



Suicide & self-harm monitoring

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Deaths by suicide over time

Numbers and rates of deaths by suicide change over time as social, economic and environmental factors influence suicide risk. The data visualisations below provide an overview of the characteristics of people who have died by suicide in Australia since 1907, looking at trends and variations by sex and age – how many there were, how old they were when they died, and the methods used over time. This analysis may provide useful information on potentially preventable factors, such as restricting access to means of suicide and reducing the risks posed by social or economic factors. Over time, the accuracy and quality of the data collected have been influenced by a number of factors including changes in legislation, technology and a reduction in social stigma.

Suicide deaths by sex, Australia, 1907 to 2021.

The line graph shows age-standardised rates of suicide for males, females and persons from 1907 to 2021. Users can also choose to view the number of deaths by suicide and male to female rate ratios from 1907 to 2021 and median age at death by sex from 1964 to 2021. The data can be viewed for any period between the years for which data are available.

Numbers of deaths by suicide increased steadily over the first half of the 20th Century (from 461 in 1907 to 760 in 1950), with peaks and troughs in numbers of suicides corresponding with significant world events (see below). However, since the 1950s numbers of deaths by suicide increased more steeply over time – in part driven by population growth. Peaks in numbers of deaths by suicide occurred during the 1960s and late 1990s. Since the mid-2000s numbers of deaths by suicide in Australia have increased, reaching over 3,000 Australians dying by suicide by 2015.

Have suicide rates changed over time?

Between 1907 and 2021, age-standardised suicide rates in Australia ranged from 8.4 deaths per 100,000 population per year (in 1943 and 1944) to 18.4 in 1963.

- Suicide rates peaked in 1913 (18.0 deaths per 100,000 population), 1915 (18.2), 1930 (17.8), 1963 (18.4) and 1967 (17.7). These peaks tended to coincide with major social and economic events or changes, see [Impact of social and economic events](#)

- Suicide rates tended to increase from 1907 to 1915 (from 16.9 to 18.2 deaths per 100,000 population). Rates then fluctuated throughout the late 1910s and early 1920s (from 13.1 deaths per 100,000 population in 1918 to 16.2 in 1920, returning to 12.8 in 1922), before increasing to a peak of 17.8 in 1930.
- Rates then declined throughout the 1930s and early 1940s, reaching a low of 8.4 deaths per 100,000 population in 1943 and 1944 (however, suicide rates for the war years may have been underestimated, see [Impact of social and economic events](#))
- Rates tended to increase throughout the 1950s, peaking at 18.4 deaths per 100,000 population in 1963. Rates remained high throughout the 1960s while the 1970s and early 1980s saw a decline in rates (from 15.4 deaths per 100,000 population in 1971 to 11.6 in 1984).
- Rates began to rise in 1985 and fluctuated from 14.3 in 1987 to 11.9 in 1993 with a recent peak of 14.8 in 1997. This was followed by sustained declines over the early 2000s, with a low of 10.2 per 100,000 population in 2006.
- After 2006, suicide rates began to rise, partly due to improvements in data quality and capture (see below). In 2021, the rate was 12.0 deaths per 100,000 population – down from a post-2006 high of 13.2 in 2017. It is important to note that deaths registered in 2020 and 2021 are preliminary and as such, are subject to revision (see below).

It is important to note that deaths by suicide were underestimated in the collection of routine deaths data, particularly in the years before 2006 (AIHW: Harrison et al 2009; De Leo, 2010; AIHW: Harrison & Henley 2015). Since then, the Australian Bureau of Statistics (ABS) has introduced a revisions process to improve data quality by enabling the revision of cause of death for open coroner's cases over time. Deaths registered in 2020 and 2021 are preliminary and data for 2019 are revised and therefore, data for these years are subject to further revision by the Australian Bureau of Statistics. Data from 1907 to 2018 are final (for further information see [Technical notes](#)).

What's changed in the last decade?

Please note: small numbers can result in large yearly variation in suicide rates. Caution is advised when making year to year comparisons.

- Over the last decade, the age-standardised suicide rate for males increased from 16.2 deaths per 100,000 population in 2011 to 18.2 in 2021. Female rates also increased from 5.1 deaths per 100,000 population in 2011 to 6.1 in 2021.

For detailed analysis of recent trends in suicide in Australia, see [Suicide Mortality in Australia: Estimating and Projecting Monthly Variation and Trends From 2007 to 2018 and Beyond](#).

Impact of social and economic events

While the reasons for an individual's suicide death are personal and often complex, overall peaks and troughs in rates and numbers of deaths by suicide historically coincide – more or less – with social and economic events.

Falls in the male suicide rate coincided with both World Wars 1 and 2. These falls are at least partly a statistical artefact due to the fact that deaths from all causes (including deaths by suicide) of Australian service personnel while overseas were not included in Australian death registration data, while population estimates were not adjusted to allow for the absence of these personnel (AIHW 2005; AIHW: Harrison & Henley 2014).

The highest annual age-standardised rate for males in the last century occurred in 1930 (29.8 deaths per 100,000 population), during the Great Depression – a period of high unemployment, particularly among males. The rise in both male and female suicide rates in the 1960s has been attributed, in part, to the unrestricted availability of barbiturate sedatives (Oliver & Hetzel 1972; Whitlock 1975). Subsequent falls

in these rates in the late 1960s and early 1970s have in turn been attributed to the introduction of restrictions to the availability of these drugs in July 1967 (AIHW: Harrison & Henley 2014). While high rates of suicide in the late 1980s and early 1990s also coincided with a period of economic uncertainty in Australia, the social and economic disruption related to the [COVID-19](#) pandemic has not seen an increase in the number of suspected deaths by suicide referred to coroners courts.

Males have consistently higher rates of suicide than females

Since 1907, the male age-standardised suicide rate has been consistently higher and more variable than the female rate. Variations in the overall suicide rate in Australia have been largely driven by changes in the male suicide rate.

The peak in overall suicide rates in 1930 was driven by an increase in male suicide rates, peaking at 29.8 deaths per 100,000 in 1930 – the highest rate ever recorded. Similarly, the increase in overall suicide rates in the 1990s was also mainly driven by an increase in male rates. The peak in the 1960s reflects a rise in suicide rates for both males and females.

The male suicide rate ranged from a high of 5.6 times that of females in 1930 to lows of less than twice the female rate in the 1960s and early 1970s – mainly due to the marked rise in female suicide rates at this time. Since then, the male suicide rate has fluctuated around 3–4 times that of the female rate.

Although males are more likely to die by suicide, females are hospitalised for intentional self-harm (with and without suicidal intent) almost twice as frequently as males (see [Intentional self-harm hospitalisations](#)). Furthermore, ambulance attendance data reporting on attendances for suicide attempts between 2018 and 2020 suggest females are more likely to attempt suicide than males (see [Ambulance attendances, suicidal and self-harm behaviours](#)).

Patterns of suicide by age have changed over time

Age-specific suicide rates for males are higher than those for females across all reported age groups for all years. Use the year slider to see how patterns of suicide in males and females have changed in Australia over time. Hover over the graph to display the tooltip to see the trend in deaths by suicide by sex over time for each age group. The age distribution of deaths by suicide is similar for males and females. The highest proportion of deaths by suicide occur during mid-life. More than half of all deaths by suicide (53%) in 2021 occurred in people aged 30–59 (1,653 deaths), compared with 22% for those aged 15–29, and 25% for those aged 60 and over.

In 2021, the highest suicide rate for males occurred in those aged 85 and over (36.4 deaths per 100,000 population); however, the number of deaths by suicide recorded for this age group is the lowest (76 deaths). High rates of suicide were also recorded in males aged 50–54 and 80–84 (26.9 and 31.2 respectively). Males aged between 40–54 accounted for one quarter (25%) of deaths by suicide by males. The highest suicide rate for females was in those aged 50–54 (9.5 deaths per 100,000 population) accounting for the highest proportion of deaths by suicide for females (10.2%).

Suicide deaths by age and sex, Australia, 2021.

The bar chart shows the age-specific rates of suicide for males and females by age groups (five year age bands from 15–19, 20–24, etc to 80–84 and 85 and over). Users can choose to view numbers of deaths by suicide for males and females in these age groups. Data can also be viewed by year from 1907.

For approximately the first half of the period 1907 to 2021, age-specific suicide rates in males generally increased with age; however, by the start of the 1990s this pattern had changed substantially with suicide rates highest in younger males aged 20–39 and males aged 80 and over. Since 2008, the highest suicide rates have been observed in middle-aged males (aged 40–49) and older males aged 85 and over; however, it should be noted that rates of death by suicide in males aged 85 and over have historically been based on relatively small numbers compared to other age groups and as such, the rates can be quite volatile over time and should be interpreted with caution.

Throughout 1907 to 2021, the lowest suicide rates in males were observed in those aged 15–19.

- From 1907 to 1970, suicide rates in males aged 15–19 were less than 10 deaths per 100,000 population. Rates then increased throughout the 1970s and 1980s peaking at 21.0 in 1988, while still remaining the lowest of the reported age groups.
- In 2021, the suicide rate for males aged 15–19 was 13.1 deaths per 100,000 population.

Males aged 20–24 had the second-lowest age-specific suicide rates of all males for most of the 20th Century; however, this changed from the late 1960s.

- From 1907 to 1966, suicide rates for males aged 20–24 were around 11 deaths per 100,000 population with peaks of 16.8 in 1914, 17.0 in 1958, and 19.1 in 1963 and a low of 1.9 in 1944.
- From the late 1960s to the late 1990s, suicide rates in this age group increased steadily to more than 26 deaths per 100,000 population, reaching a high of 43.1 in 1997.
- Rates fell steadily to 16.3 deaths per 100,000 population in 2009 but since have risen above 20, to 21.5 in 2021.

A similar pattern was observed for those aged 25–29.

The pattern of age-specific suicide rates for middle-aged males (aged 40–59) was different to that of younger age groups, with the highest rates being observed in the first part of the 20th Century and then falling to lower levels.

- The highest age-specific suicide rate for middle-aged males was 64.9 deaths per 100,000 population in 1913 for males aged 50–54. Peaks of more than 56 were also seen in 1930 (56.6). Age-specific rates then fell to a low of 14.5 in 1944. Similar patterns were seen for 40–44, 45–49 and 55–59 age groups with the second highest age-specific rate of 63.9 deaths per 100,000 population for males aged 55–59 in 1931 and the lowest age-specific rate of 10.5 for males aged 40–44 in 1944.
- Rates tended to increase throughout the 1950s and 1960s peaking again at 42.0 deaths per 100,000 population in 1962 for males aged 55–59, before falling to 19.1 in 1983. The greatest decline during this time period was seen for males aged 55–59 falling from 41.6 deaths per 100,000 population in 1968 to 18.4 in 1977.
- Since then, rates for these age groups have fluctuated to a high of 34.4 deaths per 100,000 population in 1987 for males aged 55–59 and a recent high of 33.8 in 2017 for males aged 45–49.

A similar pattern was seen in males aged 60 and older. It should be noted that the number of deaths by suicide recorded for older males historically has been low, particularly for males aged 75 and older. This causes fluctuation in the age-specific rates. Therefore, caution should be used when interpreting trends for these age groups over time.

- The age-specific suicide rate for males aged 60 and older was about 40 deaths per 100,000 population from 1907 to 1967.

- From 1968, suicide rates for males aged 60 and older generally fell. For example, suicide rates for males aged 65–69 fell to an all-time low of 12.6 per 100,000 population in 2005. In 2021 the rate of suicide for males aged 65–69 was 18.9.

Age-specific suicide rates for females showed comparatively little variation over time – except for a peak in multiple age groups during the 1960s.

- For the first half of the 20th Century, age-specific rates in females aged 40–59 was about 9 deaths per 100,000 population, with peaks of 21.5 in 1915 and 21.2 in 1953, in the 55–59 age group. The highest rate recorded for females was 29.2 deaths per 100,000 population in 1963 for the 50–54 age group and remained around 20 until peaking a second time in 1967 at 27.1 for the 65–69 age group. Rates then fell to a low of 4.1 deaths per 100,000 population in 2004 and 2005 for females aged 55–59. Age-specific suicide rates have increased in this age group to 9.5 deaths per 100,000 population in 2019 and fell to 5.9 in 2020 and rose again to 7.5 in 2021
- Similar patterns were seen for females aged 20–39 and 60 and older, albeit with lower suicide rates.
- A different pattern has been observed in females aged 15–19. Suicide rates fluctuated from around 2 to 6 deaths per 100,000 population from 1907 to the late 1930s. The fluctuations in rates have been mainly due to small numbers of deaths by suicide in this age group. Rates then declined to around 1 to 2 deaths per 100,000 population during the 1940s and 1950s. Rates then increased in the 1960s to the late 1990s, fluctuating between 2 and 6 deaths per 100,000 population. Since then, suicide rates have increased to between 3 and 8 deaths per 100,000 population with the highest rate recorded in this age group in 2012 (8.3 deaths per 100,000 population). In 2021, the rate was 7.1 for females aged 15–19.

How have methods of suicide changed over time?

Understanding the methods used for suicide can play an important role in suicide prevention. These data are provided to inform discussion around restriction of access to means as a policy intervention for the prevention of suicide.

Please consider your need to read the following information. If this material raises concerns for you or if you need immediate assistance, please contact a [crisis support service](#), available free of charge, 24 hours a day, 7 days a week.

Please consider the [Mindframe guidelines - external site opens in new window](#)

(<https://mindframe.org.au/suicide/communicating-about-suicide/mindframe-guidelines>) if reporting on these statistics.

The pattern of methods used for suicide has changed greatly, sometimes rapidly, over the last century as new methods have become available or as restrictions to the availability of some methods have been introduced. The methods of suicide used by males and females differed over the period 1907 to 2021; however, as males account for the majority of deaths by suicide the methods used by males have a greater influence on the overall pattern than the methods used by females.

The classification system used to code causes of deaths data, ICD-10, uses the term 'mechanism' to refer to the external cause of death. Throughout *Suicide & self-harm monitoring* 'mechanism' has been used in data visualisations, while the term 'method' has been used in the accompanying text.

Suicide deaths by sex and mechanism, Australia, 1907 to 2021.

The line graph shows age-standardised suicide rates by mechanism for poisons, gas, firearms, hanging and other mechanisms from 1907 to 2021. Users can also choose to view age-standardised rates and numbers of deaths by suicide, by sex and mechanism (including all mechanisms) from 1907 to 2021 and

median age at death by sex and mechanism from 1964 to 2021. The data can be viewed for any period between the years for which data are available.

Hanging (ICD-10 X70) has become the most common method of suicide in Australia and use of this method increased substantially over the last 25 years. Age-standardised rates of suicide by hanging remain much higher for males than females, but have increased for both sexes.

- Rates of suicide by hanging were relatively steady from 1930 to the late 1980s, with rates around 3 deaths per 100,000 population for males and lower for females. Prior to 1930, rates of suicide by hanging were volatile.
- From the late 1980s, rates of hanging increased as other methods of suicide (firearms and poisoning by gas) declined.
- Hanging became the most common method of suicide for males in 1989 and for females in 1997. Age-standardised suicide rates by hanging in males have more than doubled since then—from 5.7 per 100,000 population in 1989 to 12.6 in 2019, then falling to 11.8 in 2021. In 2021, hanging accounted for almost two-thirds (63%) of male deaths by suicide.
- Similarly, the rate of suicide by hanging increased more than 1.7 times in females from 1.9 deaths per 100,000 population in 1997 to 3.3 in 2021. In 2021, hanging caused half (52%) of all deaths by suicide in females, having increased steadily from 30% of deaths by suicide in 1997.

Use of firearms (ICD-10 X72–X75) was the most common method of suicide for males from 1907 to the late-1980s.

- In males, the rate of suicide by use of firearms was more than 5 deaths per 100,000 population per year for most of 1907 to 1993 (with a peak of 10.2 deaths per 100,000 population in 1914 and a fall below 5 deaths per 100,000 population in 1941 to 1946).
- In contrast, female rates of suicide by this method were low (less than 0.6 deaths per 100,000 population).
- Rates of suicide by use of firearms declined steeply for both males and females from 1987 and continued to decline from 1996, coinciding with the introduction of gun control restrictions and reforms.

In the 1920s, poisoning by gas (ICD-10 X67), largely due to carbon monoxide poisoning, became a new method of suicide in Australia with the introduction of the domestic gas supply and the motor vehicle to Australia.

- Rates of poisoning by gas peaked in 1963 in females (2.1 deaths per 100,000 population) and were also high for males (4.8). Rates then declined throughout the 1970s – this has been attributed to the replacement of toxic ‘town gas’ by less toxic gases in most of Australia at this time (AIHW: Harrison & Henley 2014).
- Rates of poisoning by gas subsequently increased again in the 1980s and 1990s, peaking for males (5.8 deaths per 100,000 population) and for a second time in females at a much lower level (1.2 deaths per 100,000 population) in 1997 as a result of the increasing use of motor vehicle exhaust gas (AIHW: Harrison & Henley 2014).
- A decline in poisoning by gas after 1997 was likely due to the introduction of emission controls that greatly reduced the amount of carbon monoxide permitted in the exhaust gas of new motor vehicles (AIHW: Harrison & Henley 2014).

Exposure to poisonous substances excluding gas (ICD-10 X60–X66, X68–X69) was the most common method of suicide for females from 1907 until 1997.

- For most of the first half of the 20th Century, rates of poisoning by substances (excluding gas) were approximately 2 deaths per 100,000 population in females; however, during the 1960s rates increased to 4 times that – peaking at 8.4 in 1967 – before returning to previous levels in the 1980s.
- A similar peak in suicide rates by this method was seen in males, with rates more than doubling in the 1960s to a peak of 8.2 deaths per 100,000 population in 1963 before falling again in the 1970s and 1980s.
- These peaks in suicide rates due to poisonous substances (excluding gas) during the 1960s have been attributed mainly to the unrestricted availability of barbiturate sedatives (AIHW: Harrison & Henley 2014). These trends were not associated with compensatory falls in the use of other methods of suicide during this time. In July 1967, in response to concerns over misuse of these drugs, the supply of barbiturates was limited and deaths by suicide from poisoning (excluding gas) in both males and females declined soon after (AIHW: Harrison & Henley 2014).
- In 2021, poisoning by substances (excluding gas) was the second most common means of suicide among females with a rate of 1.6 deaths per 100,000 population – accounting for almost a third of female deaths by suicide each year for the last decade.

Age-standardised rates for suicides by other methods (ICD-10 X71, X76–X84, Y87.0) are only available from 1964.

- Rates for these methods were relatively stable over the period 1964 to 2021 for both males and females.
- It is not possible to report on these different methods individually, as the numbers are too small to report for privacy or data reliability reasons.

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