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Deaths in Australia

Web report | Last updated: **11 Jul 2023** | Topic: Life expectancy & deaths | Media release

About

Deaths data are a vital measure of a population's health and provide information on patterns of diseases that cause death, by population groups and over time. Examining death patterns can help explain differences and changes in health status, evaluate health strategies, and guide planning and policy-making.

This web report presents updated data to 2021 on deaths, causes of death and life expectancy in Australia.

Cat. no: PHE 229

Findings from this report:

- In 2021, there were 171,469 deaths registered in Australia
- In 2021, the leading cause of death for males was coronary heart disease (12%)
- In 2021, the leading cause of death for females was dementia including Alzheimer's disease (13%)
- Over the period 1907 to 2021, the age-standardised death rate fell by 75% in Australia

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Summary

Life expectancy and causes of death is an Australia's health topic

- Burden of disease | 13 Dec 2022
- Cancer | 07 Jul 2022

On this page:

Looking at how many people die and what caused their death can provide vital information about the health of a population. Examining patterns and trends in deaths can help explain differences and changes in the health of a population, contribute to the evaluation of health strategies and interventions, and guide planning and policy-making.

In 2021, there were approximately 171,469 deaths in Australia (89,401 males; 82,068 females). Less than 1% of all deaths registered in Australia in 2021 occurred among children aged 0–4 years, while over two-thirds (67%) were among people aged 75 and over.

Deaths data

Causes of death are documented on death certificates by medical practitioners or coroners and coded by the Australian Bureau of Statistics (ABS) using the World Health Organization (WHO) International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10).

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

Leading causes of death presented on this page are based on the underlying cause of death, which is the disease or injury that began the train of events leading to death. The leading causes of death are those causes which account for the greatest number of deaths (or proportion of total deaths) in a specified population for a given period.

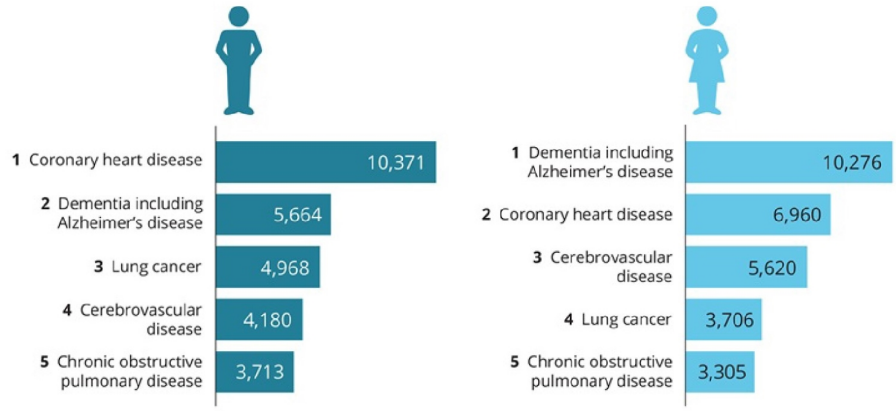
Most deaths, however, result from more than one contributing disease or condition. Analyses using associated causes of death may offer insight into the disease processes occurring at the end of life or for injury causes of death, the nature of the injury. Multiple causes of death statistics are based on both the underlying and associated causes of death.

See Technical notes for more information.

Leading causes of death by sex and age

In 2021, the leading cause of death for males was coronary heart disease, accounting for 10,371 (12%) deaths, followed by dementia including Alzheimer's disease (Figure 1). For females, dementia including Alzheimer's disease was the leading cause of death, accounting for 10,276 (13%) deaths, followed by coronary heart disease. Other diseases among the 5 leading causes of deaths for males and females were: lung cancer, cerebrovascular disease (which includes stroke), and chronic obstructive pulmonary disease (COPD).

Figure 1: Leading underlying causes of death in Australia, by sex, 2021



Source: AIHW National Mortality Database; Table S3.1.

As well as differences by sex, the leading causes of death vary by age (Figure 2). Among infants, most deaths in 2021 were due to perinatal and congenital conditions. Land transport accidents were the most common cause of death among children aged 1-14. Suicide was the leading cause of death among people aged 15-44.

Chronic diseases caused more deaths among older age groups. Coronary heart disease and lung cancer were the leading causes of death for people aged 45-74, while coronary heart disease and dementia including Alzheimer's disease were the leading causes for people aged 75 and over.

See Leading causes of death for more information.

Figure 2: Leading underlying causes of death in Australia, by age group, 2019-2021

Age group (years)	Rank 1st	2nd	3rd	4th	5th
Under 1	Perinatal and congenital conditions	Other ill-defined causes	Sudden infant death syndrome	Selected metabolic disorders	Accidental threats to breathing
1–14	Land transport accidents	Perinatal and congenital conditions	Brain cancer	Other ill-defined causes	Suicide
15–24	Suicide	Land transport accidents	Accidental poisoning	Other ill-defined causes	Assault
25–44	Suicide	Accidental poisoning	Land transport accidents	Coronary heart disease	Other ill-defined causes
45–64	Coronary heart disease	Lung cancer	Suicide	Colorectal cancer	Liver disease
65–74	Lung cancer	Coronary heart disease	Chronic obstructive pulmonary disease	Colorectal cancer	Cerebrovascular disease
75–84	Coronary heart disease	Dementia incl. Alzheimer's disease	Lung cancer	Cerebrovascular disease	Chronic obstructive pulmonary disease
85–94	Dementia incl. Alzheimer's disease	Coronary heart disease	Cerebrovascular disease	Chronic obstructive pulmonary disease	Diabetes
95+	Dementia incl. Alzheimer's disease	Coronary heart disease	Cerebrovascular disease	Heart failure	Influenza and pneumonia

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)); Respiratory failure of newborn (P28.5); Respiratory failure, unspecified (J96.9). AIHW General Record of Incidence of Mortality (GRIM) books are available for selected leading causes of death.
2. Heart failure refers to 'Heart failure and complications and ill-defined heart disease (I50-I51)'.
3. 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 Deaths due to intentional self-harm (suicide): Coding of suicide - external site opens in new window in the Methodology of Causes of Death, Australia, ABS.

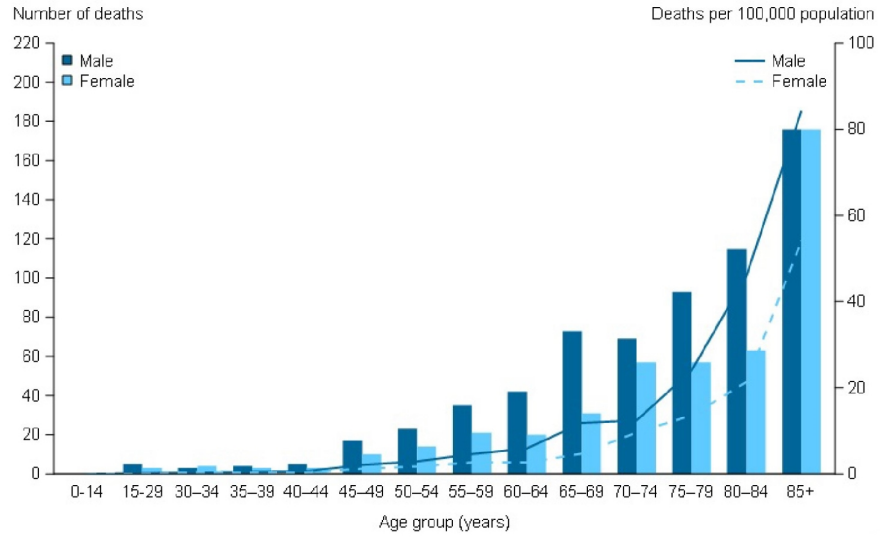
Source: AIHW National Mortality Database; Table S3.2.

Deaths due to COVID-19

In 2021, there were 1,122 deaths due to COVID-19 registered in Australia. The number of deaths due to COVID-19 in 2021 increased with increasing age and the majority (81%) of deaths occurred among people aged 65 and over. Almost all deaths due to COVID-19 occurred among people residing in New South Wales or Victoria (49.6% and 49.3% of all COVID-19 deaths in 2021, respectively). See COVID-19 deaths.

Males had a consistently higher number of COVID-19 deaths than females, and in some age groups the death rate for males was more than twice that of females (Figure 3).

Figure 3: Number of deaths and age-specific rates (per 100,000 population) in Australia due to COVID-19, by age and sex, 2021



Note: COVID-19 is coded to ICD-10 codes U07.1 (COVID-19, virus identified), U07.2 (COVID-19, virus not identified), U08.9 (Personal history of COVID-19, unspecified), U09, (Post COVID-19 condition, unspecified) or U10.9 (Multisystem inflammatory syndrome associated with COVID-19, unspecified). Only deaths where COVID-19 was the underlying cause of death are included. In 2021, they included codes U07.1 and U07.2.

Source: AIHW National Mortality Database; Table S4.1.

For the latest statistics on deaths due to COVID-19, see Australian Bureau of Statistics (ABS) reports Provisional Mortality Statistics - external site opens in new window and COVID-19 Mortality in Australia - external site opens in new window, and 'Chapter 1 The impact of a new disease: COVID-19 from 2020, 2021 and into 2022' in Australia's health 2022: data insights.

Trends in deaths over time

In Australia, death rates have continued to decline since at least the early 1900s. Between 1907 and 2021, the crude death rate decreased by 38% (41% for males and 34% for females). When accounting for changes in the population age structure over this period, the age-standardised death rate fell by 75% (73% for males and 77% for females). This was largely driven by the decline of infant and child deaths during this period; from 2,412 deaths per 100,000 children under 5 in 1907 to 77 per 100,000 in 2021 (decrease of 97%).

As in many other developed nations, Australia has experienced a 'health transition' during the 20th century (Beaglehole and Bonita 1997). While infectious diseases such as influenza and tuberculosis caused the most deaths in the early 1900s, from the 1930s onwards cardiovascular diseases and cancers were the leading causes of death. See also Changing patterns of mortality in Australia since 1900 in Australia's health 2022: data insights.

In the last decade, the 10 leading causes of death have generally remained the same, albeit with different rankings (Figure 4).

- In both 2011 and 2021, coronary heart disease was the leading cause of death for males. For females, the leading cause of death in 2011 was coronary heart disease, however in 2021 it was dementia including Alzheimer's disease.
- For both males and females, dementia including Alzheimer's disease increased in rank between 2011 and 2021.
- Deaths due to lung, prostate, and colorectal cancer decreased in ranking for males over this period. For females there was a decrease in ranking for deaths due to breast cancer, but no change for lung and colorectal cancer.

See Trends in deaths for more information.

Figure 4: Change in disease ranking and the proportion of all deaths for the leading 10 underlying causes of death in Australia, by sex, between 2011 and 2021

Rank	Males, 2011 Cause of death	Proportion (%)	Males, 2021 Cause of death	Proportion (%)
1	Coronary heart disease	15.6	Coronary heart disease	11.6
2	Lung cancer	6.6	Dementia including Alzheimer's disease	6.3
3	Cerebrovascular disease	5.9	Lung cancer	5.6
4	Prostate cancer	4.4	Cerebrovascular disease	4.7
5	Chronic obstructive pulmonary disease	4.3	Chronic obstructive pulmonary disease	4.2
6	Dementia including Alzheimer's disease	4.3	Prostate cancer	4.0
7	Colorectal cancer	3.7	Diabetes	3.3
8	Diabetes	2.9	Colorectal cancer	3.2
9	Suicide	2.4	Suicide	2.6
10	Heart failure and complications and ill-defined heart disease	1.9	Accidental falls	2.1

Rank	Females, 2011 Cause of death	Proportion (%)	Females, 2021 Cause of death	Proportion (%)
1	Coronary heart disease	13.7	Dementia including Alzheimer's disease	12.5
2	Cerebrovascular disease	9.5	Coronary heart disease	8.5
3	Dementia including Alzheimer's disease	9.2	Cerebrovascular disease	6.8
4	Lung cancer	4.4	Lung cancer	4.5
5	Breast cancer	4.1	Chronic obstructive pulmonary disease	4.0
6	Chronic obstructive pulmonary disease	3.6	Breast cancer	3.8
7	Colorectal cancer	3.3	Colorectal cancer	3.1
8	Diabetes	2.8	Diabetes	3.0
9	Heart failure and complications and ill-defined heart disease	2.8	Heart failure and complications and ill-defined heart disease	2.5
10	Influenza and pneumonia	1.9	Accidental falls	2.3

Note: Colour lines link the same leading causes of death in 2011 with those in 2021; a black line means the ranking of the cause of death remained the same in 2021 as in 2011; an orange line, that the ranking of the cause of death rose compared with that in 2011; and a green line, that the ranking of the cause of death in 2021 decreased compared with that in 2011.

Source: AIHW National Mortality Database; Table S3.1, Table S5.3.

Variation in deaths between population groups

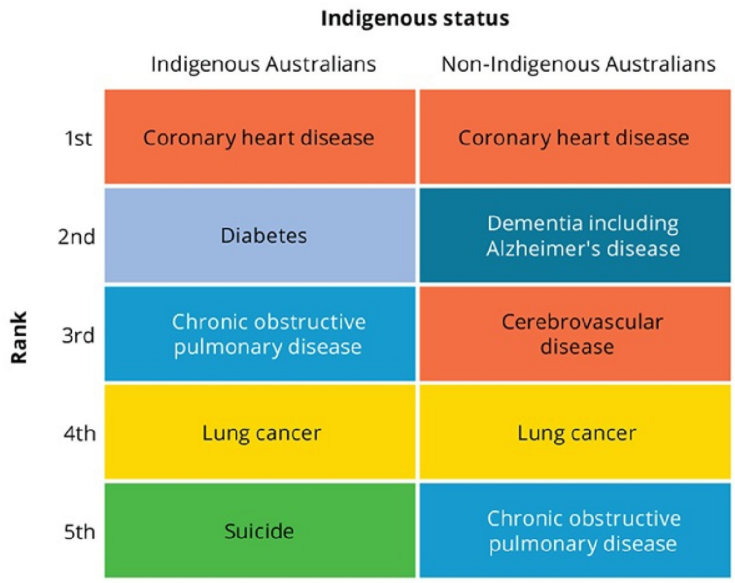
Aboriginal and Torres Strait Islander people

Rates of death and leading causes of death differ between population groups:

- In the period 2017-2021, the crude death rate for Aboriginal and Torres Strait Islander people was 455 deaths per 100,000 population.
- Age-standardisation is used to compare populations with different age structures. In 2017-2021, the age-standardised death rate among Indigenous Australians was 1.8 times the rate of non-Indigenous Australians (941 and 532 deaths per 100,000 population respectively).
- The 3 leading causes of death for Indigenous Australians were coronary heart disease, diabetes, and chronic obstructive pulmonary disease (COPD), whereas for non-Indigenous Australians they were coronary heart disease, dementia including Alzheimer's disease, and cerebrovascular disease (Figure 5).

See Indigenous health and wellbeing.

Figure 5: Leading underlying causes of death in Australia, by Indigenous status, 2017-2021



Note: Cause of death 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.

Remoteness areas

Rates of death and leading causes of death differ between the areas where people live:

- In the period 2017–2021, crude death rates were highest in *Inner regional* areas (834 deaths per 100,000) and lowest in *Very remote* areas (554 per 100,000).
- Age-standardised death rates increased with increasing remoteness. For people living in *Very remote* areas the age-standardised death rate was 1.6 times the rate for people living in *Major cities* (768 and 488 deaths per 100,000 population, respectively).
- Coronary heart disease, COPD and lung cancer were among the 5 leading causes of death in all remoteness areas.
- Diabetes and suicide were among the 5 leading causes of death in *Very remote* areas only; dementia including Alzheimer's disease and cerebrovascular disease were among the 5 leading causes in all remoteness areas except *Very remote* areas.

See Rural and remote health.

Socioeconomic areas

Rates of death and leading causes of death differ between socioeconomic groups:

- In the period 2017–2021, crude death rates were highest in the lowest socioeconomic areas (782 deaths per 100,000) and lowest in the highest socioeconomic areas (526 per 100,000 population).
- Age-standardised death rates 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 (610 and 416 deaths per 100,000 population, respectively).
- Four of the 5 leading causes of death nationally were among the 5 leading causes in all socioeconomic areas (coronary heart disease, dementia including Alzheimer's disease, cerebrovascular disease, and lung cancer). For these causes except dementia, the age-standardised death rate was highest in the lowest socioeconomic area, and lowest in the highest area.
- Death rates for dementia were similar across each socioeconomic area.

See Health across socioeconomic groups and Variations between population groups.

Multiple causes of death

Death statistics are usually compiled using the 'underlying cause of death' only. However, in most cases, more than one disease contributes to death. Causes listed on a death certificate that are not the underlying cause of death are called 'associated causes of death'. See Multiple causes of death for more information.

In 2021, 80% of natural deaths (that is, deaths not due to external causes such as accidents, injury and poisoning, or ill-defined causes) had more than one cause recorded on the death certificate (on average, 3.3 causes were recorded).

Some underlying causes of deaths had a higher number of associated causes of deaths than others:

- Deaths due to diabetes have an average of 5.5 causes recorded.
- Deaths due to dementia have an average of 3.1 causes recorded.

Some diseases were more likely to be reported as either the underlying or as an associated cause of death. For example:

- Kidney failure is more likely to be reported as an associated cause of death, with 40% of deaths due to diabetes reporting chronic or unspecified kidney failure.
- Liver and lung cancers are more likely to be reported as an underlying cause of death. For deaths with these causes recorded on the certificate, 90% of the underlying causes were due to the liver or lung cancer.

Life expectancy

Life expectancy measures how long, on average, a person is expected to live based on current age and sex-specific death rates. Life expectancy at birth is expressed as the number of years of life a newborn is expected to live.

Australia has one of the highest life expectancies in the world – ranked fifth (males and females combined) in 2021, among the 38 member countries of the Organisation for Economic Co-operation and Development (OECD) (OECD 2021). In Australia, a boy born in 2019–2021 can expect to live to the age of 81.3 and a girl can be expected to live to 85.4 (ABS 2022).

As with death rates and leading causes of death, life expectancy varies between population groups within Australia. For Indigenous Australians born in 2015–2017, life expectancy is estimated to be 8.6 years lower than that of the non-Indigenous population for males (71.6 years compared with 80.2) and 7.8 years lower for females (75.6 years compared with 83.4) (ABS 2018).

See Life expectancy for more information.

Where do I go for more information?

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

- General Record of Incidence of Mortality (GRIM) books
- Mortality Over Regions and Time (MORT) books
- Australian Bureau of Statistics (ABS) Deaths, Australia, 2021 - external site opens in new window
- ABS Causes of death, Australia, 2021 - external site opens in new window

See Life expectancy & deaths for more on this topic.

References

ABS (Australian Bureau of Statistics) (2018) *Life Tables for Aboriginal and Torres Strait Islander Australians, 2015-2017* - external site opens in new window, ABS cat. no. 3302.0.55.003, ABS, Australian Government, accessed 24 February 2022.

ABS (2022) *Life tables, 2019-2021* - external site opens in new window, ABS, Australian Government, accessed 27 April 2023.

Beaglehole R and Bonita R (1997) *Public health at the crossroads: achievements and prospects*, Cambridge University Press, Cambridge.

Becker R, Silvi J, Ma Fat D, L'Hours A and Laurenti R (2006) 'A method for deriving leading causes of death - external site opens in new window', *Bulletin of the World Health Organization*, 84:297–304.

OECD (Organisation of Economic Cooperation and Development) (2023) *Health status, OECD Health Statistics (database)* - external site opens in new window, OECD, accessed 27 April 2023.

Age at death

In 2021, there were 171,469 deaths registered in Australia (89,401 males; 82,068 females). The majority of deaths in Australia, like other developed countries, occur among older people (Figure 2.1). Sixty-seven per cent of deaths registered in Australia in 2021 were among people aged 75 or over (61% for males and 73% for females). The median age at death was 79 years for males and 85 years for females (Table S2.1).

Figure 2.1: Deaths in Australia by sex and age group, 2021

Source: AIHW National Mortality Database; Table S2.1.

Child deaths

Deaths in early childhood have reduced substantially over the past 100 years. In 1907, child deaths (aged 0-4 years) accounted for 26% of all deaths compared to 0.7% in 2021.

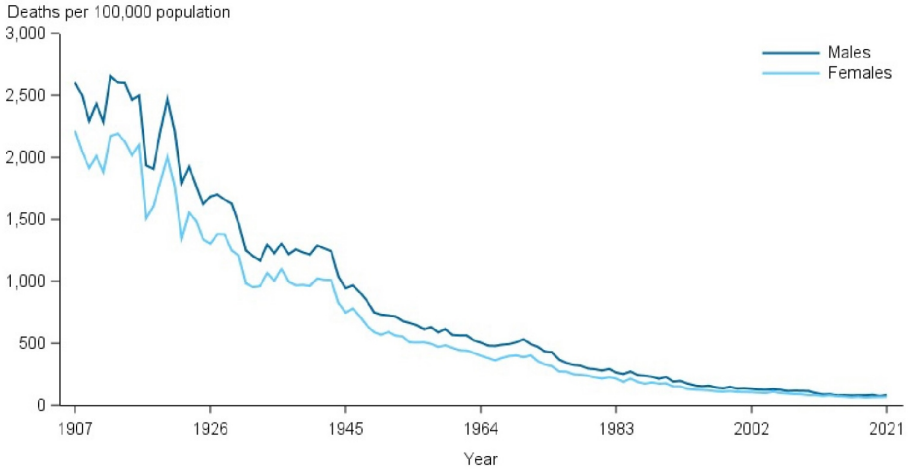
Child death rates presented here are calculated as the number of deaths among young children (aged 0-4) divided by the population of the same age and expressed as per 100,000 population.

In 2021, there were 77 child deaths per 100,000 population - 16% lower than a decade earlier (2011) and 97% lower than in 1907 when recording began (Figure 2.2). The death rate was higher for boys than girls (84 and 70 deaths per 100,000 population respectively).

The drop in child deaths in Australia mostly reflects a decline in infant deaths (aged less than 1), which is linked to:

- improved access to and quality of neonatal health care
- increased community awareness of risk factors for infant and child deaths
- improved sanitation and hygiene
- reductions in vaccine-preventable diseases through universal immunisation programs.

Figure 2.2: Child (aged 0-4) death rates in Australia by sex, 1907-2021



Source: AIHW National Mortality Database; Table S2.2.

Other measures of deaths in early childhood and infancy are also commonly used to describe the health status of a population:

- **Infant mortality rate** is defined as the number of deaths of infants (aged less than 1) divided by the number of live births (and usually expressed per 1,000 live births). For more information on infant deaths, see Australia's Children.
- **Perinatal deaths** are deaths of babies who die before birth (stillbirth or fetal death) or within the first 28 days of life (neonatal deaths). For more information on perinatal deaths, see Mothers and babies.
- **Under-five death rates** are defined as the number of child (aged 0-4) deaths divided by the number of live births, rather than dividing by the population aged 0-4, and expressed per 1,000 live births. For more information on under-five deaths, see World Health Organization - external site opens in new window.

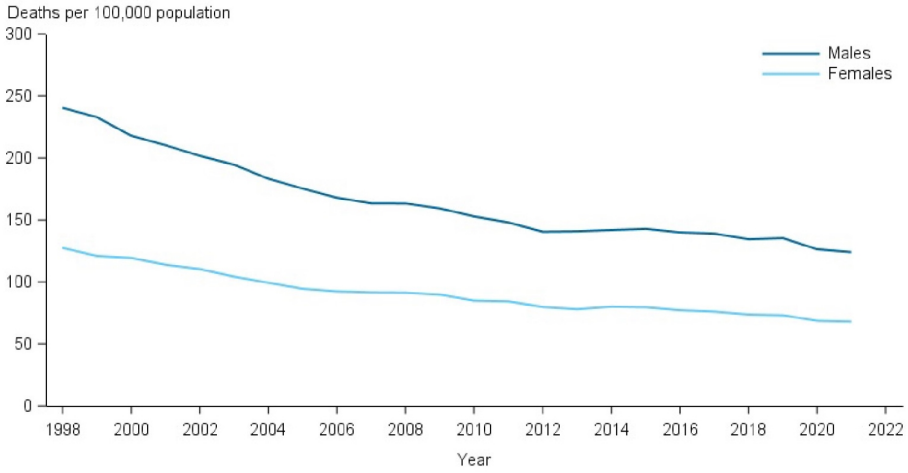
Potentially avoidable deaths

Potentially avoidable deaths are deaths among people younger than 75 that are potentially avoidable within 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.

In 2021, there were 26,967 potentially avoidable deaths: half (48%) of all deaths for people aged less than 75. Of these deaths, 63% were male and 37% were female.

Potentially avoidable age-standardised death rates fell by 41% between 2001 and 2021 (from 162 to 96 deaths per 100,000 population). While the rates among both males and females have decreased (by 41% and 40% respectively) in the past 20 years (from 210 to 124 deaths per 100,000 males and from 114 to 68 per 100,000 females), rates of potentially avoidable deaths have consistently remained higher among males than females throughout this period (Figure 2.3).

Figure 2.3: Age-standardised death rates of potentially avoidable deaths in Australia among people aged less than 75 by sex, 1998-2021



Source: AIHW National Mortality Database; Table S2.3.

Potentially avoidable deaths are classified using nationally agreed definitions - external site opens in new window based on cause of death for people aged less than 75. Historical data may differ from previous reports as the nationally agreed revisions to the definition of potentially avoidable deaths in 2021 have been applied.

Data on potentially avoidable deaths by small geographical areas are available as an indicator within the Australia's health performance framework and the AIHW Mortality Over Regions and Time (MORT) books.

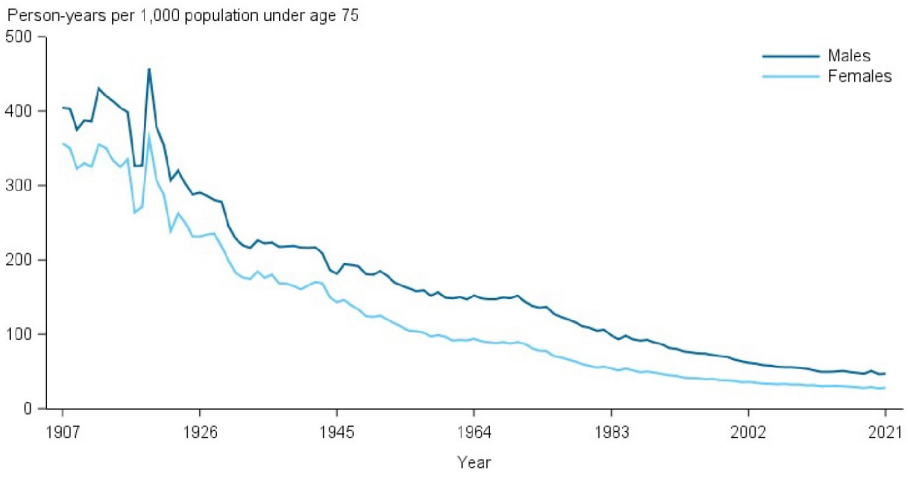
Potential years of life lost

Premature deaths can be summarised in terms of potential years of life lost (PYLLs). This measure considers only deaths that occur before a specified arbitrary age. For example, if dying before the age of 75 is considered premature then a person dying at age 40 would have lost 35 potential years of life.

Using the age of 75 as the cut-off, there were 893,170 PYLLs in Australia in 2021. This is 43% lower than the PYLLs in 1907 (1,576,383 PYLLs). Expressed another way, in 1907 there were 382 PYLLs per 1,000 population and in 2021 this figure was 38 PYLLs per 1,000 population; a decrease of 90%.

Males are more likely than females to experience premature death, however, the difference between the sexes is narrowing (Figure 2.4). In 1980, there were 109 PYLLs per 1,000 males compared to 58 PYLLs per 1,000 females: a difference of 51 PYLL per 1,000. This gap decreased to 29 PYLL in 2000 (66 PYLLs per 1,000 males and 37 PYLLs per 1,000 females) and 19 PYLL in 2021 (47 PYLLs per 1,000 males and 28 PYLLs per 1,000 females).

Figure 2.4: Potential years of life lost in Australia by sex, 1907-2021



Source: AIHW National Mortality Database; Table S2.4.

PYLLs can be used to estimate the burden of mortality, which is the loss associated with early death. On this basis it is sometimes used as an indicator of the social and economic impact of premature deaths. Burden of disease measures include a component of years of life lost that is weighted according to the remaining life expectancy at that age of death, rather than using the age of 75 as the cut-off.

For more information, see Burden of disease.

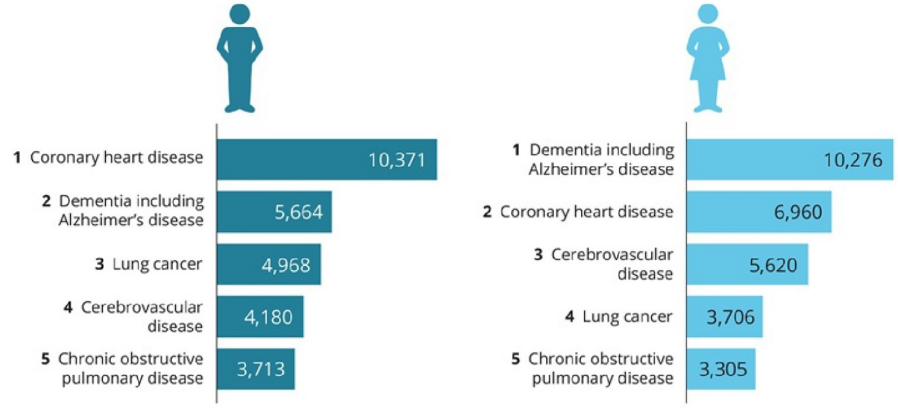
Leading causes of death

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.

Leading underlying causes of death by sex

Figure 3.1 shows the number of male and female deaths in 2021 contributing to the top 5 causes. The leading cause of death for males was coronary heart disease, accounting for 10,371 (12%) deaths, followed by dementia including Alzheimer's disease (5,664; 6.3% of deaths). Dementia including Alzheimer's disease was the leading cause of death for females, accounting for 10,276 (13%) deaths, followed by coronary heart disease (6,960; 8% of deaths). Cerebrovascular disease (which includes stroke) and lung cancer were among the top 5 leading causes of death in Australia in 2021 for both males and females. Females account for more deaths due to cerebrovascular disease, whereas males accounted for more deaths due to lung cancer. Chronic obstructive pulmonary disease was the fifth leading cause of death for both males and females. For more leading causes of death by sex see Table S3.1.

Figure 3.1: Leading underlying causes of death in Australia, by sex, 2021



Source: AIHW National Mortality Database; Table S3.1.

Leading underlying causes of death by age

As well as differences by sex, the leading causes of death also vary by age. Chronic diseases feature more prominently among people aged 45 and over, while the leading causes of death among people aged 1-44 are external causes, such as accidents and suicides (Figure 3.2).

Among infants, perinatal and congenital conditions (which includes respiratory and cardiovascular disorders specific to the perinatal period, birth trauma and congenital malformations) caused the most (80%) deaths. See Health of mothers and babies.

Land transport accidents were the most common cause of death among children aged 1-14 (13%). Suicide was the leading cause of death among people aged 15-24 (36%), followed by land transport accidents (19%). For people aged 25-44, it was also suicide (22%), followed by accidental poisoning (11%).

Coronary heart disease was the leading cause of death for people aged 45-64 and people aged 75-84. For people aged 65-74, the leading cause of death was lung cancer followed by coronary heart disease, and for people aged 85 and over, it was dementia including Alzheimer's disease, followed by coronary heart disease.

Figure 3.2: Leading underlying causes of death in Australia, by age group, 2019-2021

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)); Respiratory failure of newborn (P28.5); Respiratory failure, unspecified (J96.9). AIHW General Record of Incidence of Mortality (GRIM) books are available for selected leading causes of death.

2. Heart failure refers to 'Heart failure and complications and ill-defined heart disease (I50–I51)'.

3. 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 Deaths due to intentional self-harm (suicide): Coding of suicide - external site opens in new window in the Methodology of Causes of Death, Australia, ABS.

Source: AIHW National Mortality Database; Table S3.2.

Classifying causes of death

Leading underlying causes of death are determined by grouping specific causes of death and counting the number of deaths assigned to each cause group. Over 14,000 specific causes of illness, injury and death are presented in the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) - external site opens in new window. These causes can be grouped in a way that is meaningful for public health purposes.

A common grouping is by ICD chapters which are broad categories arranged according to the type of disease, the body system affected by the disease or the circumstances causing death. Each chapter is further divided into blocks of related diseases. Australian cause of death data by ICD-10 chapters and selected causes of death are published in the AIHW General Record of Incidence of Mortality (GRIM) books.

For leading underlying cause of death analysis, information needs to be more specific than ICD chapters and blocks. There is no standard method for grouping causes, however, the AIHW follows the recommendations of the World Health Organization (WHO) (Becker et al. 2006) with minor modifications to suit the Australian context. This grouping is a mix of ICD chapters, blocks and specific diseases to maximise information, separate out ill-defined causes and highlight health priority areas.

The leading underlying causes of death presented here are classified using an AIHW-modified version of Becker et al. (2006) - external site opens in new window.

Reference

Becker R, Silvi J, Ma Fat D, L'Hours A and Laurenti R (2006) *A method for deriving leading causes of death - external site opens in new window*. Bulletin of the World Health Organization 84:297–304.

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COVID-19 deaths

There were 1,122 deaths due to COVID-19 registered in 2021, accounting for 0.7% of all deaths in Australia.

The number (and rates) of deaths increased with increasing age (Figure 4.1). In 2021 there were no deaths among those aged under 15 and 8% of all COVID-19 deaths were among those aged under 55, whereas 31% deaths occurred among those aged 85 and over (Table S4.1).

There were more COVID-19 deaths in 2021 among males (660 deaths, 59%) than among females (462 deaths, 41%).

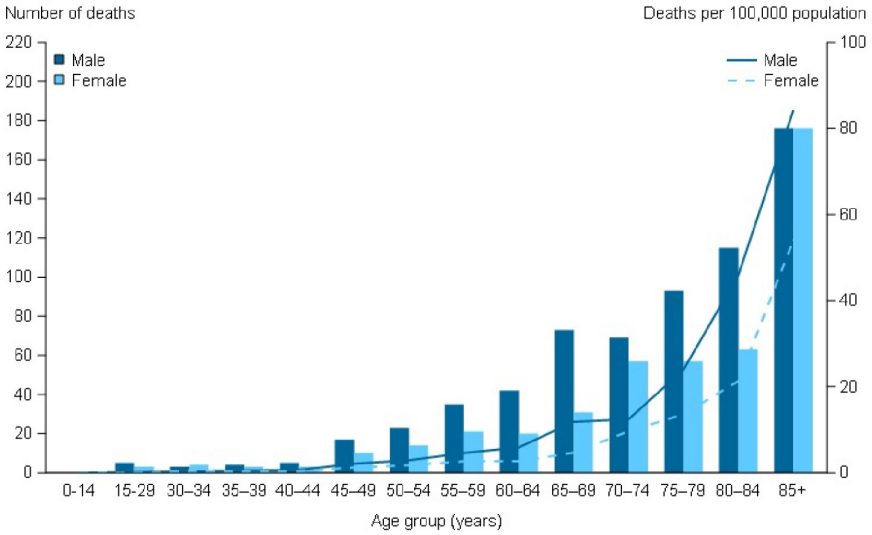
In 2021 males had a consistently higher number and rate of COVID-19 deaths than females across all age groups, excluding those aged 85 years and over. While the number of deaths were the same for males and females aged 85 years and over, the death rate was higher for males (84 deaths per 100,000) than females (54 deaths per 100,000) (Figure 4.1).

Between the ages of 60-69 and 80-84 years the death rate for males was more than twice that of females in the same age group (Table S4.1).

In 2021, deaths due to COVID-19 were registered among residents of New South Wales, Queensland, Victoria, South Australia, and the Australian Capital Territory. Most deaths in 2021 were among people residing in New South Wales (557 deaths, 49.6%) and Victoria (553 deaths 49.3%).

For the latest statistics on deaths due to COVID-19, see Australian Bureau of Statistics (ABS) reports Provisional Mortality Statistics - external site opens in new window and COVID-19 Mortality in Australia - external site opens in new window.

Figure 4.1: Number of deaths and age-specific rates (per 100,000 population) in Australia due to COVID-19, by age and sex, 2021



Note: COVID-19 is coded to ICD-10 codes U07.1 (COVID-19, virus identified), U07.2 (COVID-19, virus not identified), U08.9 (Personal history of COVID-19, unspecified), U09, (Post COVID-19 condition, unspecified) or U10.9 (Multisystem inflammatory syndrome associated with COVID-19, unspecified). Only deaths where COVID-19 was the underlying cause of death are included. In 2021, they included codes U07.1 and U07.2.

Source: AIHW National Mortality Database; Table S4.1.

Trends in deaths

Trends by sex

There has been a long and continuing decline in death rates in Australia. Between 1907 and 2021, the overall crude mortality rate decreased by 38% (41% for males and 34% for females) (Table S5.1). When accounting for changes in the populations age structure over this period, the age-standardised death rate for males fell by 73% (from 2,234 deaths to 597 deaths per 100,000) and by 77% for females (from 1,844 deaths to 427 deaths per 100,000) (Figure 5.1).

The leading causes of death at that time were infectious diseases, followed by cardiovascular diseases. Large decreases in deaths rates since the early 1900s have also been driven by the decline of infant and child deaths. 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.

Death rates have historically been higher for males than for females; however, the gap is closing over time. The difference between male and female age-standardised death rates was largest in 1968, when the rate difference was 642 deaths per 100,000 population. In 2021, the rate difference between males and females was 170 deaths per 100,000. The large reduction in rate difference between male and females since 1968 has largely been driven by the reduction in deaths due to cardiovascular diseases. This was influenced by several factors, including improvements in surgical techniques, hospital care, diagnosis and pharmaceuticals, as well as modifications to lifestyle factors such as smoking, diet and high blood pressure. See more on Changing patterns of mortality in Australia.

Figure 5.1: Age-standardised death rates in Australia, by sex, 1907-2021

Source: AIHW National Mortality Database; Table S5.1.

Trends by cause of death since the early 1900's

The decline in deaths in the first half of the last century was associated with factors such as control of infectious disease and better hygiene and nutrition. The decline in the later years was associated with improvements in road safety measures, falls in smoking rates, and improvements in prevention, detection and treatment of disease such as cardiovascular disease and other chronic diseases. Large decreases in deaths rates since the early 1900s have also been driven by the decline of infant and child deaths. See more on Mortality over the twentieth century in Australia and Changing patterns of mortality in Australia since 1900 in Australia's health 2022: data insights.

Infectious diseases were the leading cause of death in the first decade of last century, followed by cardiovascular diseases and respiratory diseases (Figure 5.2a). In 1919, mortality due to respiratory diseases increased sharply due to the Spanish influenza pandemic. As infectious diseases declined, there was increased mortality from cardiovascular diseases and cancers from the 1920s and 1930s. In recent years, crude mortality rates from cancer have surpassed those from cardiovascular diseases.

When taking into account differences in the populations age structure over time, cardiovascular diseases have consistently been a leading cause of death for Australians over the last century, but age-standardised death rates have been steadily declining (Figure 5.2b). Deaths from cardiovascular diseases peaked in 1968 at 830 deaths per 100,000 population (age-standardised rate) and have since dropped to 122 deaths per 100,000 in 2021. Cancer (all neoplasm) deaths, after adjusting for differences in age structure, peaked in 1985 (217 deaths per 100,000 population) and have gently declined to 152 deaths per 100,000 in 2021.

Age-standardised rates of deaths due to respiratory diseases, infectious diseases and injury and poisoning declined over the last century.

Figure 5.2a: Crude death rates in Australia, by broad cause of death, 1907-2021

Source: AIHW National Mortality Database; Table S5.2.

Figure 5.2b: Age-standardised death rates in Australia, by broad cause of death, 1907-2021

Source: AIHW National Mortality Database; Table S5.2.

Trends by cause of death in the past decade

Over the last decade, the 10 leading causes of death for males and females have generally been the same, albeit with different rankings (Figure 5.3):

- For males, coronary heart disease was the leading cause of death in both 2011 and 2021, accounting for 16% of deaths in 2011 and 12% in 2021. The largest change in leading causes of death for males from 2011 to 2021 was the rise of dementia including Alzheimer's disease, from sixth to second place. The rankings for all cancers within the top 10 causes of death (lung, prostate and colorectal) decreased between 2011 and 2021.

- For females, coronary heart disease and cerebrovascular disease fell in rank from 2011 to 2021. There was a notable increase for dementia including Alzheimer's disease from third to first place, accounting for 9% of deaths in 2011 and 13% of deaths in 2021. The ranking for breast cancer was the only cancer within the top 10 causes of death to decrease between 2011 and 2021.
- Influenza and pneumonia moved out of the 10 leading causes of death for females after 2011 and was replaced by accidental falls in 2021. Similarly, for males, heart failure and other complications moved out of the top 10 causes of death after 2011 and was replaced by accidental falls in 2021.

Figure 5.3: Change in disease ranking and the proportion of all deaths for the leading 10 underlying causes of death in Australia, by sex, between 2011 and 2021

Note: Colour lines link the same leading causes of death in 2011 with those in 2021; a black line means the ranking of the cause of death remained the same in 2021 as in 2011; an orange line, that the ranking of the cause of death rose compared with that in 2011; and a green line, that the ranking of the cause of death in 2021 decreased compared with that in 2011.

Source: AIHW National Mortality Database; Table S3.1, Table S5.3.

While coronary heart disease continues to be the leading cause of death overall, the gap between coronary heart disease and dementia continues to narrow (see Figure 5.4). In 2011 more than twice the number of people died from coronary heart disease than from dementia (21,526 and 9,864 deaths respectively). Over the last decade, coronary heart disease deaths have decreased from 15% of all deaths in 2011 to 10% of all deaths in 2021, while deaths due to dementia have increased from 6.7% of all deaths in 2011 to 9.3% of all deaths in 2021. In 2021 the difference between the two leading causes has continued to narrow (17,331 deaths due to coronary heart disease and 15,940 deaths due to dementia). For more information about dementia, see Dementia in Australia.

When taking into account changes in the age structure of the population, the death rate of coronary heart disease increased slightly for the first time in a decade in 2021 (Figure 5.4). This was due to the increase in the death rate for females between 2020 (32.7 deaths per 100,000 females) and 2021 (33.8 deaths per 100,000 females) (Table S5.4). The age-standardised death rate for males fell slightly between 2020 and 2021.

Lung cancer deaths have generally been declining over the last decade. Male lung cancer deaths had an increase for the first time in a decade in 2021 (32.2 deaths per 100,000 compared to 31.8 in 2020), but still stay well below the 2011 rate (43.8 deaths per 100,000) (Table S5.4).

Figure 5.4: Age-standardised death rates in Australia, leading causes of death, 2011-2021

Source: AIHW National Mortality Database; Table S5.4.

Variation in deaths between population groups

Rates of death and 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.

Deaths reported in this section are over a 5-year period combined (2017–2021), and rates are reported as crude rates in the first instance, followed by age-standardised rates to allow comparisons to be made between population groups with differing age structures.

Aboriginal and Torres Strait Islander peoples

Rates of death and leading causes of death differ between population groups:

- In the period 2017–2021, the crude death rate for Aboriginal and Torres Strait Islander people was 455 per 100,000 population. The crude death rate for non-Indigenous Australians was 659 per 100,000 population.
- The age-standardised death rate among Indigenous Australians was 1.8 times the rate among non-Indigenous Australians (941 deaths per 100,000 population, compared to 532 per 100,000 respectively).
- The 5 leading causes of death for Indigenous Australians were coronary heart disease, diabetes, chronic obstructive pulmonary disease (COPD), lung cancer and suicide. Diabetes and suicide were not among the 5 leading causes of death for non-Indigenous Australians (Figure 6.1).
- While coronary heart disease was the leading cause of death for both Indigenous and non-Indigenous Australians, the age-standardised death rate for Indigenous Australians was 2.0 times as high as for non-Indigenous Australians. For diabetes it was 4.8 times as high and for COPD it was 3.2 times as high.

See Indigenous life expectancy and deaths.

Figure 6.1: Leading underlying causes of death in Australia, by Indigenous status, 2017–2021

Note: Cause of death 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; Table S6.1.

Remoteness areas

Rates of death and leading causes of death differ between the areas where people live:

- In 2017–2021, the crude death rate was highest in *Inner regional* areas (834 per 100,000 population), followed by *Outer regional* areas, *Remote* areas, *Major cities* and was lowest in *Very remote* areas (554 per 100,000 population).
- The age-standardised death rate increased with increasing remoteness. In *Very remote* areas, the age-standardised mortality rate was 1.6 times the rate in *Major cities* (768 and 488 deaths per 100,000 population respectively).
- Coronary heart disease was the leading cause of death across all remoteness areas (Figure 6.2); in *Very remote* areas, the age-standardised death rate was 1.9 times the rate in *Major cities* (94 and 51 deaths per 100,000 respectively).

- Diabetes was the second leading cause of death in *Very remote* areas and seventh in *Major cities* - the age-standardised death rates were 3.8 times as high in *Very remote* areas as in *Major cities* (55 and 14 deaths per 100,000 respectively).
- Dementia including Alzheimer's disease had a lower ranking in *Remote* and *Very remote* areas (ranked fourth and seventh respectively) compared with *Major cities* and *Regional* areas (ranked second).
- The top 5 causes of death in *Very remote* areas were the same as for the total Indigenous population - coronary heart disease, diabetes, lung cancer, COPD and suicide.
- In *Very remote* areas, the age-standardised death rates for suicide were 2.3 times as high as in *Major cities* (25 and 11 deaths per 100,000 respectively).

See Rural and remote health.

Figure 6.2: Leading underlying causes of death in Australia, by remoteness area, 2017-2021

Rank	Major cities	Inner regional	Outer regional	Remote	Very remote
1st	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease	Coronary heart disease
2nd	Dementia incl. Alzheimer's disease	Dementia incl. Alzheimer's disease	Dementia incl. Alzheimer's disease	Lung cancer	Diabetes
3rd	Cerebrovascular disease	Cerebrovascular disease	Lung cancer	Chronic obstructive pulmonary disease	Lung cancer
4th	Lung cancer	Lung cancer	Chronic obstructive pulmonary disease	Dementia incl. Alzheimer's disease	Chronic obstructive pulmonary disease
5th	Chronic obstructive pulmonary disease	Chronic obstructive pulmonary disease	Cerebrovascular disease	Cerebrovascular disease	Suicide

Remoteness area

Source: AIHW MORT books

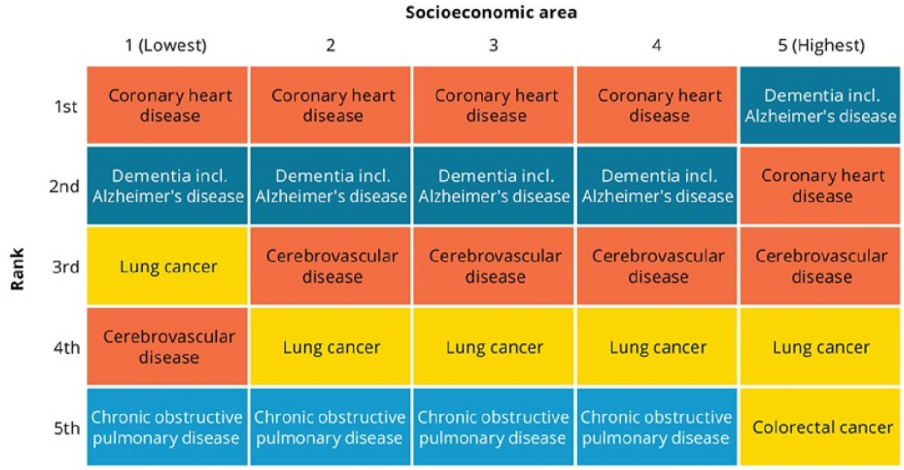
Socioeconomic areas

Rates of death and leading causes of death differ between socioeconomic groups:

- In the period 2017-2021, the crude death rate was highest in the lowest socioeconomic area (782 per 100,000) and decreased with increasing socioeconomic position. The crude death rate in the highest socioeconomic area was 526 per 100,000.
- The same trend was seen with age-standardised death rates. 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 (610 and 416 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 (Figure 6.3). Colorectal cancer was the fifth leading cause of death for the highest socioeconomic area, while in the other socioeconomic areas it was COPD.
- Age-standardised death rates for coronary heart disease decreased with increasing socioeconomic position (42 deaths per 100,000 in the highest socioeconomic area, compared to 67 per 100,000 in the lowest). Coronary heart disease was the leading cause of death in all areas except the highest, where dementia was the leading cause.
- Age-standardised death rates for dementia were similar across each socioeconomic area, and it is the 2nd leading cause of death across all areas except the highest (where coronary heart disease is the 2nd leading cause).
- For people living in the lowest socioeconomic area, age-standardised death rates for diabetes, COPD and lung cancer were at least twice those for people living in the highest socioeconomic area (diabetes: 23 and 10 deaths per 100,000 respectively; COPD: 32 and 13 deaths per 100,000 respectively; and lung cancer: 37 and 18 deaths per 100,000 respectively).

See Health across socioeconomic groups.

Figure 6.3: Leading underlying causes of death in Australia, by socioeconomic area, 2017-2021



Source: AIHW MORT books

Australian Government
Australian Institute of Health and Welfare

Multiple causes of death

Deaths statistics are usually compiled using the underlying cause of death only. However, in most cases, more than one disease contributes to death.

Box 1: Terminology used to describe causes of death

The **underlying cause of death** is 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. Deaths are referred to here as 'due to' the *underlying cause of death*.

Associated causes of death are all causes listed on the death certificate, other than the *underlying cause of death*. They include the immediate cause, any intervening causes, and conditions which contributed to the death but were not related to the disease or condition causing the death.

Multiple causes of death are defined here as all causes listed on the death certificate. This includes the *underlying cause of death* and all *associated causes of death*. This information is useful for describing the role of all diseases involved in deaths especially for chronic diseases, where there is usually more than one disease contributing to the death.

Examining multiple causes of death offers better insights into the disease processes occurring at the end of life. This in turn can be useful for developing better prevention and treatment policies and practices, refining disease surveillance activities, guiding research investment and enhancing burden of disease estimates.

Natural causes of death

Of the 171,469 deaths in Australia in 2021, 91% were due to natural causes. These are deaths that were not due to external causes such as accidents, injury and poisoning, or due to ill-defined causes.

In 2021, 80% of natural deaths had more than 1 cause recorded on the death certificate; on average, 3.3 diseases or conditions were recorded (Table S7.1).

Factors that may affect the number of causes of death recorded include the person's age, the underlying cause of death, coding changes and variations in certification practices. See more on Multiple causes of death in Australia.

Selected chronic disease causes of death

Australians who die of chronic disease often have more than 1 cause of death recorded on their death certificate. Deaths due to coronary heart disease had 3.8 causes of death recorded on average, deaths due to asthma had 4.1 and deaths due to diabetes had 5.5 (Table S7.2).

Table S7.2 also presents the common associated causes of death for selected chronic diseases as the underlying cause.

Coronary heart disease was an associated cause of death for:

- 43% of deaths due to diabetes
- 19% of deaths due to chronic and unspecified kidney failure
- 18% of deaths due to chronic obstructive pulmonary disease.

Hypertensive disease was an associated cause of death for:

- 33% of deaths due to diabetes
- 28% of deaths due to cerebrovascular disease (including stroke)
- 24% of deaths due to coronary heart disease.

Influenza and pneumonia was an associated cause of death for:

- 25% of deaths due to asthma
- 21% of deaths due to chronic obstructive pulmonary disease
- 12% of deaths due to dementia including Alzheimer's disease.

Kidney failure was an associated cause of death for:

- 40% of deaths due to diabetes
- 14% of deaths due to coronary heart disease
- 11% of deaths due to prostate cancer.

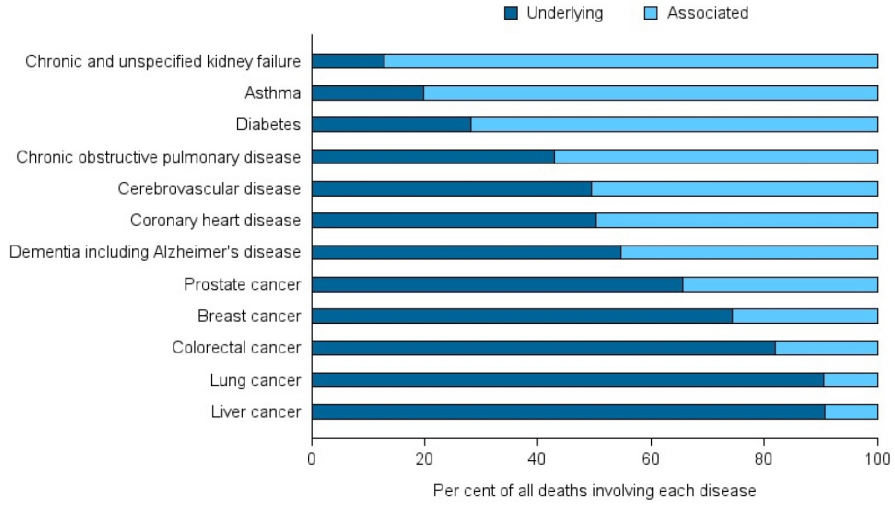
Underlying versus associated causes of death

Chronic diseases that are more likely to be reported as the *underlying cause of death* rather than as an *associated cause of death* include prostate, breast, colorectal (bowel), liver and lung cancers (Figure 7.1).

Chronic diseases that are more likely to be reported as *associated causes of death* include chronic and unspecified kidney failure, asthma, diabetes and chronic obstructive pulmonary disease (COPD).

When deaths are reported by the *underlying cause of death* only, the involvement of certain diseases in overall mortality may be underestimated. This is particularly evident for chronic and unspecified kidney failure, asthma, diabetes and COPD.

Figure 7.1: Selected chronic diseases as underlying and associated causes of death in Australia, 2019-2021 (per cent)



Note: Underlying refers to deaths with the disease recorded as the underlying cause of death, regardless of whether the disease was also recorded as an associated cause of death. Associated refers to deaths with the disease recorded only as an associated cause of death.

Source: AIHW National Mortality Database; Table S7.3.

Life expectancy

Life expectancy is the most commonly used measure to describe population health and reflects the overall mortality level of a population. Life expectancy measures how long, on average, a person is expected to live based on current age and sex-specific death rates. In summarising mortality patterns, life expectancy is often expressed as the number of years of life, from birth, a person is expected to live.

Trends in life expectancy

Life expectancy in Australia has improved dramatically for both sexes in the last century, particularly life expectancy at birth. Compared with their counterparts in 1891–1900, boys and girls born in 2019–2021 can expect to live around 30 years longer (Figure 8.1).

Figure 8.1: Life expectancy (years) at birth in Australia, by sex, 1891–1900 to 2019–2021

Sources: ABS 2014a; ABS 2014b; ABS 2015; ABS 2016; ABS 2017; ABS 2018a; ABS 2019; ABS 2020; ABS 2021; ABS 2022; Table S8.1.

In Australia, a boy born in 2019–2021 can expect to live to the age of 81.3 years and a girl would be expected to live to 85.4 years compared to 51.1 for boys and 54.8 years for girls born in in 1891–1900.

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. The life expectancy at different ages can be presented as the number of additional years a person can expect to live or their expected age at death in years.

Men aged 65 in 2019–2021 could expect to live another 20.3 years (an expected age at death of 85.3 years), and women aged 65 in 2019–2021 could expect to live another 23.0 years (an expected age at death of 88.0 years) (Table 8.1).

Table 8.1: Life expectancy (expected age at death in years) in Australia, at different ages and by sex, 1891–1900, 1960–1962 and 2019–2021

Age (years)	Males 1891–1900	Males 1960–1962	Males 2019–2021	Females 1891–1900	Females 1960–1962	Females 2019–2021
0 (birth)	51.1	67.9	81.3	54.8	74.2	85.4
1	57.9	69.5	81.6	60.9	75.5	85.7
15	62.0	70.1	81.7	65.0	76.0	85.8
25	63.9	70.8	82.0	66.7	76.3	85.9
45	69.0	72.4	82.9	71.7	77.4	86.4
65	76.3	77.5	85.3	77.8	80.7	88.0
85	88.8	89.1	91.6	89.1	89.8	92.7
95	97.2	97.3	98.1	97.2	97.6	98.4

Sources: ABS 2014a; ABS 2022; Table S8.1.

Life expectancy of Aboriginal and Torres Strait Islander people

For the Aboriginal and Torres Strait Islander population born in 2015–2017, males can expect to live to the age of 71.6 years and females to the age of 75.6 years. This is 8.6 years lower than that of non-Indigenous males and 7.8 years lower for non-Indigenous females born in 2015–2017.

Between 2005–2007 and 2015–2017, Indigenous life expectancy at birth for boys increased by 4.4 years and by 2.7 years for girls. Over the same period, the difference between Indigenous and non-Indigenous life expectancy narrowed by 2.9 years for males and 1.9 years for females.

As shown in Table 8.2, this has resulted in a small decline in the life expectancy difference between Indigenous and non-Indigenous Australians.

Table 8.2: Life expectancy (years) at birth in Australia, by sex and Indigenous status, 2005–2007, 2010–2012 and 2015–2017

Indigenous status	Males 2005–2007	Males 2010–2012	Males 2015–2017	Females 2005–2007	Females 2010–2012	Females 2015–2017

Indigenous	67.2	69.1	71.6	72.9	73.7	75.6
Non-Indigenous	78.7	79.7	80.2	82.6	83.1	83.4
Difference	11.5	10.6	8.6	9.7	9.5	7.8

Sources: ABS 2009; ABS 2013; ABS 2018b.

International comparisons of life expectancy

Australia enjoys one of the highest life expectancies in the world, at 83.2 years in 2021 for males and females at birth combined - ranked fifth among 38 member countries of the Organisation for Economic Co-operation and Development (OECD). The country with the highest life expectancy at birth for males was Switzerland (81.9 years), and for females was Japan (87.7 years) (Table 8.3).

Table 8.3: Life expectancy (years) at birth, top 10 OECD countries by sex, 2021

Rank	Country	Males	Country	Females	Country	Persons
1	Switzerland	81.9	Japan	87.7	Japan	84.7
2	Iceland	81.8	Korea	86.5	Switzerland	84.0
3	Norway	81.7	Spain	86.2	Korea	83.5
4	Japan	81.6	Switzerland	85.9	Spain	83.3
5	Sweden	81.4	France	85.5	Australia	83.2
6	Australia	81.2	Australia	85.3	Iceland	83.2
7	Ireland	80.8	Italy	85.1	Norway	83.2
8	Luxembourg	80.7	Sweden	85.0	Sweden	83.2
9	Italy	80.6	Luxembourg	84.9	Italy	82.9
10	Israel	80.5	Finland	84.7	Luxembourg	82.8
10	Korea	80.5	Norway	84.7		
10	New Zealand	80.5				

Source: OECD 2023; Table S8.2.

Calculating life expectancy

Life expectancy is calculated using a statistical tool called a life table. A life table is generated from current age- and sex-specific death rates in a given population. The resulting values are used to estimate the likelihood of someone in a hypothetical population dying before their next birthday.

Calculating a person's life expectancy is based on death patterns in the population and assumes that current death rates will persist throughout that person's life.

The Australian Bureau of Statistics (ABS) publishes life tables and calculates life expectancy for the Australian population and for some groups of the population (ABS 2022). These measures are based on 3 years of data to reduce the effect of variations in death rates from year to year.

Life expectancy is related to the average age at death within a population and is inversely related to the population death rates at that time; that is, the lower the death rates the greater the life expectancy. It varies between population groups and over time. High life expectancy is often associated with low infant and child death rates, an ageing population and access to high quality health care.

Differences in life expectancy over time may be due to changes in the patterns of death due to certain conditions. For example, in 1922, infectious disease accounted for 15% of all deaths in Australia and on average people dying from these diseases were 27 years old. By comparison, in 2021, infectious diseases accounted for less than 2% of deaths and the average age at death for these diseases was 80 years. For more information on this and other causes, see the AIHW General Record of Incidence in Mortality (GRIM) books.

Health-adjusted life expectancy

Burden of disease measures include a measure of health-adjusted life expectancy (HALE) which extends the concept of life expectancy by considering the time spent living with the health consequences of disease and injury. HALE reflects the average number of years of life expected in full health. The ratio of HALE to life expectancy, expressed as a percentage, represents the proportion of life expectancy that is spent in full health. The most recent estimates of HALE for Australians are for 2022. For males born in 2022, HALE was 71.6 years and for females it was 74.1 years. This equates to males and females, on average, living 88% and 87% of their lives in full health, respectively.

For more information, see Australian Burden of Disease Study 2022.

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Technical notes

Deaths data and statistics

Underlying, associated, and multiple causes of death

Death statistics are often based on the underlying cause of death only - that is, 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. Analysis of the underlying cause of death is important because it points to where interventions can be targeted.

Leading cause of death statistics presented here are based on the underlying cause of death.

Associated causes of death are all causes that contributed to the death, other than the underlying cause of death. They include the immediate (or direct) cause (the condition that occurred immediately before death or closest to the time of death), any intervening causes, and conditions which contributed to the death but were not related to the disease or condition causing the death. Analyses using associated causes of death offer insight into the disease processes occurring at the end of life or, for injury causes of death, the nature of the injury.

Multiple causes of death statistics are based on both the underlying and associated causes of death.

Changes in the pattern of causes of death may reflect changes in behaviours, exposures to disease or injury, social and environmental circumstances, the effects of medical and technological advances, as well as data coding practices.

Year of occurrence and year of registration

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 (for example, seasonal deaths) however the latest data available underestimates the occurrence of recent deaths due to a lag in registration.

For this reason, year of registration of death is often used to allow the latest year of data to be compared to previous years.

In both cases the latest year of data are coded with preliminary causes of death information and may underestimate causes of death that are usually certified by a coroner (for example, external causes of death including suicide).

Unless otherwise specified, deaths statistics presented here are based on year of registration of death.

For more information on how deaths are registered, coded and updated, see About deaths data.

Table: Abbreviations & symbols

Abbreviation or symbol	In full or meaning
ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
COPD	Chronic obstructive pulmonary disease
HALE	Health-adjusted life expectancy
ICD	International Statistical Classification of Diseases and Related Health Problems
ICD-10	International Statistical Classification of Diseases and Related Health Problems, 10th Revision
OECD	Organisation for Economic Co-operation and Development
PYLL	Potential years of life lost
WHO	World Health Organization
%	Per cent

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Notes

Glossary

Data quality statement

For more information on the AIHW National Mortality Database see Deaths data at AIHW.

The data quality statements underpinning the AIHW National Mortality Database can be found in the following ABS publications:

- ABS quality declaration summary for Deaths, Australia (ABS cat. no. 3302.0) - external site opens in new window
- ABS quality declaration summary for Causes of death, Australia (ABS cat. no. 3303.0) - external site opens in new window

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