Office for National Statistics

Article

Impact of registration delays on mortality statistics in England and Wales: 2020

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

Contact:
Health Statistics and Research
health.data@ons.gov.uk
+44 1329 444110

Release date:
7 December 2021

Next release:
To be announced

Table of contents

1. Main points

2. Registration delays by year

3. Registration delays by cause of death

4. Registration delays by certification type

5. Registration delays by area

6. Impact of registration delays on mortality statistics data

7. Glossary

8. Data sources and quality

9. Related links

1 . Main points

- The median time between a death occurring and being registered (registration delay) in England and Wales increased from four days in 2019 to five days in 2020; this could be explained by an increase in the number of deaths registered (530,841 in 2019 and 607,922 in 2020).
- In 2020, 75.2% of deaths were registered within one week (seven days or fewer) of the death occurring.
- In 2020, Wales had a higher percentage (80.2%) of deaths registered within one week compared with England (74.9%) for the eighteenth consecutive year.
- Within England, the percentage of deaths registered within one week was highest in the North East (83.7%) and lowest in the East of England (68.3 %).
- The proportion of coroner-certified deaths registered within two weeks (14 days or fewer) reached a low of 40.9% in 2020; coroner-certified deaths registered between two weeks and three months (15 to 91 days) reached a high of 28.6%.

2 . Registration delays by year

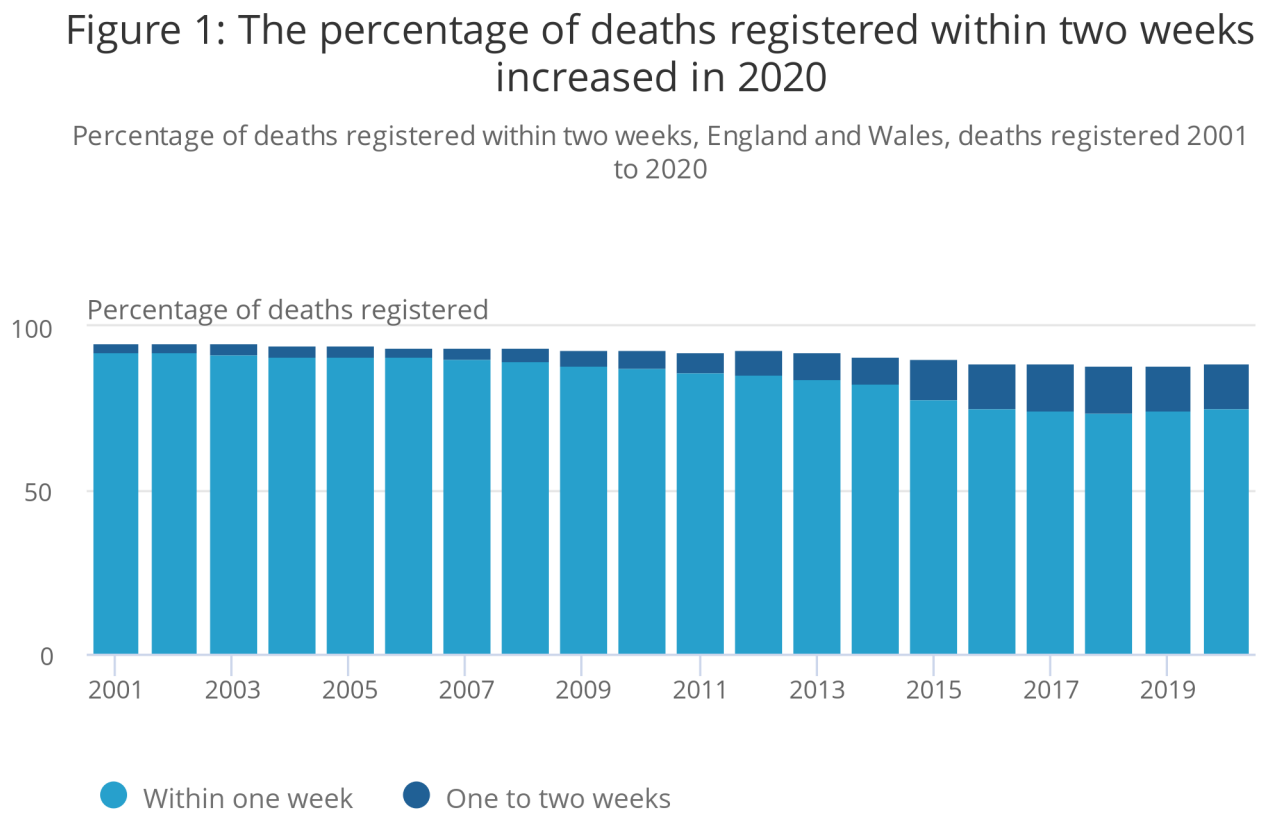
Registration delay is the difference between the date of death occurrence and date of death registration. A death that occurred and was registered on the same day has a delay of zero days, while a death that was registered the day after it occurred has a delay of one day. From 2001 to 2019, registration delays generally increased; for more information, see the 2019 edition of this release.

In 2020, 607,922 deaths were registered in England and Wales. Of these, 99.3% were registered within one year (365 days or fewer).

While there was an increase in the number of deaths registered in 2020 compared with 2019 (530,841 deaths), this did not affect the proportion of deaths registered within one week (seven days or fewer). Deaths registered within one week increased marginally for the second consecutive year, to 75.2% from 75.0% in 2019. Deaths registered between one and two weeks (8 to 14 days) also increased to 13.9% from 13.5% in 2019 (Figure 1).

Figure 1: The percentage of deaths registered within two weeks increased in 2020

Percentage of deaths registered within two weeks, England and Wales, deaths registered 2001 to 2020



Source: Office for National Statistics

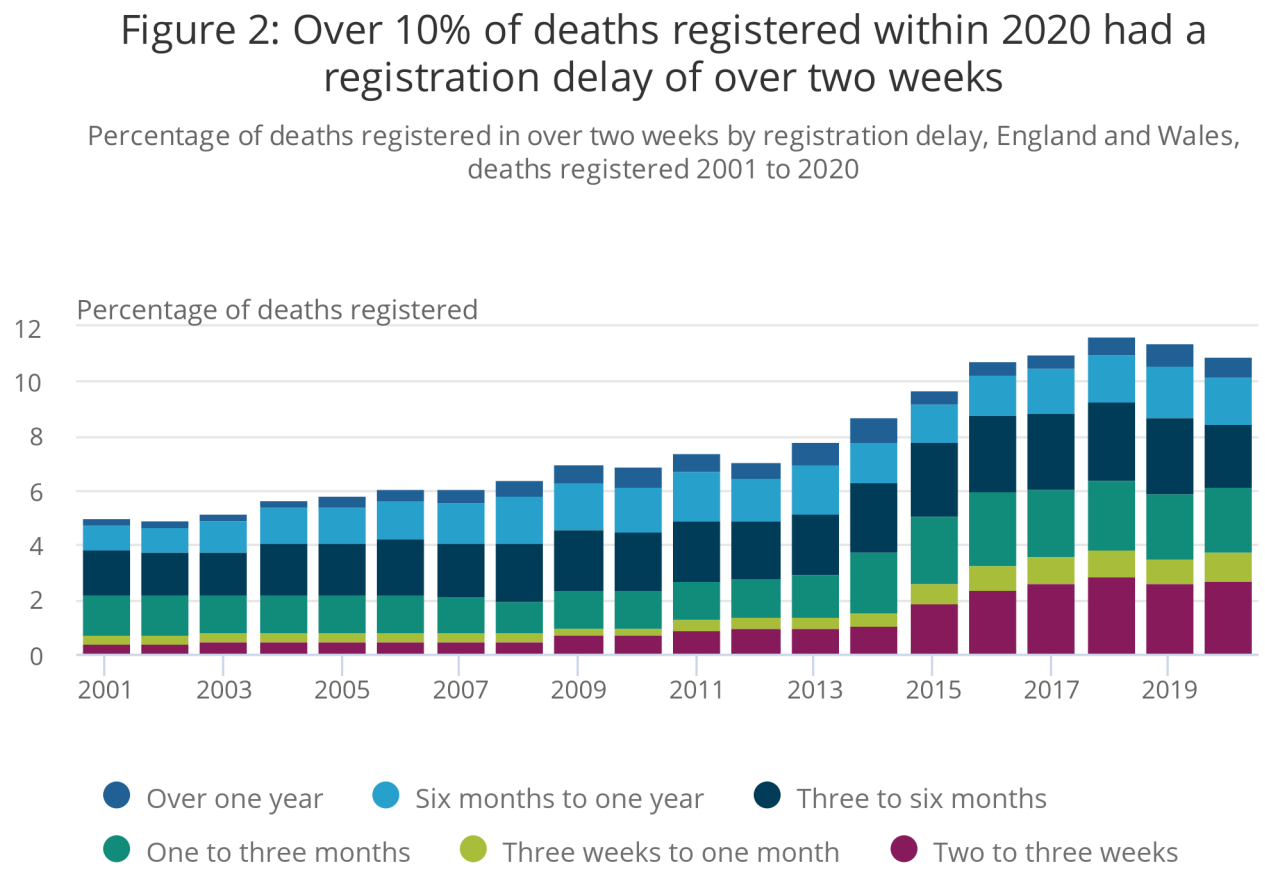
Notes:

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

The proportion of deaths with a registration delay of over two weeks (15 days or more) decreased for the second consecutive year, to 10.9% from 11.5% in 2019. This could have been driven by deaths due to coronavirus (COVID-19; the leading cause of death in 2020), which are typically registered within one week (see Section 3: Registration delays by cause of death).

Figure 2: Over 10% of deaths registered within 2020 had a registration delay of over two weeks

Percentage of deaths registered in over two weeks by registration delay, England and Wales, deaths registered 2001 to 2020



Source: Office for National Statistics

Notes:

1. Figures include deaths of non-residents.
2. For definitions of time periods, see 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 accompanying dataset).

Registration delays in the most common causes of death

In 2020, deaths due to coronavirus (COVID-19) had the highest percentage of deaths registered within one week (seven days or fewer), at 86.5% of 73,766 COVID-19 deaths.

Of the chapters in the International Classification of Diseases, Tenth Revision (ICD-10), neoplasms (cancers; Chapter 2) had the highest percentage of deaths registered within one week (85.4% of 151,116 deaths in 2020).

Causes of death with the longest registration delays

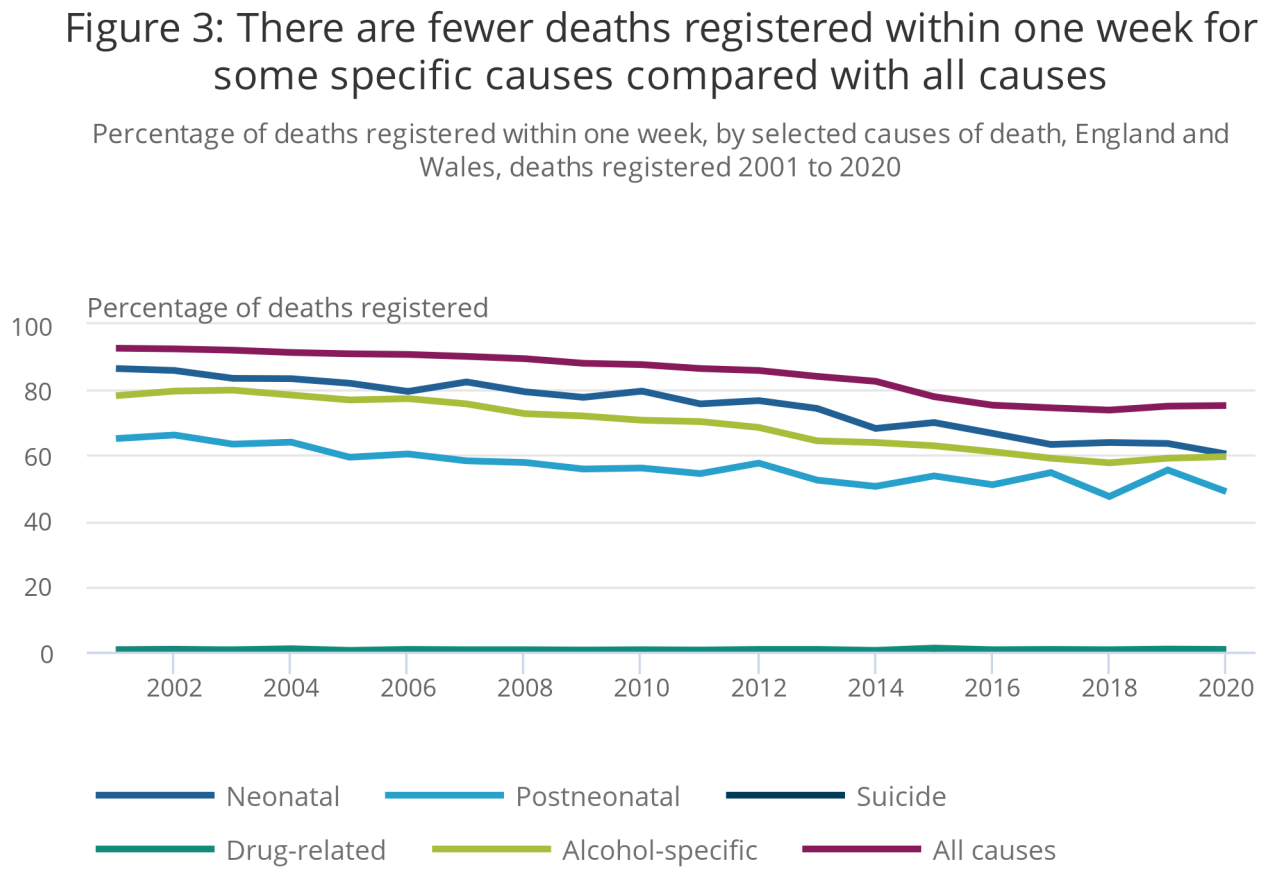
Generally, deaths from external causes (ICD-10 Chapter 20), such as accidental injuries and assaults, are least often registered within one week of occurrence. This is because they are referred to a coroner and have potentially lengthy inquests, and in some cases a criminal trial, before the cause of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

In 2020, deaths from external causes registered within one week remained at a low of 9.9%. Whereas 28.9% had a registration delay of between three and six months (92 to 183 days), 26.3% of between six months and one year (184 to 365 days), and 9.8% took over one year (366 days or more) to be registered.

For specific causes of death that require coroner's inquests (alcohol-specific, suicide, drug-related, neonatal and postneonatal deaths), timeliness decreases greatly in comparison with other causes (Figure 3). In 2020, suicide and drug-related deaths had the lowest proportion of deaths registered within one week at 0.2% and 0.7% respectively.

Figure 3: There are fewer deaths registered within one week 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 2020



Source: Office for National Statistics

Notes:

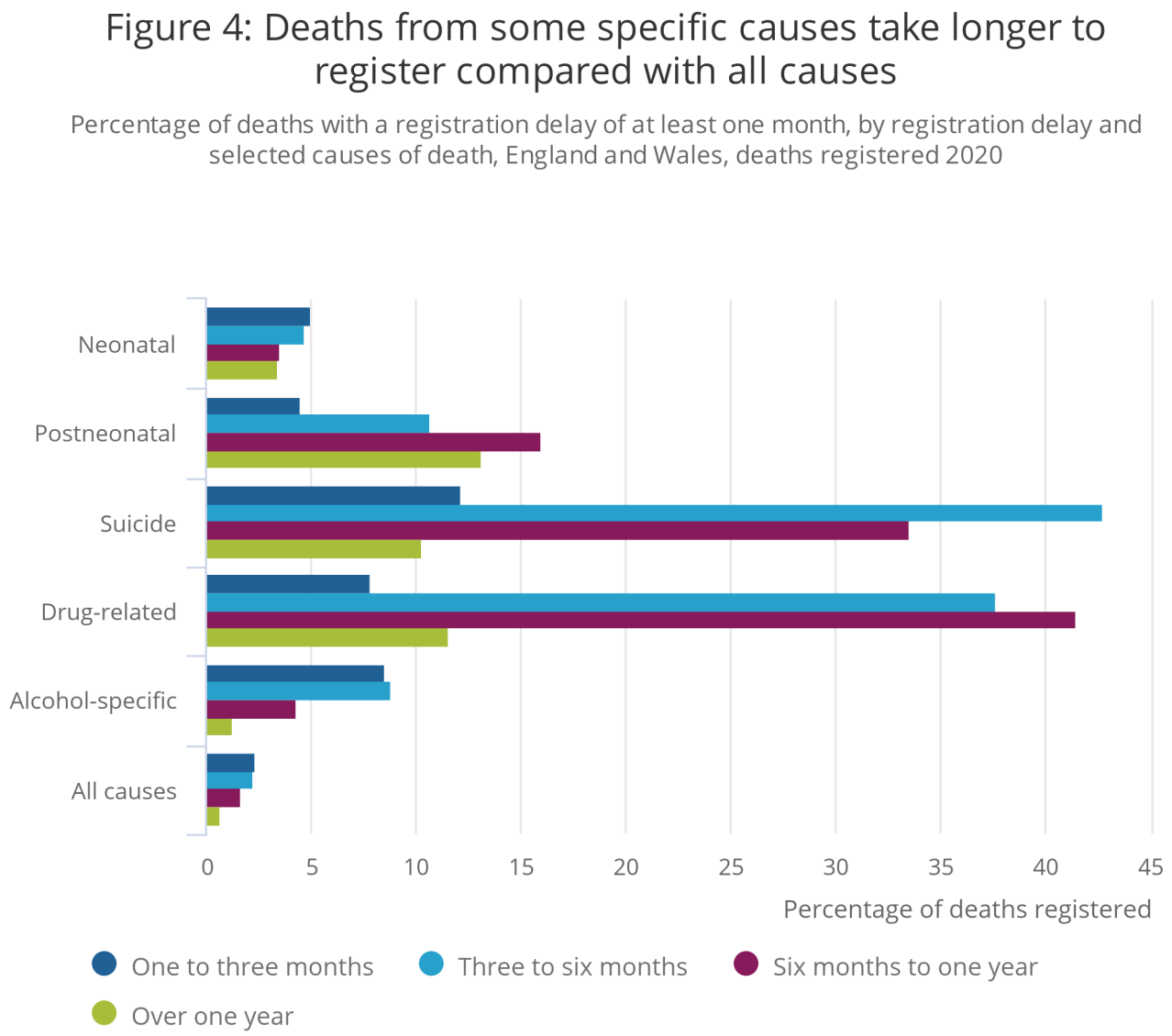
1. Figures include deaths of non-residents but exclude neonatal deaths (persons aged under 28 days) which are not assigned an underlying cause.
2. For definitions of time periods, see Data sources and quality.
3. Registrations that do not provide enough information to calculate the delay are excluded.
4. Suicide death figures are for persons aged 10 years and over.

These specific causes of death have higher registration delays than all causes combined (Figure 4). In 2020, most suicide-related deaths were registered between three and six months (92 to 183 days; 42.7%), whereas most drug-related deaths were registered between six months and one year (184 to 365 days; 41.5%).

In 2020, 10.3% of suicide and 11.6% of drug-related deaths took over one year (366 days or more) to be registered. More than 91% of suicide and drug-related deaths required an inquest and post-mortem.

Figure 4: Deaths from some specific causes take longer to register compared with all causes

Percentage of deaths with a registration delay of at least one month, by registration delay and selected causes of death, England and Wales, deaths registered 2020



Source: Office for National Statistics

Notes:

1. Figures include deaths of non-residents but exclude neonatal deaths (persons aged under 28 days) which are not assigned an underlying cause.

2. Registrations that do not provide enough information to calculate the delay are excluded.

3. For definitions of time periods, see Data sources and quality.

4. Suicide death figures are for persons aged 10 years and over.

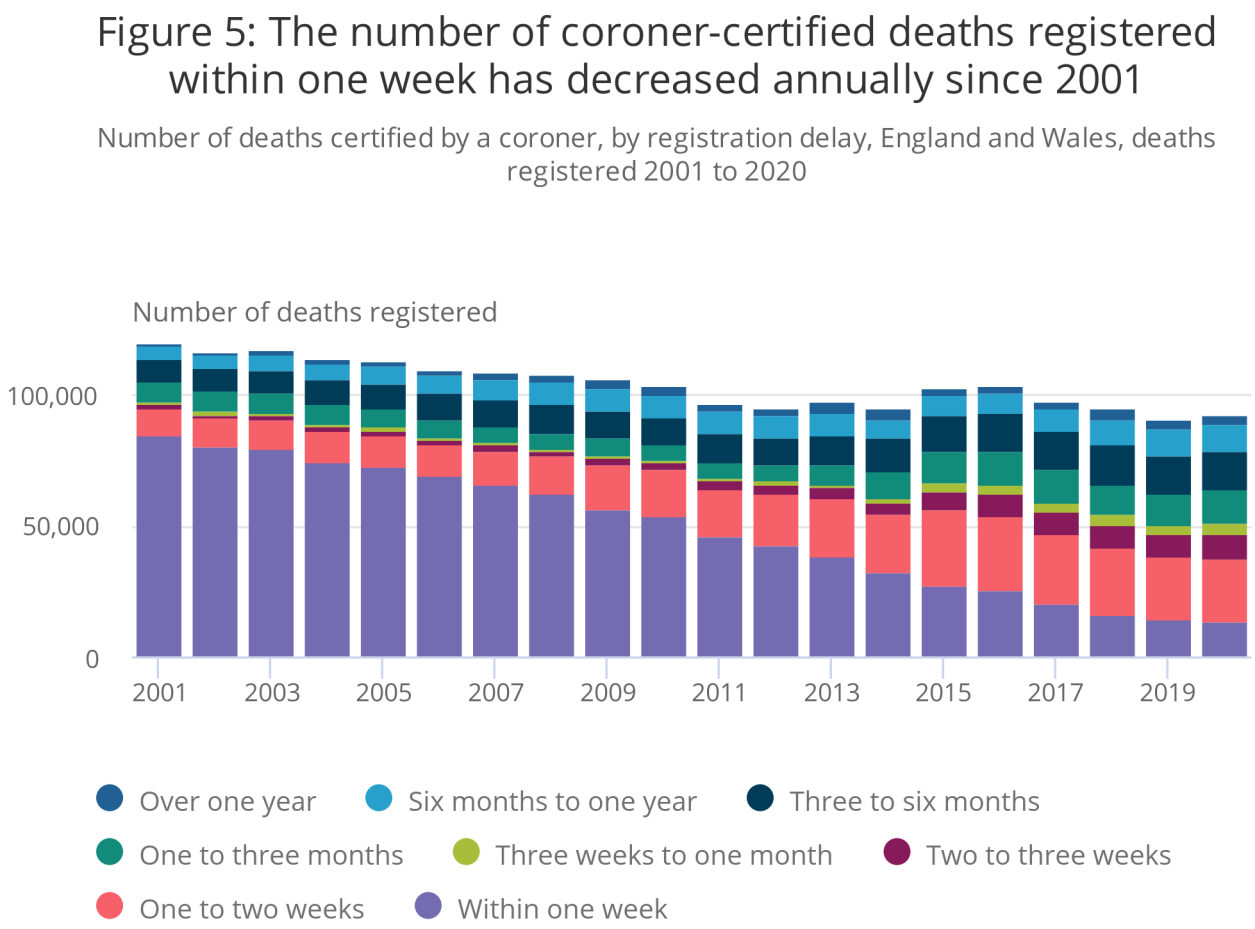
4 . Registration delays by certification type

Deaths certified by a coroner after inquest generally take much longer to be registered than the more "routine" deaths certified by a doctor. For example, some deaths are re-registered later because of a retrial or an official inquiry. Alternatively, delays may occur where there is no body of the deceased (but they are presumed to be dead), or a body is found after many years.

Coroner-certified deaths registered within two weeks (14 days or fewer) reached a low of 40.9% in 2020, whereas deaths registered between two weeks and three months reached a high of 28.6% (Figure 5).

Figure 5: The number of coroner-certified deaths registered within one week has decreased annually since 2001

Number of deaths certified by a coroner, by registration delay, England and Wales, deaths registered 2001 to 2020



Source: Office for National Statistics

Notes:

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

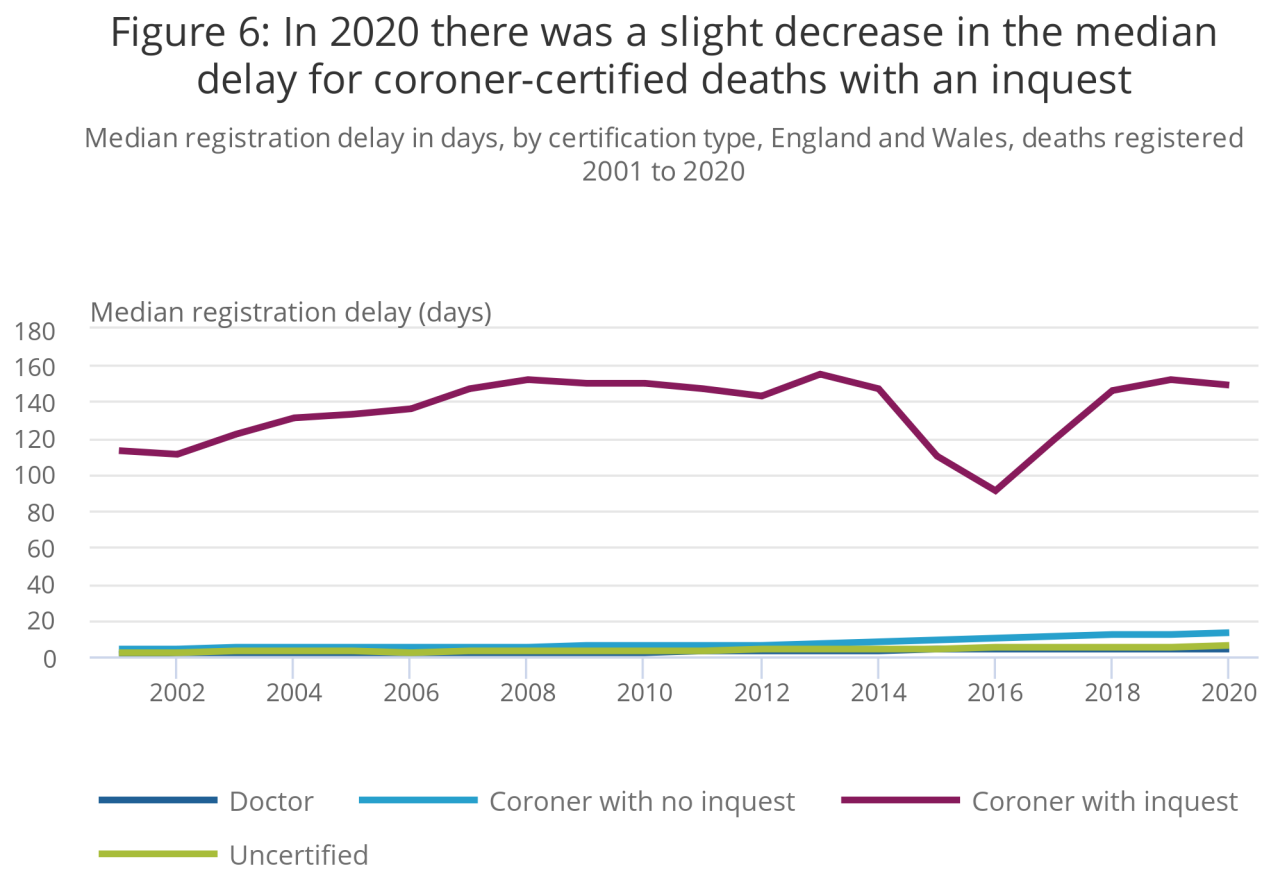
The proportion of deaths registered by a doctor reached a high of 84.3% in 2020. The proportion of coroner-certified deaths with an inquest reduced from 5.9% in 2019 to 5.1% 2020.

To reduce the impact of outliers on the measurement of the average registration delay, we calculate the median registration delay (see accompanying dataset).

In 2020, the median delay for coroner-certified deaths with an inquest was 149 days, compared with 13 days for coroner-certified deaths without an inquest (Figure 6).

Figure 6: In 2020 there was a slight decrease in the median delay for coroner-certified deaths with an inquest

Median registration delay in days, by certification type, England and Wales, deaths registered 2001 to 2020



Source: Office for National Statistics

Notes:

1. Figures include deaths of non-residents.

2. Registrations that do not provide enough information to calculate the delay are excluded.

For information on registration delays for coroner-certified deaths with an inquest between 2014 and 2016, see the 2019 edition of this release.

5 . Registration delays by area

In Wales, 80.2% of deaths (29,990 of 37,399 deaths) were registered within one week (seven days or fewer) in 2020, compared with 74.9% in England (426,883 of 569,698 deaths).

Of the English regions, the percentage of deaths registered within one week was highest in the North East (83.7%) and lowest in the East of England (68.3%) in 2020 (Table 1). Further geographical breakdowns are available in the accompanying dataset.

Table 1: The proportion of deaths registered within one week varied across the English regions and Wales in 2020
Percentage of deaths registered within one week, registration year 2020

Area	Total number of deaths	% registered within one week
England, Wales and Elsewhere	607,920	75.2
England	569,698	74.9
North East	32,228	83.7
North West	83,990	82.0
Yorkshire and the Humber	60,451	79.4
East Midlands	52,055	73.1
West Midlands	64,739	75.3
East	63,972	68.3
London	59,688	71.6
South East	91,410	69.0
South West	61,165	76.5
Wales	37,399	80.2

Source: Office for National Statistics

Notes

1. Geographies are based on boundaries as of August 2021.
2. Figures for England, Wales, and elsewhere include deaths of non-residents, all others exclude non-residents.
3. Registrations that do not provide enough information to calculate the delay are excluded, therefore figures may not match those elsewhere.
4. For definitions of time periods, see Data sources and quality.

6 . Impact of registration delays on mortality statistics data

Impact of registration delays on mortality statistics
Dataset | Released 7 December 2021
Data for England and Wales on the time taken to register deaths in 2021, by cause of death, area of usual residence, age, sex, and certification type.

7 . Glossary

Neonatal

The death of an infant aged under 28 days.

Postneonatal

The death of an infant aged between 28 days and 1 year.

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.

Coronavirus (COVID-19)

COVID-19 refers to the "coronavirus disease 2019" and is a disease that can affect the lungs and airways. It is caused by a type of coronavirus. Further information is available from the World Health Organization (WHO).

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.

8 . Data sources and quality

Quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in the 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 considered unexpected, accidental, or suspicious will be referred to a coroner, who 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.

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 the "Estimated total deaths 2021" tab 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.

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, which 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 2020 deaths registration data, see Deaths registered in England and Wales, and Deaths due to COVID-19, registered in England and Wales.

Further information can be found in the 2019 edition of this release.

Acknowledgment

We would like to thank Rachel Woods, Heidi Wilson, Fred Barton, and Jon Lewis for their contribution to this release.

9 . 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 counts of the number of deaths registered in England and Wales, including deaths involving the coronavirus (COVID-19) pandemic, by age, sex and region, in the latest weeks for which data are available.

Monthly mortality analysis in England and Wales
Bulletin | Released 23 November 2021
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: 2020
Bulletin | Released 6 July 2021
Registered deaths by age, sex, selected underlying causes of death and the leading causes of death. Contains death rates and death registrations by area of residence and single year of age.

Deaths due to COVID-19, registered in England and Wales: 2020
Article | Released 6 July 2021
Deaths registered in England and Wales due to coronavirus (COVID-19) by age, sex, region, place of death, and pre-existing condition.