

Statistical terms explained

This factsheet explains some of the common statistical terms used in the National Suicide and Self-harm Monitoring System (the System) and when reporting on suicide and self-harm data. Please remember that behind the numbers are people, families and communities impacted by suicide.

Suicide deaths

A suicide death is a death that occurs and is attributed to suicide based on coronial processes. The number of deaths due to suicide in Australia each year are reported by the Australian Bureau of Statistics (ABS) each year in the [Causes of Death](#) publication, which is a primary source of suicide data in Australia.

Rate

A rate (or crude rate) is the number of events (for example, deaths, hospitalisations/ambulance attendances, etc.) divided by the number of people in the population. It is usually expressed as the number of events per 100,000 population. By determining the rate of events, we can compare population groups, for example between males and females, between states, or over time as the total population changes.

It means we can say that the event occurred x number of times per every 100,000 persons in the population.

$$\left(\frac{\text{Number of events}}{\text{Number of people in the population}} \right) \times 100,000$$

Age-specific rate

This rate is calculated by dividing the number of events (for example, suicide deaths) in a particular age group by the total number of people in the specific age group. When multiplied by 100,000, this provides the age-specific rate for that age group.

$$\left(\frac{\text{Number of events occurring in age group}}{\text{Number of people in the population age group}} \right) \times 100,000$$

Age-standardised rate

An age-standardised rate takes into account that different populations will have different proportions of people in each age group, also known as 'age structures'. Age structures of different populations are converted to the same 'standard' age structure to provide a more accurate way to compare populations.

Generally, when comparing a population that includes different age groups (for example, when comparing all males and females in Australia) it is best to use the age-standardised rate if available.

Proportion

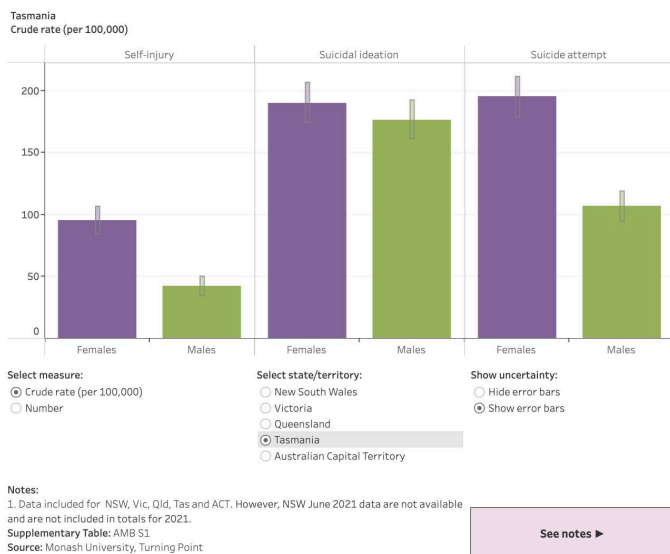
Proportions represent how much of the population is affected by a particular outcome, for example, suicide. This is often expressed as a percentage or fraction. In the context of suicide data, proportions are not always helpful to aid understanding due to the small numbers involved, which is why rates are generally used. Rates also allow a more accurate way to compare populations, for example, through age-standardisation.

Confidence interval

A confidence interval describes a range of values within which we can be 'confident' that the true value lies. While an estimated data point is provided ('point estimate') for different reasons this may not be completely accurate, and the confidence interval takes this error into account.

Some visualisations in the System allow toggling of *error bars*, which are a visual representation of the confidence interval. See the example below, which shows a visualisation of the crude rate of ambulance attendances in Tasmania. While the purple and green columns appear different for the rate of suicidal ideation, the error bars overlap, indicating there may not actually be a difference between males and females.

Ambulance attendances for suicidal ideation and self-harm behaviours by gender, 2021



Risk factor

A risk factor is a variable – behaviours, inherited characteristics, environment or social and economic influences that can increase a person’s likelihood of a person dying by suicide. Reducing risk factors at a population level can help to support prevention of suicide. The presence of one or more risk factors in an individual’s life does not necessarily mean they will have suicidal behaviours. The vast majority of people who experience risk factors associated with suicide will not experience suicidal behaviours.

Burden of disease

Burden of disease analysis is a way of measuring the number of years of healthy life lost due to suicide and self-inflicted injuries. The method takes into account both ‘years of life lost’ (YLL) and ‘years lived with a disability’ (YLD). The result is expressed as ‘disability-adjusted life years’ (DALY). One DALY is one year of ‘healthy life’ lost due to illness and/or death.

Attributable burden is the amount of ‘burden’ that could be avoided if a particular risk factor were removed or reduced to the lowest possible exposure. This is usually expressed as a percentage of the number of DALY that a particular risk factor contributed to.

While ‘burden of disease’ is the technical term for this analysis method, ‘burden’ can be a stigmatising term in the context of suicide and self-harm. If reporting on these studies, it is recommended to reduce use of the term ‘burden’ where possible.

Odds ratio

The odds of exposure to a risk factor can be estimated for cases (for example, death by suicide) and non-cases (for example, death by other causes), and compared using the odds ratio. The odds ratio measures the strength of association between an exposure and an outcome.

Odds ratios are used in the System when examining risk factors for suicide. They help indicate the odds of a suicide death occurring given the exposure to a particular risk factor compared to the odds of a suicide death occurring in the absence of that particular risk factor.

Odds ratios are expressed as the number of times more likely the exposure to a particular risk factor can result in a suicide death compared to a reference group.

Where can I find out more information?



For more detailed information, visit the Australian Institute of Health and Welfare’s website at: www.aihw.gov.au/suicide-self-harm-monitoring/data/behaviours-risk-factors/suicide-by-socioeconomic-areas