Office for National Statistics

Article

Understanding suicide registrations following a change to the standard of proof in England and Wales

Trends in suicide registrations following the change in the standard of proof, which is the evidence threshold used by coroners in England and Wales.

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1 . Main points

- The standard of proof (the level of evidence needed by coroners to conclude whether a death was caused by suicide) was changed from the criminal standard of "beyond all reasonable doubt", to the civil standard of "on the balance of probabilities" on 26 July 2018.
- This legal change affects the comparability of suicide figures over time, as it is likely to have resulted in an increased number of deaths recorded as suicides and to have contributed to the increase in the reported suicide rate in England and Wales observed since 2017.
- However, it is unlikely that this legal change is the sole reason for the increase; there will be other factors that contributed.
- Our analysis shows that the increase following the change in the standard of proof is not large enough to create a discontinuity in our suicides time series. However, it is an important factor that needs to be highlighted to users more prominently in our suicide statistics in the future.
- We will include a vertical line and footnote on suicide charts with a back series to highlight that the standard of proof change affects the comparability of the figures.
- Any commentary that compares figures before and after the standard of proof change will mention the change as a contributing factor. We advise all users to follow this practice when reporting on our statistics too.

If you are a journalist covering a suicide-related issue, please consider following the Samaritans' media guidelines on the reporting of suicide because of the potentially damaging consequences of irresponsible reporting. In particular, the guidelines advise on terminology and include links to sources of support for anyone affected by the themes in the article.

If you are struggling to cope, please call Samaritans for free on 116 123 (UK and the Republic of Ireland) or contact other sources of support, such as those listed on the NHS help for suicidal thoughts web page. Support is available 24 hours a day, every day of the year, providing a safe place for you, whoever you are and however you are feeling.

2 . Overview of changes to the standard of proof

When a suspected suicide occurs, every instance will be referred to a coroner for further investigation before the death is registered. The standard of proof is the level of evidence needed by coroners to conclude whether a death was caused by suicide. On 26 July 2018, following a case in the High Court, the standard of proof was changed from the criminal standard, where the coroner considered that the likelihood of suicide was "beyond all reasonable doubt", to the civil standard, where the coroner considered that suicide was the cause of death "on the balance of probabilities". While the legal change was on 26 July 2018, it is unclear when the new standard was applied in practice across the 77 coroner areas in England and Wales. An article in the British Medical Journal (BMJ) proposed that suicide rates could rise and would be hard to compare with previous years.

This article examines whether this change was associated with an increase in the number of deaths being recorded as suicide, and whether this creates a discontinuity in our annually reported accredited official statistics time series. We looked at the wider context and used modelling to assess whether there was a statistically significant level shift or deviation from expected deaths following the change. This article follows our previous release, which was inconclusive and recommended further monitoring when more data were available.

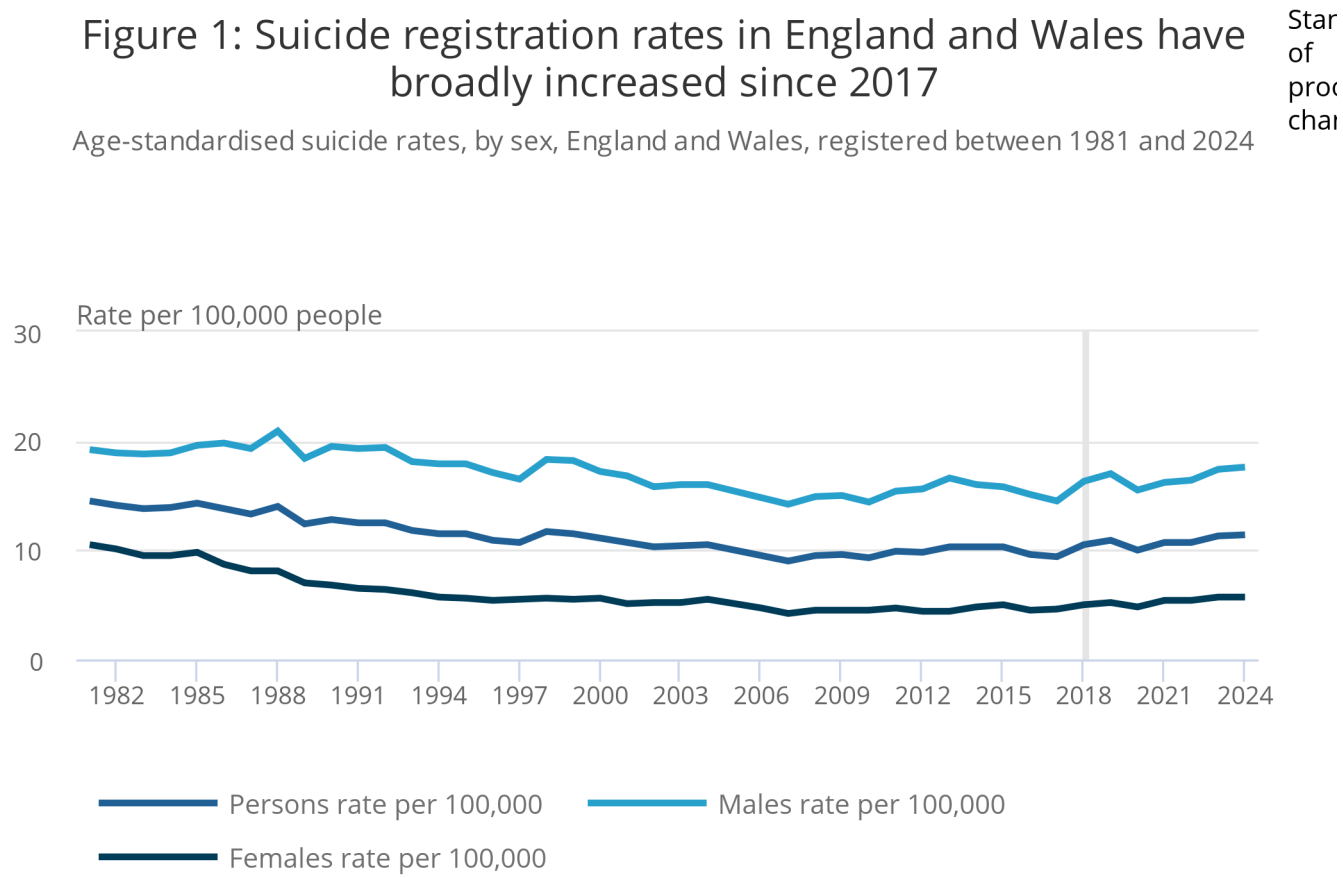
3 . The overall trend in suicide rates

We have several years of suicide death registrations and occurrences data since the introduction of the standard of proof change. For more commentary on our latest suicides by date of registration, see our Suicides in England and Wales bulletin and our Quarterly suicide death registrations in England bulletin.

Rates of suicide by year of death registration have been slightly higher since the change in the standard of proof (Figure 1). One exception was in 2020, which may be a result of the impact of the coronavirus (COVID-19) pandemic on the coroners' service and the subsequent increase in registration delays.

Figure 1: Suicide registration rates in England and Wales have broadly increased since 2017

Age-standardised suicide rates, by sex, England and Wales, registered between 1981 and 2024



Source: Understanding suicide registrations following a change to the standard of proof in England and Wales from the Office for National Statistics

Notes:

1. The accredited official statistics definition of suicide is available in Section 9: Glossary.
2. Figures for England and Wales include deaths of non-residents.
3. Figures are for deaths registered, rather than deaths occurring in each calendar year. Because of the length of time it takes to complete a coroner's inquest, it can take months or even years for a suicide to be registered.
4. Age-standardised suicide rates (ASMR) per 100,000 population, standardised to the 2013 European Standard Population. Age-standardised rates are used to allow comparison between populations that may contain different proportions of people of different ages.
5. The standard of proof for suicides was lowered on 26 July 2018, to the "civil standard" of "on the balance of probabilities". Previously, a "criminal standard" of "beyond all reasonable doubt" was applied.

Analysis was also carried out with the model used by the Office for National Statistics (ONS) to calculate expected deaths. We used statistical modelling to estimate the number of deaths that we would expect, based on current population and mortality trends. This showed there were more than the expected number of suicide deaths in the years 2018 and 2019. The change in the standard of proof is one possible cause for these increases, although other factors also offer possible explanations for the observed increase.

The National Records of Scotland also saw increases in rates of probable suicide in 2018 and 2019. The standard of proof did not change in Scotland but did in Northern Ireland. The Northern Ireland Statistics and Research Agency saw increased rates in 2018 but decreasing rates in 2019.

This demonstrates the complexities in understanding the causes of changes in suicide rates.

4 . Time series analysis for suicide deaths

Time series analysis involves examining data points collected at consistent intervals over a specific time frame and focuses on how data change over time. It helps in understanding patterns, trends, and seasonality in the data, which can be valuable for forecasting future values.

Time series analysis was carried out using X-13-ARIMA-SEATS on suicide rates. This method adjusts for the seasonal patterns seen in quarterly suicide data, to reveal underlying trends. The analysis was used to look for evidence of a level shift, and to produce forecasts with confidence intervals at the time of the change in the standard of proof. A level shift is a change at a point in time, in addition to the general trend of the data. Our analysis tests whether a level shift exists, rather than measuring the size of the shift. We treated 2020 and Quarter 2 (Apr to June) 2020 as additive outliers in our annual and quarterly figures, respectively. This was to recognise the impact of the coronavirus (COVID-19) pandemic on the coroners' service.

In time series analysis, a t-value is a test statistic used to assess the statistical significance of a hypothesis test. It quantifies the difference between the sample mean and the null predicted mean in units of standard error. If the t-value is greater than the test's critical value, we can conclude that we have a statistically significant difference.

Our primary analyses were for all people, and for annual and quarterly figures, using age-standardised rates of suicide by date of death registration. We carried out additional exploratory breakdowns, including by:

- sex
- age group
- country
- coroner's conclusion (deaths due to intentional self-harm and undetermined intent)

We also conducted analyses using suicide counts and date of death occurrence.

For our primary analysis, there was some evidence of a level shift for 2018 in the time series for annual suicide registration rates in England and Wales (Figure 2; t-value of 2.90). The evidence of a level shift in Quarter 3 (July to Sept) 2020 was lower (t-value of 2.41), looking at quarterly rates.

Together, this might suggest that there was an additional increase in the suicide registration rate at around the time of the change in the standard of proof, alongside the general trend of increasing rates. The change in the standard of proof is one possible cause for this increase, which may also be explained by other factors.

Figure 2: There was some evidence of a level shift in the time series for suicide registration rates

Time series analysis of age-standardised suicide rates, persons, England and Wales, registered between 1981 and 2024

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Notes:

1. The accredited official statistics definition of suicide is available in Section 9: Glossary.

2. Figures for England and Wales include deaths of non-residents.

3. Figures are for deaths registered, rather than deaths occurring in each calendar year. Because of the length of time it takes to complete a coroner's inquest, it can take months or even years for a suicide to be registered.

4. Age-standardised mortality rates (ASMR) per 100,000 people.

5. The lower (LCL) and upper (UCL) 95% confidence limits have been provided. These form a confidence interval, which is a measure of the statistical precision of an estimate, and shows the range of uncertainty around the estimated figure.

6. Forecast is based on time series analysis using X-13-ARIMA-SEATS.

7. The ASMR for suicides registered in 2023 is based on the estimate published in August 2024, before the October 2024 revision (change in population estimates).

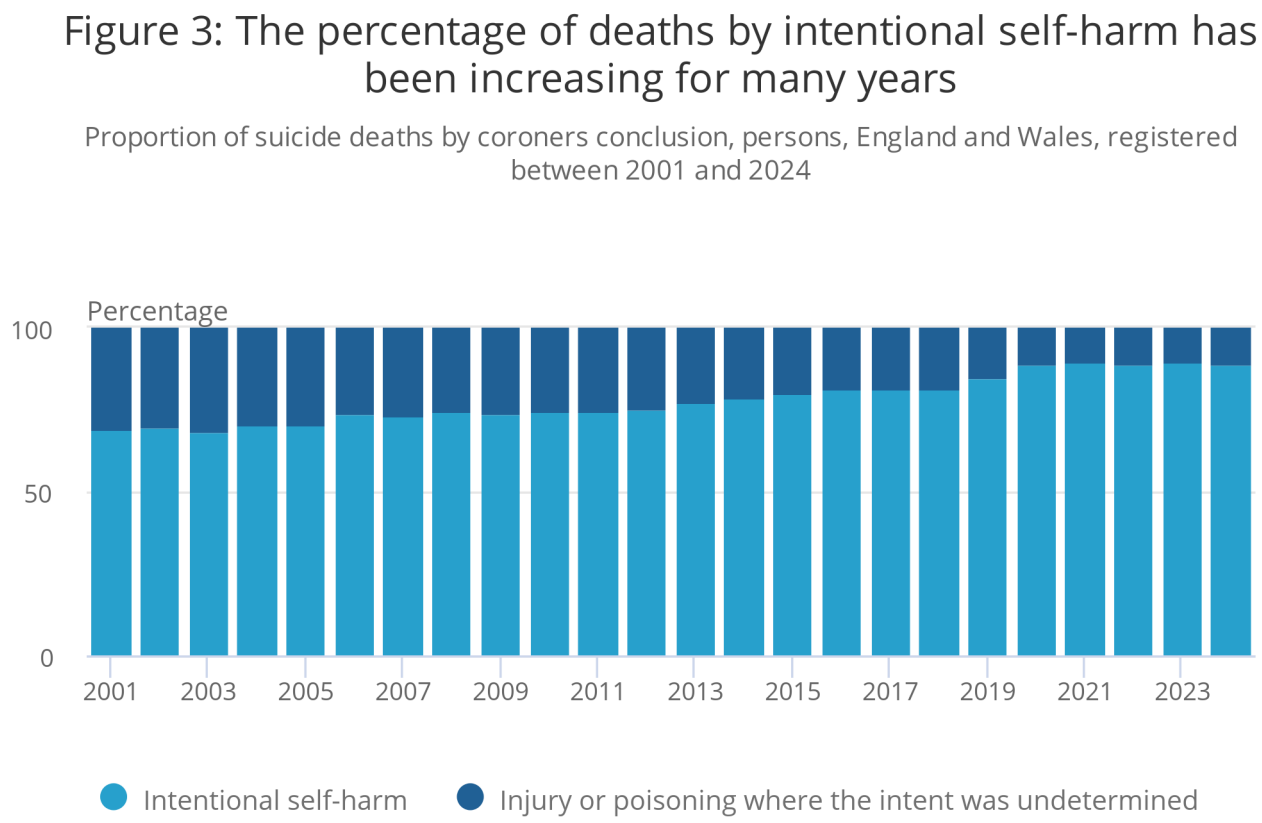
5 . Changes to conclusions given by coroners

Suicide statistics include deaths with an underlying cause of intentional self-harm. For these deaths, coroners had enough evidence to conclude that the deceased intended to end their own life. Suicide statistics also include deaths with an underlying cause of injury or poisoning of undetermined intent, based on the assumption that these are likely suicides. For these deaths, coroners were unable to determine whether the deceased did or did not intend to end their own life.

The percentage of suicides with an underlying cause of intentional self-harm has steadily risen since the 2001 registration year, many years before the standard of proof change. In 2001, 69.0% of suicides were from intentional self-harm. This figure rose to 81.2% in 2017, before the change in the standard of proof, but has remained at around 89% since 2020.

Figure 3: The percentage of deaths by intentional self-harm has been increasing for many years

Proportion of suicide deaths by coroners conclusion, persons, England and Wales, registered between 2001 and 2024



Source: Understanding suicide registrations following a change to the standard of proof in England and Wales from the Office for National Statistics

Notes:

1. The accredited official statistics definition of suicide is available in Section 9: Glossary.

2. Intentional self-harm includes International Classification of Diseases, Tenth Revision (ICD-10) codes X60 to X84 for people aged 10 years and over. Deaths caused by injury or poisoning where the intent was undetermined include ICD codes Y10 to Y34 for those aged 15 years and over.

3. Figures for England and Wales include deaths of non-residents.

4. Figures are for deaths registered, rather than deaths occurring in each calendar year. Because of the length of time it takes to complete a coroner's inquest, it can take months or even years for a suicide to be registered.

We examined the rate of suicides due to intentional self-harm, and injury or poisoning, where the intent was undetermined. For deaths by intentional self-harm, annual rates have shown a steady increase over time from 6.9 deaths per 100,000 in 2010, to 7.7 in 2017 (just before the standard of proof change), and then to 10.1 in 2024 (Figure 4). The largest increases were seen from deaths registered between 2017 and 2018, and between 2018 and 2019.

This would suggest that there was an additional increase in the rate around the time of the change in the standard of proof, alongside the general trend of increasing rates. The change in the standard of proof is therefore one possible cause for the observed increase, alongside other factors.

For deaths by undetermined intent, annual rates have conversely shown a steady decrease over time from 2.3 deaths per 100,000 in 2010, to 1.8 in 2017 (just before the standard of proof change). The rate then decreased to 1.1 in 2021 and increased slightly to 1.3 in 2024 (Figure 4). The largest decrease was seen from 2019 to 2020.

In summary, the data presented are consistent with coroners changing their behaviour in line with the standard of proof change. However, it seems as though this change has been gradual.

It is likely that more deaths are being classified as intentional self-harm, whereas, in the past, coroners might have classified them as undetermined intent. This has a limited impact on the accredited definition of suicide, as it includes both intentional self-harm, and injury or poisoning of undetermined intent.

Figure 4: Rates of deaths by intentional self-harm have been increasing for many years

Age-standardised rates of intentional self-harm and injury or poisoning where the intent was undetermined, persons, England and Wales, registered between 2001 and 2024

Notes:

1. Intentional self-harm includes International Classification of Diseases, Tenth Revision (ICD-10) codes X60 to X84 for people aged 10 years and over. Deaths caused by injury or poisoning where the intent was undetermined include ICD codes Y10 to Y34 for those aged 15 years and over.
2. Figures for England and Wales include deaths of non-residents.
3. Figures are for deaths registered, rather than deaths occurring in each calendar year. Because of the length of time it takes to complete a coroner's inquest, it can take months or even years for a suicide to be registered.
4. Age-standardised mortality rates (ASMR) per 100,000 people.
5. The lower (LCL) and upper (UCL) 95% confidence limits have been provided. These form a confidence interval, which is a measure of the statistical precision of an estimate, and shows the range of uncertainty around the estimated figure.

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6 . Accidental poisoning has continued to increase

Following our previous analysis on three accidental causes, we examined:

- accidental drowning (International Classification of Diseases: ICD-10 codes W65 and W74)
- accidental hanging (ICD-10 codes W75 and W76)
- accidental poisoning (ICD-10 codes X40 and X49)

These accidental causes are not included in our definition of suicide. However, there are equivalent causes included in the definition.

For accidental causes between 2013 to 2017 and 2019 to 2023, the average numbers of deaths have increased by:

- 7.1% for accidental hangings
- 0.2% for accidental drowning or submersion
- 47.0% for accidental poisoning

This increase is different to what might have been expected (a decrease in accidental causes) because the lower standard of proof relaxes the evidence threshold. In recent years, the average number of registered accidental poisoning deaths is likely explained by the increasing number of deaths related to drug poisoning in England and Wales.

7 . The number of hard-to-code narrative conclusions has increased in recent years

Following our previous analysis on hard-to-code narrative conclusions, we examined hard-to-code narrative conclusions that were assigned an underlying cause of accidental hanging (International Classification of Diseases: ICD-10 codes W75 to W76) or accidental poisoning (ICD-10 codes X40 to X49).

For deaths where the underlying cause was accidental hanging or poisoning, and the narrative conclusion was hard to code, there was a 14% increase in the average number of deaths between 2013 to 2017 and 2019 to 2023.

This increase is different to what might have been expected (a decrease in hard-to-code narrative conclusions) because the lower standard of proof relaxes the evidence threshold.

8 . Implications for interpreting suicide statistics

Whenever a change in suicide rates occurs, the reasons are complex and will rarely be because of a single factor. Changes can generally be explained by two broad factors:

- true changes in the number of deaths caused by suicide because of a complex number of social factors
- artefacts in the data, such as the change in the legal standard of proof and registration delays

Artefacts in the data occur regularly, as demonstrated in Quarter 2 (Apr to June) 2020, where the pronounced drop in the rate of registered suicides is likely because of the coronavirus (COVID-19) pandemic causing delays to coroner's inquests.

However, while the case in the High Court regarding the standard of proof change took place in July 2018, it is unclear when the new standard was applied in practice. Some coroners recommended anticipating the change in late 2017, while others reacted after the 2018 court case. The evolving nature of the data makes it difficult to understand changes and their impact over time. The trends identified in our time series analysis were broadly the same between rates based on death registrations and occurrences.

The rates of registered deaths caused by suicide have increased in recent years, and it is likely that the change in the standard of proof has contributed to this, alongside other factors. The upward trend started before the change in the coroner's standard of proof, but there is evidence of the rates increasing more than expected around the time of the change.

Additionally, coroners have reported more deaths due to intentional self-harm, and fewer deaths as undetermined intent. These changes do not affect statistics on suicide, as both causes of death are already included. Despite this, we have not seen a decrease in either accidental causes or hard-to-code narrative conclusions, as might have been expected. This demonstrates the complex nature of the situation.

We conclude that it is likely that the change in the standard of proof did increase deaths registered as suicide. The change affected the overall suicide rate and how deaths are classified in the definition of suicides presented in Table 3, Section 7 of our Suicides in the UK QMI. This is an important factor to consider when examining suicide figures over time, as the change in the standard of proof does affect the comparability of figures. However, the change was not large enough to create a discontinuity in our time series from 1981.

We aim to improve our communication by:

- linking to this report in our regular suicide releases
- mentioning the standard of proof change as a contributing factor in commentary, when comparisons of figures before and after the standard of proof change are made
- adding a note on the standard of proof change to datasets
- adding a vertical line to prominent suicide charts with a back series, and a footnote noting that the standard of proof should be considered

We advise all users to follow this practice when reporting on our statistics too.

9 . Glossary

Suicide

This release is based on the accredited official statistics definition of suicide. This includes all deaths from intentional self-harm for people aged 10 years and over, and deaths caused by injury or poisoning where the intent was undetermined for those aged 15 years and over. For further information on the definition, see our Suicide rates in the UK quality and methodology information (QMI) report.

Standard of proof

The level of evidence needed by coroners when determining whether a death was caused by suicide, which was changed from the criminal standard of "beyond all reasonable doubt" to the civil standard of "on the balance of probabilities" on 26 July 2018.

Registration delay

Figures are based on deaths registered in each calendar year, rather than the date on which the death occurs. The difference between these dates is known as the registration delay.

Narrative conclusion

For some deaths, a coroner provides in several sentences how, and in what circumstances, the death occurred. Following death registration, expert mortality coders in the Office for National Statistics (ONS) read narrative conclusions and will then assign each death an underlying cause of death.

Hard-to-code narrative conclusion

A narrative conclusion where the underlying cause of death is difficult to assign based on the information provided by the coroner. These are not included in suicide statistics.

Open conclusion

These conclusions are given by coroners when it is not possible to determine whether the death was a result of an accident or a result of intentional self-harm.

Age-standardised mortality rate

In this article, age-standardised mortality rate (ASMR) refers to a weighted average of the age-specific mortality rates per 100,000 people and standardised to the 2013 European Standard Population. Age-standardised mortality rates allow for differences in the age structure of populations and therefore allow valid comparisons to be made between geographic areas, between sexes, and over time.

10 . Data sources and quality

Mortality statistics are derived from information provided when deaths are certified and registered.

Populations

Mortality rates are calculated using the number of deaths, as well as mid-year population estimates and population projections from the Office for National Statistics (ONS) Population Estimates Unit. We use the latest populations available at the time of analysis. Population estimates were revised for 2022 and 2023 in our Population estimates for England and Wales: mid-2024 bulletin, following the rebasing of official population estimates between 2012 and 2021.

Registration delays

In England and Wales, all deaths by suicide are certified by a coroner and cannot be registered until an inquest is completed. This results in a delay between the date the death occurred and the date of registration. As suicides are more likely to require coroners' inquests, timeliness decreases greatly when compared with other causes. More information about this is available in our Impact of registration delays on mortality statistics in England and Wales: 2022 article.

For suicides, the median registration delay for deaths registered in 2024 was 199 days in England (the median delay was also 199 days in 2023), and 269 days in Wales (compared with 293 days in 2023). Delays in Wales remain much higher than in England.

Estimates of suicides prior to inquest are available in the Near to real-time suspected suicide surveillance (nRTSSS) for England report published by the Office for Health Improvements and Disparities and the Deaths by suspected suicide 2023 to 2024 report published by Public Health Wales.

Strengths

Suicide deaths are compiled using information supplied when a death is registered, which gives complete population coverage.

The release uses the accredited official definition of suicide, which is consistently used by government departments, agencies and the devolved administrations across the UK.

Quality assurance procedures have been undertaken at all stages of the analysis to minimise the risk of error.

Limitations

Numbers of suicides by quarter are often small, particularly where males and females are analysed separately, as demonstrated by the relatively wide confidence intervals. For this reason, any comparisons should be interpreted with caution and particular attention should be paid to overlapping confidence intervals where differences are then not statistically significant.

Since the beginning of our data time series in 2001, the number of suicide registrations in Quarter 1 (Jan to Mar) tend to be lower than those observed in any of the other quarters. This should be kept in mind when making comparisons. Further guidance on how to interpret the data included in this release is available in the "Table interpretation" tab of our Deaths caused by suicide by quarter in England dataset.

Quality and methodology information

More quality and methodology information (QMI) on strengths, limitations, appropriate uses, and how the data were created is available in

- our Mortality statistics in England and Wales QMI
- our Suicide rates in the UK QMI
- our User guide to mortality statistics

11 . Related links

Suicides in England and Wales: 1981 to 2024
Bulletin | Released 3 October 2025
Registered deaths from suicide in England and Wales, analysed by sex, age, area of usual residence of the deceased, and suicide method.

12 . Cite this statistical bulletin

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