relative survival (cancer): A measure of the average survival experience of a population of people diagnosed with cancer, relative to the 'average' Australian of the same sex and age, at a specified interval after diagnosis.

remoteness areas: These regions are defined by the Australian Statistical Geographical Standard (ASGS) and based on the Accessibility/Remoteness Index of Australia which uses the road distance to goods and services (such as general practitioners, hospitals and specialist care) to measure relative accessibility of regions around Australia.

remoteness classification: Each state and territory is divided into several regions based on their relative accessibility to goods and services (such as to general practitioners, hospitals and specialist care) as measured by road distance. These regions are based on the Accessibility/Remoteness Index of Australia and defined as Remoteness Areas by either the Australian Standard Geographical Classification (ASGC) (before 2011) or the Australian Statistical Geographical Standard (ASGS) (from 2011 onwards) in each Census year. The five Remoteness Areas are *Major cities*, *Inner regional*, *Outer regional*, *Remote* and *Very remote*. See also **rural**.

renal disease: A general term for when the kidneys are damaged and do not function as they should.

Repatriation Pharmaceutical Benefits Scheme (RPBS): An Australian government scheme that provides a range of pharmaceuticals and wound dressings at a concessional rate for the treatment of eligible veterans, war widows/widowers, and their dependants.

respiratory condition: A chronic respiratory condition affecting the airways and characterised by symptoms such as wheezing, shortness of breath, chest tightness and cough. Conditions include asthma and chronic obstructive pulmonary disease (COPD)—which includes emphysema and chronic bronchitis.

restraint: The restriction of an individual's freedom of movement by physical or mechanical means.

restraint (mechanical): The application of devices (including belts, harnesses, manacles, sheets and straps) on a person's body to restrict his or her movement. This is to prevent the person from harming himself/herself or endangering others or to ensure the provision of essential medical treatment. It does not include the use of furniture (including beds with cot sides and chairs with tables fitted on their arms) that restricts the person's capacity to get off the furniture except where the devices are used solely for the purpose of restraining a person's freedom of movement. The use of a medical or surgical appliance for the proper treatment of physical disorder or injury is not considered mechanical restraint.

restraint (physical): The application by health care staff of 'hands-on' immobilisation or the physical restriction of a person to prevent the person from harming himself/herself or endangering others or to ensure the provision of essential medical treatment.

resuscitation of baby: Active measures taken shortly after birth to assist the baby's ventilation and heartbeat, or to treat depressed respiratory effort and to correct metabolic disturbances.

rheumatoid arthritis: A chronic, multisystem disease whose most prominent feature is joint inflammation and resulting damage, most often affecting the hand joints in symmetrical fashion.

risk: The probability of an event's occurring during a specified period of time.

risk factor: Any factor that represents a greater risk of a health disorder or other unwanted condition or event. Some risk factors are regarded as causes of disease; others are not necessarily so. Along with their opposites (protective factors), risk factors are known as determinants.

rural: Geographic areas outside urban areas such as towns and cities. In this report, rural and remote encompasses all areas outside Australia's major cities according to the remoteness classification of the Australian Statistical Geographic Standard. In many instances, the term 'rural and remote' is used interchangeably with the classification terms 'regional and remote'.

safety: The avoidance or reduction to acceptable limits of actual or potential harm from health care management or the environment in which health care is delivered.

safety and quality standards: A set of statements which describe the level of care consumers can expect from a health service. They aim to protect the public from harm and improve the quality of care provided.

same-day hospitalisation: A patient who is admitted to, and has a separation from, hospital on the same date.

screen time: Activities done in front of a screen, such as watching television, working on a computer, or playing video games.

screening (for health): A systematic method of detecting risk factors or suspicious abnormalities among people who are symptom free, so that health problems can be either prevented or followed up, diagnosed and treated as early as possible. Screening is usually done through special programs aimed at higher risk groups in the population. A variant of screening, often known as case-finding, is where clinicians opportunistically look for risk factors or abnormalities in people when seeing them for other reasons; for example, when many doctors routinely measure blood pressure in all patients consulting them.

seclusion: The confinement of the consumer at any time of the day or night alone in a room or area from which free exit is prevented.

self-assessed health status: Self-assessed health status is a commonly used measure of overall health which reflects a person's perception of his or her own health at a given point in time.

self-regulated: Where a health professionals accreditation process is managed by the professional association for that profession, rather than under the National Registration and Accreditation Scheme (NRAS) for health practitioners.

separation (from hospital): The formal process where a hospital records the completion of an episode of treatment and/or care for an admitted patient—in this report, described by the term hospitalisation.

service (Australian Defence Force): The three broad arms of the Australian Defence Force—the Navy, Army and Air Force.

severe or profound core activity limitation: The limitation of a person who needs help or supervision always (profound) or sometimes (severe) to perform activities that most people undertake at least daily—that is, the core activities of self-care, mobility and/or communication. See also **core activity limitation** and **disability**.

sexual violence: The occurrence, attempt or threat of sexual assault experienced by a person since the age of 15. Sexual violence can be perpetrated by partners in a domestic relationship, former partners, other people known to the victims, or strangers.

sexually transmissible infection: An infectious disease that can be passed from one person to another by sexual contact. Examples include chlamydia and gonorrhoea infections.

siblicide: A homicide where one sibling kills another sibling.

single-occasion risk (alcohol): A single-occasion risk, in the context of alcohol, is defined as the risk of alcohol-related injury arising from having a sequence of drinks without the blood alcohol concentration reaching zero in between them. The risk of an alcohol-related injury arising from a single occasion of drinking increases with the amount consumed. For healthy men and women, drinking no more than 4 standard drinks on a single occasion reduces the risk of alcohol-related injury from that occasion.

skeletal muscles: The most common type of muscle in the body, skeletal muscles are attached to bones by tendons, produce the movement of all body parts in relation to each other and can be voluntarily controlled.

smartphone: A mobile phone built on a mobile operating system, with more advanced computing capability and connectivity.

smartwatch: A mobile device, consisting of a package that includes a computer and display, attached to a bracelet.

smoker: Someone who reports smoking daily, weekly or less than weekly.

smoker status: Smoker status refers to the frequency of smoking of tobacco, including manufactured (packet) cigarettes, roll–your–own cigarettes, cigars and pipes, but excluding chewing tobacco, electronic cigarettes (and similar) and smoking of non–tobacco products.

Respondents to the National Health Survey were asked to describe smoking status at the time of interview, categorised as:

- **daily smoker:** a respondent who reported at the time of interview that they regularly smoked one or more cigarettes, cigars or pipes per day;

- **ex–smoker:** a respondent who reported that they did not currently smoke, but had regularly smoked daily, or had smoked at least 100 cigarettes, or smoked pipes, cigars, etc. at least 20 times in their lifetime; and

- **never smoked:** a respondent who reported they had never regularly smoked daily, and had smoked less than 100 cigarettes in their lifetime and had smoked pipes, cigars, etc. less than 20 times.

The 2019 National Drug Strategy Household Survey uses the following smoking definitions:

- **current smoker:** reported smoking daily, weekly or less than weekly at the time of the survey.

- **daily smoker:** reported smoking tobacco at least once a day (includes manufactured (packet) cigarettes, roll-your-own cigarettes, cigars or pipes). Excludes chewing tobacco, electronic cigarettes (and similar) and smoking of non-tobacco products.

- **ex-smoker**: a person who has smoked at least 100 cigarettes or equivalent tobacco in his or her lifetime, but does not smoke at all now.

- **never smoker:** a person who does not smoke now and has smoked fewer than 100 cigarettes or the equivalent tobacco in his or her lifetime.

- **non-smoker:** never smoked or an ex-smoker.

social capital: The institutions, relationships, voluntary activity, and communications that shape the quality and quantity of social interaction within a community.

social competence: A set of abilities that enable children to independently navigate their social world, to interact with peers and adults, to form friendships, and to understand the needs of others.

social determinants of health: The circumstances in which people are born, grow up, live, work and age, and the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies and politics.

social exclusion: A situation where people do not have the resources, opportunities and capabilities they need to learn, work, engage with or have a voice in their communities. Composite measures of social exclusion weight indicators such as income level, access to education, unemployment, poor English, health services and transport, and non-material aspects such as stigma and denial of rights. These measures are typically divided into three levels: marginal exclusion, deep exclusion and very deep exclusion.

socioeconomic areas: Based on the Index of Relative Socio-Economic Disadvantage, part of the Socio-Economic Indexes for Areas (SEIFA) created from Census data, which aims to represent the socioeconomic position of Australian communities and reflect the overall or average level of disadvantage of the population in an area.

Socio-Economic Indexes for Areas (SEIFA): A set of indexes, created from Census data, that aim to represent the socioeconomic position of Australian communities and identify areas of advantage and disadvantage. The index value reflects the overall or average level of disadvantage of the population of an area; it does not show how individuals living in the same area differ from each other in their socioeconomic group. This report uses the Index of Relative Socio-Economic Disadvantage.

socioeconomic position: An indication of how 'well off' a person or group is. In this report, socioeconomic position is mostly reported using the Socio-Economic Indexes for Areas. Two indices have been used—The Index of Relative Socio-Economic Disadvantage (IRSD) and the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD). In this report, the IRSD has been used to report socioeconomic position for five groups (quintiles)—from the most disadvantaged (worst off or lowest socioeconomic area) to the least disadvantaged (best off or highest socioeconomic area). The IRSAD has been used to report socioeconomic position for five groups (quintiles)—from the most disadvantaged (worst off or lowest socioeconomic area) to the most advantaged (best off or highest socioeconomic area).

solar ultraviolet (UV) radiation: High-energy rays from the sun which are invisible to the human eye. UV radiation is divided into three types according to wavelength (UVA, UVB and UVC). UVA, and to a lesser extent UVB, are not wholly absorbed by atmospheric ozone and therefore are of interest for human health.

specialist attendance: A specialist attendance usually required a referral from a general practitioner. A specialist attendance is a referred patient-doctor encounter (with Medicare funding benefits), such as a visit, consultation and attendance (including a

video conference) with a medical practitioner who has been recognised as a specialist or consultant physician for the purposes of Medicare benefits.

specialist homelessness services: Assistance provided by a specialist homelessness agency to a client aimed at responding to or preventing homelessness. Includes accommodation provision, assistance to sustain housing, domestic/family violence services, mental health services, family/relationship assistance, disability services, drug/alcohol counselling, legal/financial services, immigration/cultural services, other specialist services and general assistance and support.

specialist services: Services that support people with specific or complex health conditions and issues, who are generally referred by primary health care providers. They are often described as 'secondary' health care services. In many cases, a formal referral is required for an individual to be able to access the recommended specialist service.

stage: The extent of a cancer in the body. Staging is usually based on the size of the tumour, whether lymph nodes contain cancer, and whether the cancer has spread from the original site to other parts of the body.

standard drink (alcohol): A serve that contains 10 grams of alcohol (equivalent to 12.5 millilitres of alcohol). It is also referred to as a full serve.

***Staphylococcus aureus* bacteraemia (SAB):** An infection of the bloodstream. When associated with health care procedures, these infections are considered to be potentially preventable.

statistical significance: A statistical measure indicating how likely the observed difference or association is due to chance alone. Rate differences are deemed to be statistically significant when their confidence intervals do not overlap, since their difference is greater than what could be explained by chance.

stillbirth: See **fetal death (stillbirth)**.

stroke: An event that occurs when an artery supplying blood to the brain suddenly becomes blocked or bleeds. A stroke often causes paralysis of parts of the body normally controlled by that area of the brain, or speech problems and other symptoms. It is a major form of cerebrovascular disease.

substance misuse: Use of illicit drugs (illegal drugs, drugs and volatile substances used illicitly, and pharmaceuticals used for non-medical purposes).

substance use disorder: A disorder of harmful use and/or dependence on illicit or licit drugs, including alcohol, tobacco and prescription drugs.

suicidal ideation: Serious thoughts about ending one's own life.

suicidality: The collective term for suicidal ideation, suicide plans and suicide attempts.

suicide: An action to deliberately end one's own life.

syphilis (infectious): A sexually transmitted infection, which if untreated can cause irreversible damage. It is caused by Treponema pallidum bacteria. It is a notifiable disease.

telehealth: Health services delivered using information and communication technologies, such as videoconferencing.

telemedicine: The remote delivery of health care services, such as health assessments or consultations, over the telecommunications infrastructure.

thunderstorm asthma: Is the triggering of an asthma attack by environmental conditions directly caused by a local thunderstorm.

total burden: The sum of fatal burden (YLL) and non-fatal burden (YLD).

trachoma: An infectious disease of the eye caused by Chlamydia trachomatis. If left untreated, follicles form on the upper eyelids and grow larger until the granulations invade the cornea, eventually causing blindness.

trauma: A severe and often life-threatening injury that suddenly develops when the entire body or a part of it has been hit by a blunt object or due to sudden impact.

treatment episode: The period of contact between a client and a treatment provider or a team of providers. In the context of alcohol and other drug treatment, each treatment episode has 1 principal drug of concern and 1 main treatment type. If the principal drug or main treatment changes, a new episode is recorded.

treatment type: In the context of alcohol and other drug treatment, the type of activity that is used to treat the client's alcohol or other drug problem. Examples include assessment only, counselling, information and education only, pharmacotherapy, rehabilitation, support and case management only, and withdrawal management (detoxification).

triage category: A category used in the emergency departments of hospitals to indicate the urgency of a patient's need for medical and nursing care. Patients are triaged into 1 of 5 categories on the Australasian Triage Scale. The triage category is allocated by an experienced registered nurse or medical practitioner.

triglyceride: A compound made up of a single molecule of glycerol and three molecules of fatty acid. Triglycerides are the main constituents of natural fats and oils.

tumour: An abnormal growth of tissue. Can be benign (not a cancer) or malignant (a cancer).

type 1 diabetes: A form of diabetes mostly arising among children or younger adults and marked by a complete lack of insulin. Insulin replacement is needed for survival. See **diabetes (diabetes mellitus)**.

type 2 diabetes: The most common form of diabetes, occurring mostly in people aged 40 and over, and marked by reduced or less effective insulin. See **diabetes (diabetes mellitus)**.

underlying cause of death: The disease or injury that initiated the train of events leading directly to death, or the circumstances of the accident or violence that produced the fatal injury. See also **cause(s) of death** and **associated cause(s) of death**.

underweight: A category defined for population studies as a body mass index less than 18.5.

unreferred medical service: A medical service provided to a person by, or under the supervision of, a medical practitioner—being a service that has not been referred to that practitioner by another medical practitioner or person with referring rights. In this report, these are medical services that are classified as primary health care (see **referred medical services**).

Urban Heat Islands: Urban areas that are significantly warmer than surrounding rural or natural areas due to human activities and land uses.

vaccination: The process of administering a vaccine to a person to produce immunity against infection. See also **immunisation**.

vacuum extraction: A procedure to assist birth using traction or rotation on a suction cap applied to the baby's head.

vector-borne disease: A disease, parasite or infection transmitted from one host to another by a vector. The largest group of vectors are insects and other arthropods, most commonly mosquitoes, ticks, flies, lice and fleas. The abundance and distribution of vector populations (and hence the spread of vector-borne diseases) is closely intertwined with environmental conditions that encourage their survival.

vigorous physical activity: Physical activity at a level that causes the heart to beat a lot faster and shortness of breath that makes talking difficult between deep breaths.

walkability: A measure of how conducive an area is for walking.

wellbeing: A state of health, happiness and contentment. It can also be described as judging life positively and feeling good. For public health purposes, physical wellbeing (for example, feeling very healthy and full of energy) is also viewed as critical to overall wellbeing. Because wellbeing is subjective, it is typically measured with self-reports, but objective indicators (such as household income, unemployment levels and neighbourhood crime) can also be used.

whooping cough: See **pertussis**.

workforce: People who are employed or unemployed (not employed but actively looking for work). Also known as the labour force.

years lived with disability (YLD): A measure calculated as the prevalence of a condition, multiplied by a disability weight for that condition. YLD represent non-fatal burden.

years of life lost (YLL): For each new case, years of life lost equals the number of years between premature death and the standard life expectancy for the individual. YLL represent fatal burden.

years of potential life lost (YPLL): Years of life lost due to premature death, which is assumed to be any death between the ages of 1–78 inclusive. YPLL represent fatal burden.