Office for National Statistics

Article

Impact of registration delays on mortality statistics in England and Wales: 2021

Analysis of the time taken to register deaths, by cause of death, area of usual residence, age, sex, and certification type.

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1 . Main points

- The median time between a death occurring and that death being registered (registration delay) in England and Wales was five days in 2021, the same as in 2020.
- In 2021, 67.2% of deaths in England and Wales were registered within one week (seven days or fewer) of the death occurring, the lowest proportion since the data time series began in 2001.
- In 2021, Wales had a higher percentage (75.9%) of deaths registered within one week compared with England (66.6%) for the 19th consecutive year.
- Within England, the percentage of deaths registered within one week was highest in the North East (80.2%) and lowest in the South East (57.5%).
- Regional differences in the percentage of deaths registered within one week have increased since 2001, with the range widening considerably from 2014 onwards.
- The proportion of coroner-certified deaths registered within two weeks (14 days or fewer) reached a low of 36.7% in 2021; coroner-certified deaths registered between two weeks and three months (15 to 91 days) reached a high of 31.4%.

2 . Registration delays in England and Wales

At the Office for National Statistics, most mortality publications are based on the date of death registration, including our Weekly deaths in England and Wales and Monthly mortality analysis bulletins. Using registration data allows us to produce timely statistics that are stable over time, and comparable across locations.

A limitation of this data is that we are only aware that a death has occurred and can include it in our figures when it is registered, and there can be a delay between death occurrence and registration. Some deaths may not be registered for weeks, months or years, depending on the circumstances of the death. To understand the impact of delays in registration on mortality statistics, it is important to understand the nature of these delays and monitor changes over time.

A registration delay is the difference between the date of death occurrence and date of death registration. A death that occurred and was registered on the same day has a delay of zero days, while a death that was registered the day after it occurred has a delay of one day. From 2001 to 2020, registration delays generally increased; for more information, see the previous editions of this release. For figures on registration delays by age, sex and certification type, see the accompanying dataset.

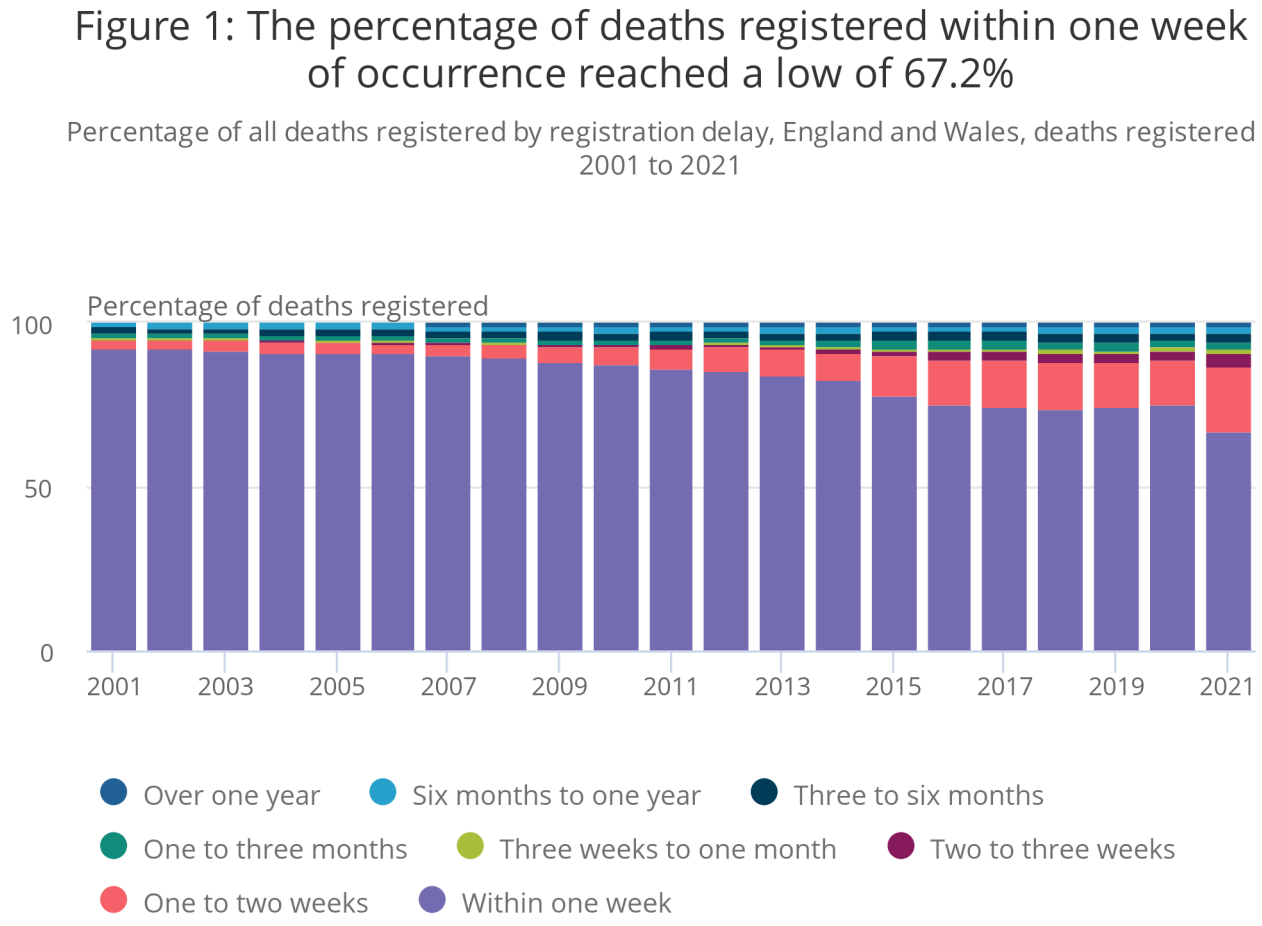
In 2021, 586,334 deaths were registered in England and Wales. To calculate a registration delay, a valid date of death occurrence and registration is required. This article analyses deaths where a registration delay can be determined. For further information, see Section 7: Data sources and quality. In 2021, there were 586,332 deaths registered in England and Wales that fit these criteria; this figure is used as the denominator for delay proportions in this article.

Of the 586,332 deaths registered in England and Wales, 99.0% were registered within one year (365 days or fewer). The proportion of deaths registered within one week (seven days or fewer) decreased statistically significantly to 67.2% in 2021 from 75.2% in 2020. Accounting for this decrease, the proportion of deaths with a registration delay over one week increased.

Deaths registered between one and two weeks (8 to 14 days) increased to 19.9% from 13.9% in 2020. Similarly, the proportion of deaths with a registration delay of over two weeks (15 days or more) increased to 12.9% from 10.9% in 2020 (Figure 1).

Figure 1: The percentage of deaths registered within one week of occurrence reached a low of 67.2%

Percentage of all deaths registered by registration delay, England and Wales, deaths registered 2001 to 2021



Source: Impact of registration delays on mortality statistics from the Office for National Statistics

Notes:

1. Figures include deaths of non-residents.
2. For definitions of time periods, see Section 7: Data sources and quality.
3. Registrations that do not provide enough information to calculate the delay are excluded.

3 . Registration delays by cause of death

The delay between death occurrence and registration can differ depending on the cause of death (see the accompanying dataset).

Generally, deaths from external causes (International Classification of Diseases (ICD-10) Chapter 20), such as accidental injuries and assaults, are least often registered within one week of occurrence. This is because they are referred to a coroner and have potentially lengthy inquests, and in some cases a criminal trial before the cause of death can be determined.

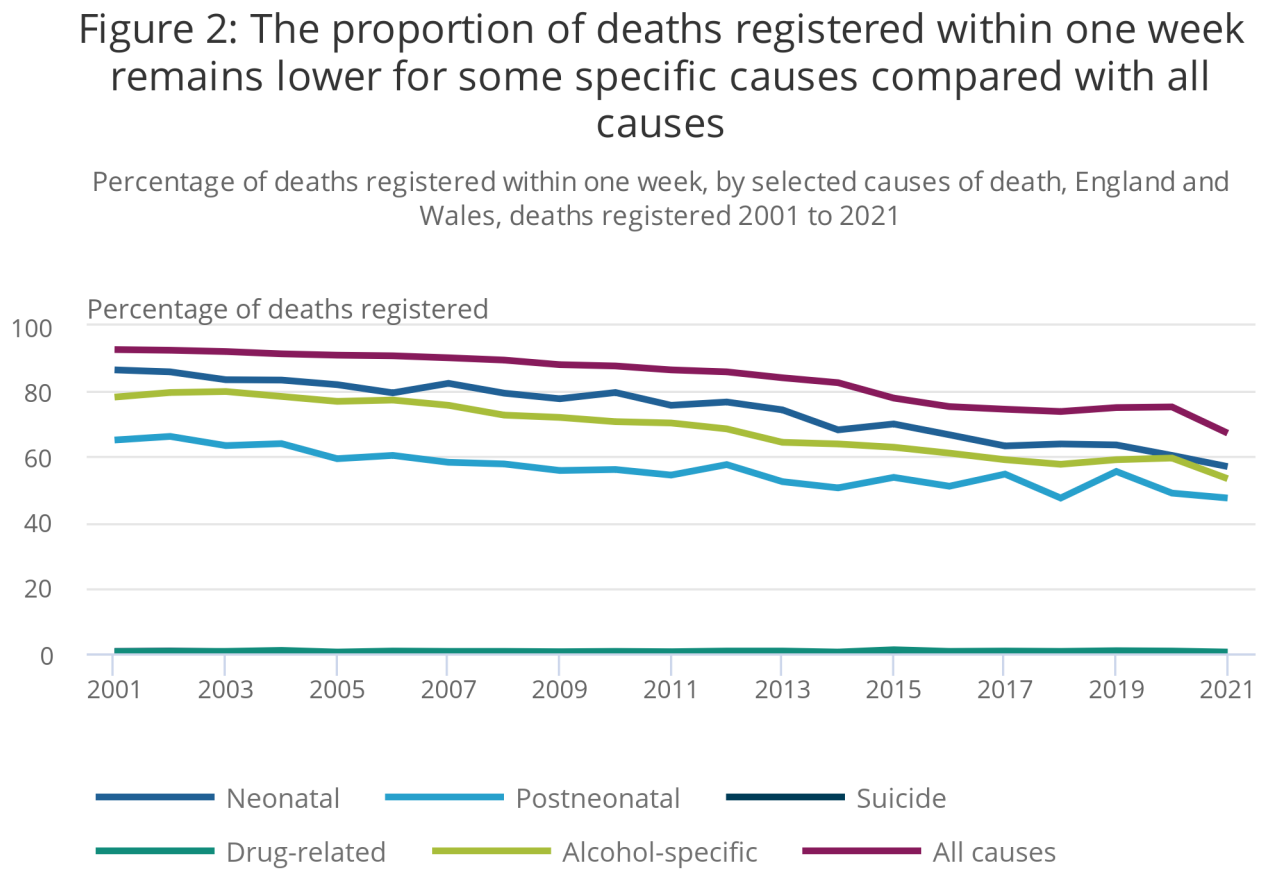
In 2021, the proportion of deaths from external causes registered within one week (seven days or fewer) decreased to 6.9% from 9.9% in 2020. Additionally, 27.2% had a registration delay of between three and six months (92 to 183 days), 25.7% of between six months and one year (184 to 365 days) and 15.6% took over one year (366 days or more) to be registered.

For specific causes of death that are more likely to require coroner's inquests (alcohol-specific, suicide, drug-related, neonatal and postneonatal deaths), timeliness decreases greatly in comparison with other causes (Figure 3). In 2021, suicide and drug-related deaths had the lowest proportion of deaths registered within one week at 0.1% and 0.4% respectively.

In 2021, most suicide-related deaths were registered between three and six months (92 to 183 days; 38.6%), whereas most drug-related deaths were registered between six months and one year (184 to 365 days; 40.2%).

Figure 2: The proportion of deaths registered within one week remains lower for some specific causes compared with all causes

Percentage of deaths registered within one week, by selected causes of death, England and Wales, deaths registered 2001 to 2021



Source: Impact of registration delays on mortality statistics from the Office for National Statistics

Notes:

1. Figures include deaths of non-residents.
2. Neonatal is the death of an infant aged under 28 days. Postneonatal is the death of an infant aged between 28 days and 1 year. Neonatal deaths are not assigned an underlying cause so are excluded from cause breakdowns but included in the all-cause total.
3. Suicide death figures include intentional self-harm for persons aged 10 years and over and injury or poisoning of undetermined intent for persons aged 15 years and over.
4. For definitions of time periods, see Section 7: Data sources and quality.
5. Registrations that do not provide enough information to calculate the delay are excluded.

4 . Registration delays by area

In Wales, 75.9% of deaths (27,419 of 36,135 deaths) were registered within one week (seven days or fewer) in 2021, compared with 66.6% in England (365,801 of 549,347 deaths).

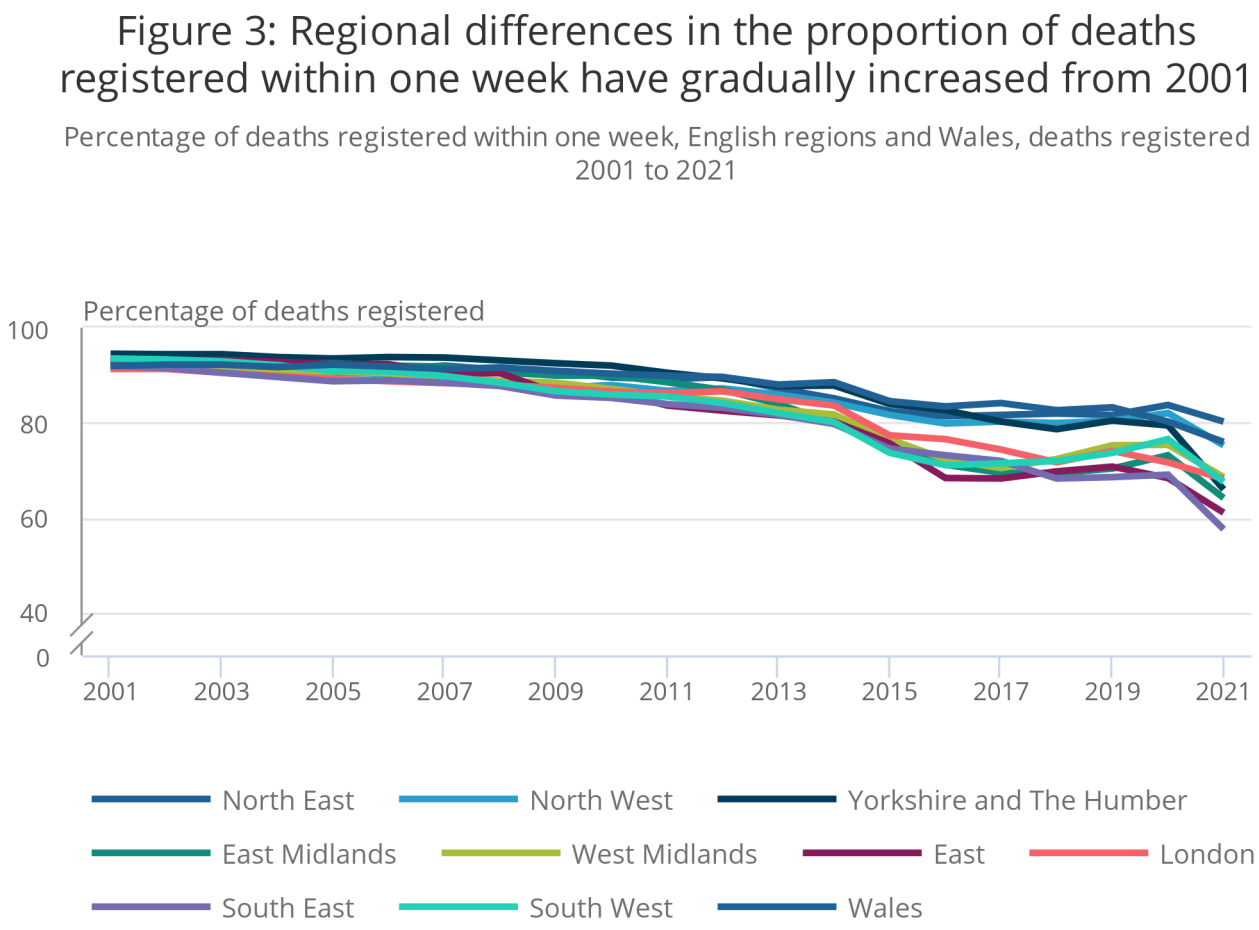
Of the English regions, the percentage of deaths registered within one week was highest in the North East (80.2%) and lowest in the South East (57.5%) in 2021 (Figure 3). The percentage of deaths registered within one week has gradually decreased across the regions of England, and Wales since the data time series began in 2001.

The percentage difference in deaths registered within one week across the regions in 2001 was 3.2 percentage points. This difference has increased over the years, to a range of 8.1 percentage points in 2014 and 22.7 percentage points in 2021.

Further geographical breakdowns are available in the accompanying dataset.

Figure 3: Regional differences in the proportion of deaths registered within one week have gradually increased from 2001

Percentage of deaths registered within one week, English regions and Wales, deaths registered 2001 to 2021



Source: Impact of registration delays on mortality statistics from the Office for National Statistics

Notes:

1. Geographies are based on boundaries as of November 2022.
2. For definitions of time periods, see Section 7: Data sources and quality.
3. Figures exclude non-residents.
4. Registrations that do not provide enough information to calculate the delay are excluded.

5 . Impact of registration delays on mortality statistics data

Impact of registration delays on mortality statistics
Dataset | Released 5 April 2023
Data for England and Wales on the time taken to register deaths by cause of death, age, sex, certification type and area of usual residence. Includes analysis on infant deaths.

6 . Glossary

Coroner

A coroner is a public official responsible for the investigation of violent, sudden, or suspicious deaths.

Inquest

An inquest is an inquiry into the cause of an unexplained, sudden, or violent death held by a coroner.

Registration delay

Mortality statistics are compiled from information supplied when deaths are certified and registered as part of civil registration, a legal requirement. According to the Births and Deaths Registration Act 1953, a death should be registered within five days unless it is referred to a coroner for investigation. Mortality statistics for a given time period can be based on occurrence (death date) or registration (registration date); registration delay is the difference between date of occurrence and date of registration.

Statistical significance

The term "significant" refers to statistically significant changes or differences. Significance has been determined using the 95% confidence intervals, where instances of non-overlapping confidence intervals between estimates indicate the difference is unlikely to have arisen from random fluctuation.

95% confidence intervals

A confidence interval is a measure of the uncertainty around a specific estimate. If a confidence interval is 95%, it is expected that the interval will contain the true value on 95 occasions if repeated 100 times. As intervals around estimates widen, the level of uncertainty about where the true value lies increases. The size of the interval around the estimate is strongly related to the sample and total number of deaths. More information is available on our uncertainty pages.

7 . Data sources and quality

Quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in our Mortality statistics in England and Wales QMI and User guide to mortality statistics.

Data coverage, timeliness, and registration delays

Mortality data give complete population coverage. They ensure the estimates are of high precision and are representative of the underlying population at risk.

In England and Wales, deaths should be registered within five days of the death occurring, but there are some situations that result in the death registration being delayed, occasionally extending into years.

Deaths that are considered unexpected, accidental, suspicious, unnatural or where there are concerns about the cause of death may be referred to a coroner. The coroner may order a post-mortem or carry out a full inquest to ascertain the reasons for the death. The coroner can only register the death once an investigation is concluded, and they are satisfied that the death has been thoroughly investigated with a correctly certified cause of death. The time taken to investigate the circumstances of the death can often result in a death registration exceeding the five-day period. Further information on coroner statistics can be found on the GOV.UK website.

We have developed a statistical model to estimate the number of deaths likely to have occurred in each week based on previous experience of the pattern of registration delays, including the effects of bank holidays. You can find out more about this statistical model in our Predicting total weekly death occurrences in England and Wales methodology. Results are shown in sheet "11" of the Deaths registered weekly in England and Wales dataset.

Methodology

As a way of measuring the quality of the mortality data, it is important to regularly assess the impact of registration delays. This article looks at registration delays, how this has changed over time, and what factors influence the delay, such as cause of death. Causes of death are coded using the World Health Organization's (WHO) International Classification of Diseases, Tenth Revision (ICD-10). More information on cause of death coding can be found in our User guide to mortality statistics.

In this article, registration delays have been grouped into the following categories for analysis:

- within one week (seven days or fewer)
- one to two weeks (8 to 14 days)
- two to three weeks (15 to 21 days)
- three weeks to one month (22 to 30 days)
- one to three months (31 to 91 days)
- three to six months (92 to 183 days)
- six months to one year (184 to 365 days)
- over one year (366 days or more)

Registrations that do not provide enough information to calculate the delay are excluded from analyses. This is usually when the date of death occurrence is missing from the death certificate.

This article focuses on delays based on registration year. This is because data based on registration year are seen as complete, that means the numbers of deaths taking over a year to be registered will not need to be revised in following years. However, a death occurrence can be registered at any point after the death, meaning that these numbers will need to be revised each year. Information based on year of occurrence is available in the accompanying dataset.

For analysis on 2021 deaths registration data, see our Deaths registered in England and Wales, and Deaths due to COVID-19, registered in England and Wales bulletins.

Further information can be found in the 2020 edition of this release.

Acknowledgment

We would like to thank Liam Beardsmore for their contribution to this release.

8 . Related links

Predicting total weekly death occurrences in England and Wales methodology
Methodology | Released 29 May 2020
Outlining a way in which we can estimate the total number of deaths that occurred within the latest week in England and Wales.

Deaths registered weekly in England and Wales
Bulletin | Released weekly
Provisional number of deaths registered in England and Wales, including deaths involving coronavirus (COVID-19), in the latest weeks.

Monthly mortality analysis in England and Wales
Bulletin | Released monthly
Provisional death registration data for England and Wales, broken down by sex, age and country. Includes deaths due to COVID-19 and leading causes of death.

Deaths registered in England and Wales: 2021 (refreshed populations)
Bulletin | Released 27 January 2023
Registered deaths by age, sex, selected underlying causes of death, leading causes of death. Death rates and registrations by residence area, single year of age.

Deaths due to COVID-19, registered in England and Wales: 2021
Article | Released 1 July 2022
Deaths registered in England and Wales due to coronavirus (COVID-19) by age, sex, region, indices of deprivation, place of death, and pre-existing condition.

9 . Cite this article

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