

Statistical bulletin

Deaths registered in England and Wales: 2020

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.



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1 . Other pages in this release

More information regarding the ongoing coronavirus (COVID-19) pandemic can be found in:

- [Deaths due to COVID-19, registered in England and Wales: 2020](#)
- [Deaths registered weekly in England and Wales, provisional](#)

2 . Main points

- In 2020, there were 607,922 deaths registered in England and Wales; an increase of 14.5% compared with 2019 (530,841 deaths).
- In 2020, there were more male deaths registered than female deaths (308,069 male deaths, 299,853 female deaths); the opposite of 2019 and the first time this has been the case since 1981.
- Taking into account the population size and age structure, age-standardised mortality rates (ASMRs) in England and Wales increased significantly, by 14.6% for males and 11.9% for females; ASMRs for 2020 were significantly higher than every year back to 2010 in males and 2009 in females.
- The North East was the region of England with the highest age-standardised mortality rates in both males and females for the second consecutive year; the South West was the region with the lowest ASMRs in 2020, replacing London in 2019.
- In Wales, the highest age-standardised mortality rate for males was in Merthyr Tydfil and for females was in Blaenau Gwent; the lowest age-standardised mortality rates for both males and females was in Monmouthshire.
- The leading cause of death in England and Wales in 2020 was the coronavirus (COVID-19), with 73,766 deaths (12.1% of all deaths); the second most common cause of death was dementia and Alzheimer's disease, accounting for 11.5% of all deaths registered in 2020 (compared with 12.5% in 2019, when dementia and Alzheimer's disease was the leading cause of death).
- In 2020, the leading cause of death for males was COVID-19 (40,995 deaths; accounting for 13.3% of all male deaths), and for females was dementia and Alzheimer's disease (45,922 deaths; 15.3% of all female deaths).

3 . Number of deaths registered in 2020

In 2020, there were 607,922 deaths registered in England and Wales; this was an increase of 14.5% compared with 2019 (530,841 deaths). This increase was linked to the ongoing coronavirus (COVID-19) pandemic, with the first deaths due to COVID-19 registered in England and Wales in March 2020. A larger increase in deaths compared with 2019 was seen in males (16.1% higher) than females (12.9% higher) (Figure 1). This may be explained by the higher numbers of COVID-19 deaths in males; the mortality rate for deaths due to COVID-19 was significantly higher in males than females in 2020. For further information please see our [Deaths registered due to COVID-19, in England and Wales, 2020](#) publication.

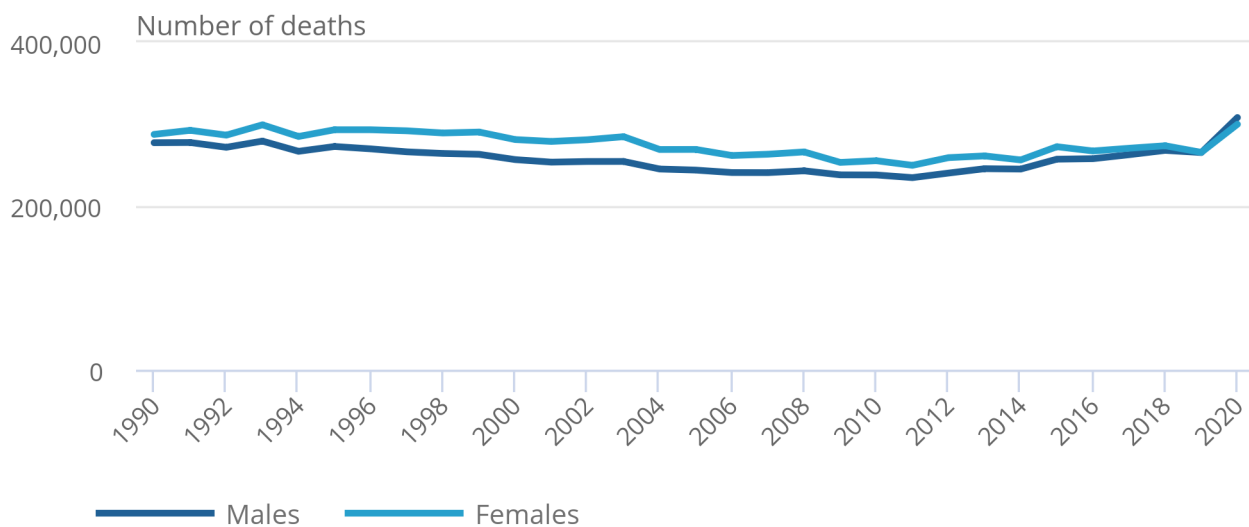
Figure 1 shows that the difference in the number of deaths between males and females had been decreasing, with a difference of 241 deaths between females and males in 2019. In 2020 the pattern reversed, with 8,216 more deaths in males than females; this was the first time that more males died than females in England and Wales since 1981.

Figure 1: In 2020, the number of deaths in England and Wales increased by 14.5% compared with 2019

Deaths registered in England and Wales, 1990 to 2020

Figure 1: In 2020, the number of deaths in England and Wales increased by 14.5% compared with 2019

Deaths registered in England and Wales, 1990 to 2020



Source: Office for National Statistics – Deaths registered in England and Wales

Notes:

1. Based on deaths registered in each calendar year.
2. Updates to the coding framework used to code cause of death took place in 2011 and 2014. More information on these updates is available in the [Measuring the data](#) section.

Looking at our entire data time series back to 1838 (Figure 2), the number of deaths registered in 2020 was the second highest. The only year to have a higher number of deaths registered was 1918 (611,861 deaths), when the 1918 pandemic occurred (known as the “Spanish flu” pandemic). However, it is important to recognise that the population of England and Wales has grown over this time period, for this reason we have included crude mortality rates per 100,000 persons, which provide fairer comparisons between years than numbers of deaths alone. The crude mortality rates showed that rates in 2020 were the highest since 2003. For mortality rates taking into account changes in age structure see age-standardised mortality rates in Section 4.

Figure 2: The number of deaths in 2020 was greater than every year in our data time series, except for 1918

Deaths registered and crude mortality rates, in England and Wales, 1838 to 2020

Notes:

1. Based on deaths registered in each calendar year.

[Download the data](#)

More about coronavirus

- Find the latest on [coronavirus \(COVID-19\) in the UK](#).
- [Explore the latest coronavirus data](#) from the ONS and other sources.
- All ONS analysis, summarised in our [coronavirus roundup](#).
- View [all coronavirus data](#).
- Find out how we are [working safely in our studies and surveys](#).

4 . Age-standardised mortality rates by sex

Age-standardised mortality rates (ASMRs) are a better measure of mortality than the number of deaths, as they account for the population size and age structure.

Since 2001, mortality rates had generally been decreasing. However, following the early 2010s, we have seen a significant [slowdown in mortality improvements](#), with ASMRs in recent years declining at a slower rate than before 2010 (Figure 2).

In 2019, mortality rates for both males and females significantly decreased in comparison with the previous year. In 2020, the age-standardised mortality rates, for both males and females, significantly increased. There were 1,236.7 deaths per 100,000 males (14.6% higher than in 2019) and 894.2 deaths per 100,000 females (11.9% higher than in 2019).

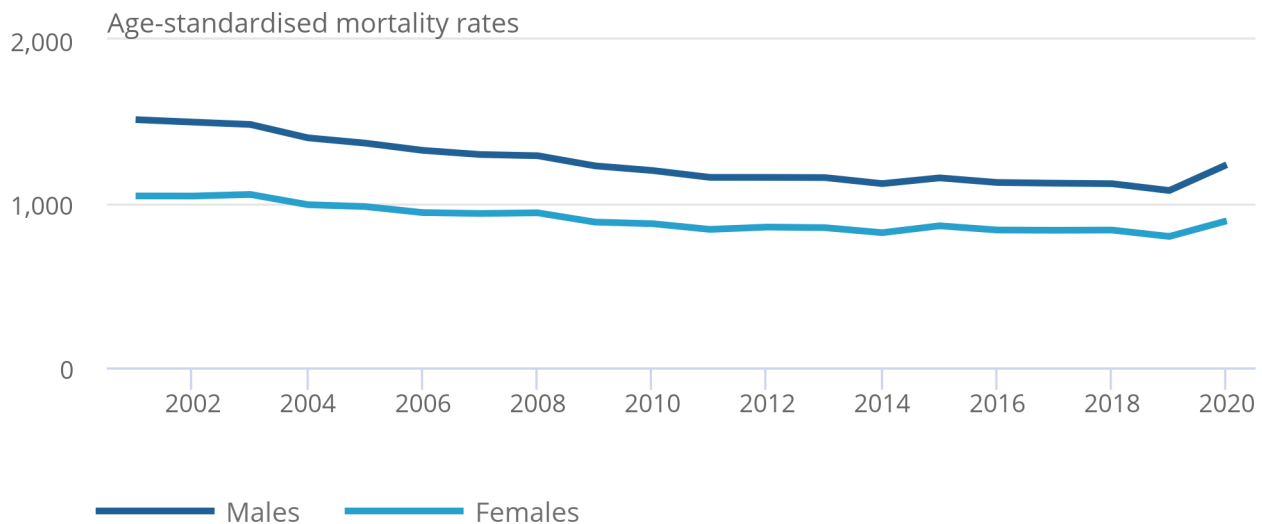
Taking account of changes to the population size and structure over time, mortality rates for 2020 were [statistically significantly](#) higher than every year back to 2010 in males and 2009 in females.

Figure 3: Age-standardised mortality rates for males and females significantly increased in 2020

Age-standardised mortality rates, England and Wales, 1994 to 2020

Figure 3: Age-standardised mortality rates for males and females significantly increased in 2020

Age-standardised mortality rates, England and Wales, 1994 to 2020



Source: Office for National Statistics – Deaths registered in England and Wales

Notes:

1. Based on deaths registered in each calendar year.
2. These rates are for all ages and are standardised to the 2013 European Standard Population.

5 . Age-standardised mortality rates by area

In 2020, there were 569,700 deaths from all causes in England and 37,399 deaths in Wales. In both countries, the age-standardised mortality rates (ASMRs) were significantly higher for males (1,231.1 deaths per 100,000 males in England; 1,297.3 deaths per 100,000 males in Wales) than for females (888.9 deaths per 100,000 females in England; 963.5 deaths per 100,000 females in Wales).

In Wales, the ASMRs were significantly higher than in England for both males and females, as seen in previous years. ASMRs for males and females in both countries significantly increased in 2020 compared with 2019.

In England, the region with the highest male ASMR in 2020 was the North East, which had a mortality rate of 1,399.0 deaths per 100,000 males. This is compared with the South West, which had the lowest male rate of 1,098.3 per 100,000 males. The highest ASMR for females was also in the North East (1,044.7 deaths per 100,000 females), and the lowest ASMR was in the South West (791.4 deaths per 100,000 females) (Table 1).

Table 1: The North East was the English region with the highest age-standardised mortality rate for males and females

Age-standardised mortality rates by sex, in English regions and Wales, 2020

Region	Age-standardised mortality rate per 100,000 males	Age-standardised mortality rate per 100,000 females
North East	1,399.0	1,044.7
North West	1,392.4	1,024.4
Yorkshire and the Humber	1,357.6	968.2
East Midlands	1,277.3	921.4
West Midlands	1,335.6	950.1
East of England	1,144.4	826.0
London	1,171.0	812.0
South East	1,106.0	806.7
South West	1,098.3	791.4
Wales	1,297.3	963.5

Source: Office for National Statistics – Deaths registered in England and Wales

Notes

1. Based on deaths registered in a calendar year.
2. These rates are for all ages and are standardised to the 2013 European Standard Population.
3. Geographies are based on boundaries correct as of May 2021.

The North East was also the English region with the highest ASMRs in 2019, but the South West replaced London (lowest in 2019) as the region with the lowest mortality rates in 2020. The difference between the regions with the highest and lowest mortality rates has increased in recent years. In 2020, there was a difference of 277.1 deaths per 100,000 population between the region with the highest (North East) and lowest (South West) mortality rate. This has increased from 244.6 in 2019 and 238.0 in 2018, showing a greater range of mortality rates across England.

Figure 4: Age-standardised mortality rates, males and females, local authorities in England and Wales, 2020

Notes:

1. Points on the map are placed at the centre of the local area they represent and do not show the actual location of deaths. The size of the circle is proportional to the number of deaths.
2. Figures are for deaths registered rather than deaths occurring in each month.
3. Figures exclude death of non-residents; geographical boundaries are based on the most up-to-date information available at the time of publication.

[Download the data](#)

Among English local authorities, Manchester had the highest overall mortality rate for males (1,852.6 deaths per 100,000 males; replacing Blackpool in 2019), and the City of London had the lowest mortality rate for males (563.6 deaths per 100,000 males; unchanged from 2019). The highest overall ASMR for females was in Middlesbrough (1,246.7 deaths per 100,000 females), replacing Blackburn with Darwen in 2019. Whereas, the City of London also had the lowest ASMR for females, with 379.5 deaths per 100,000. It is worth noting that the City of London population is small, therefore age-standardised rates for this local authority may be unreliable. So for reference, the second-lowest ASMR in England for both males and females was Kensington and Chelsea (797.2 deaths per 100,000 males and 544.2 deaths per 100,000 females; this changed from Westminster in 2019). For information, the English local authority that had the highest ASMR for deaths due to COVID-19 for males was Newham (370.1 deaths per 100,000 males) and for females was Tameside (222.5 deaths per 100,000 females). The English local authority with the lowest ASMR for deaths due to COVID-19 for males was South Hams (22.1 deaths per 100,000 males) and for females was Teignbridge (16.0 deaths per 100,000 females).

In Wales, Merthyr Tydfil had the highest overall male ASMR, at 1,603.5 deaths per 100,000 males, the same local authority as in 2019. The lowest male mortality rate in Wales remained in Monmouthshire (1,008.7 deaths per 100,000 males). The lowest overall female mortality rate was also in Monmouthshire (722.4 deaths per 100,000 females), while Blaenau Gwent had the highest rate for females (1,292.1 deaths per 100,000 females). These areas are both changes from 2019. Merthyr Tydfil was also the Welsh local authority with the highest ASMR for deaths due to COVID-19 for males (343.2 deaths per 100,000 males) whereas for females Rhondda Cynon Taff had the highest ASMR for deaths due to COVID-19 (228.5 deaths per 100,000 females).

More information regarding deaths due to COVID-19, by local authority, is available in [Deaths due to COVID-19, registered in England and Wales: 2020](#).

6 . Leading causes of death

The Office for National Statistics' (ONS's) [leading causes of death groupings](#) are based on a list developed by the World Health Organization (WHO). This categorises causes of death using the [International Classification of Diseases, tenth edition \(ICD-10\)](#) into groups that are epidemiologically more meaningful than single ICD-10 codes, for the purpose of comparing the most common causes of death in the population. Causes such as cancer and circulatory diseases are split into different subtypes, with the aim to provide policymakers with enough detail to generate appropriate health policies and interventions. For this year, we have also included deaths due to COVID-19 as a leading cause group (ICD-10 codes U.071, U.072, U10.9; for further information on definitions of COVID-19 deaths see the glossary section of Deaths due to COVID-19, registered in England and Wales: 2020.

This analysis presents the five leading cause groups with the highest numbers of deaths registered in 2020, for each age and sex group. Where these five most-common causes do not cover at least 40% of the deaths in a given age and sex group, additional leading causes are included until at least 40% of the total deaths are covered by the analysis.

Overall leading causes of death

In England and Wales as a whole, the leading causes of death accounted for 42.4% of all deaths registered in 2020. COVID-19 was the overall leading cause of death, replacing dementia and Alzheimer's disease which was the leading cause in 2019. There were 73,766 deaths with an underlying cause of COVID-19, accounting for 12.1% of all deaths registered in 2020.

Following COVID-19, the remaining leading causes of death in England and Wales were:

- dementia and Alzheimer's disease (70,047 deaths; 11.5% of all deaths)
- ischaemic heart diseases (55,807 deaths; 9.2%)
- cerebrovascular diseases (29,737 deaths; 4.9%)
- malignant neoplasm of trachea, bronchus and lung (28,745 deaths; 4.7%)

All of these cause groups were also leading causes in 2019, but the proportion of deaths they accounted for was higher than observed in 2020. It is worth noting that this bulletin analyses the [underlying cause of death](#) only, so does not consider other contributory conditions or diseases mentioned on the death certificate. The majority (90.2%) of deaths that mentioned COVID-19 on the death certificate in 2020 had COVID-19 as the underlying cause of death; where these deaths had another cause mentioned as a contributory factor, this would not be included in our leading causes analysis. For example, dementia and Alzheimer's disease was mentioned as a pre-existing condition on 18,420 death certificates where COVID-19 was the underlying cause of death; these deaths would not be included in the dementia and Alzheimer's figures presented in this bulletin.

Chronic lower respiratory diseases, the third leading cause of death in 2019 (31,221 deaths, accounting for 5.9% of all deaths in 2019), was not a leading cause in 2020. The number of deaths with this underlying cause decreased by 9.3% between 2019 and 2020 (28,320 deaths, 4.7% of all deaths). This is in line with our [analysis of deaths registered in 2020 compared with the five-year average \(excess deaths\)](#), which showed that, in 2020 deaths from certain respiratory causes such as bronchitis, emphysema and other chronic obstructive pulmonary diseases were significantly below the number we would expect based on the average for 2015 to 2019.

When looking at England and Wales separately the leading causes of death were similar. The only variation was in the fifth leading cause of death. Chronic lower respiratory diseases was the fifth leading cause in Wales (1,827 deaths, 4.9% of all deaths registered) whereas malignant neoplasm of the trachea, bronchus and lung was fifth most-common in England (26,936 deaths, 4.7% of all deaths registered). For further information, see Tables 9a to 9c of the [accompanying dataset](#).

Leading causes of death in males and females

In 2020, COVID-19 was the overall leading cause of death in males (40,995 deaths) accounting for 13.3% of all male deaths. The second most common cause of death for males was ischaemic heart diseases, accounting for 11.7% (35,905 deaths) of all male deaths registered, a decrease from 2019 (13.1% of all male deaths registered) where ischaemic heart disease was the leading cause of death in males.

Despite the COVID-19 pandemic, dementia and Alzheimer's disease remained the leading cause for females overall, with 45,922 deaths registered from this cause in 2020 (15.3% of all female deaths). COVID-19 was the second overall leading cause of death among females (32,771), accounting for 10.9% of all female deaths registered in 2020. More detailed information on COVID-19 deaths is available in Deaths due to COVID-19, registered in England and Wales: 2020.

Leading causes of death by age group

Looking at the leading causes of death in 2020 by sex and age group, COVID-19 was the most common cause of death for males aged 80 years and over and for females aged 65 to 79 years (Table 2). The leading causes for most other age groups remained the same as in 2019. The following changes to leading causes by age happened in 2020:

- for males aged 35 to 49 years, accidental poisoning returned to being the leading cause of death (as seen in 2018), replacing intentional self-harm and event of undetermined intent, which became the third leading cause of death for this group in 2020
- COVID-19 replaced dementia and Alzheimer's disease as the leading cause of death in males aged 80 years and over.
- the only variation for females was in those aged 65 to 79 years, where COVID-19 replaced malignant neoplasm of trachea, bronchus and lung as the leading cause of death

Table 2: COVID-19 and dementia and Alzheimer's disease were the leading causes of death for males and females in 2020

Leading causes of death by age group and sex, England and Wales, 2020

Males

Age Group	Leading Cause	% of male deaths
All ages	COVID-19	13.3
1 to 4	Congenital malformations deformations and chromosomal abnormalities	16.2
5 to 19	Intentional self-harm; and event of undetermined intent	17.1
20 to 34	Intentional self-harm; and event of undetermined intent	25.6
35 to 49	Accidental poisoning	12.3
50 to 64	Ischaemic heart diseases	16.4
65 to 79	Ischaemic heart diseases	13.4
80 years and over	COVID-19	15.1

Females

Age group	Leading cause	% of female deaths
All ages	Dementia and Alzheimer's disease	15.3
1 to 4	Congenital malformations deformations and chromosomal abnormalities	13.6
5 to 19	Intentional self-harm; and event of undetermined intent	12.4
20 to 34	Intentional self-harm; and event of undetermined intent	16.5
35 to 49	Malignant neoplasm of breast	11.3
50 to 64	Malignant neoplasm of breast	8.9
65 to 79	COVID-19	10.4
80 years and over	Dementia and Alzheimer's disease	21.4

Source: Office for National Statistics – Deaths registered in England and Wales

Notes

1. Based on deaths registered in the calendar year.
2. In England and Wales, a conclusion of suicide cannot be returned for children under the age of 10 years. "Intentional self-harm; and event of undetermined intent" in this bulletin differs from the National statistics definition of suicide.

For more detailed information on leading causes by sex, age-group, and country, see Tables 9a to 9c of the [accompanying dataset](#).

7 . Deaths registered in England and Wales data

[Deaths registered in England and Wales](#)

Dataset | Released 6 July 2021

Annual data on deaths registered by age, sex and selected underlying cause of death. Tables also provide both mortality rates and numbers of deaths over time. Special extracts and tabulations of mortality data for England and Wales are available to order (subject to legal frameworks, disclosure control, resources and the Office for National Statistics (ONS) charging policy, where appropriate). Enquiries should be made to the Mortality Analysis team by email to health.data@ons.gov.uk or telephone on +44 (0)1329 444110. User-requested data will be published on our website.

[Deaths registered in England and Wales – 21st century mortality](#)

Dataset | Released 6 July 2021

Annual data on the number of deaths registered in England and Wales by age group, sex, year and underlying cause of death, as defined using the International Classification of Diseases, Tenth Revision.

[Explorable dataset of deaths registered in England and Wales](#)

Dataset | Released

Mortality statistics for deaths registered in 2013 to 2020. Numbers of deaths and age-standardised rates by: age, sex, year, geography, cause of death (ICD-10 classification and leading causes of death). Deaths by deprivation indices in England and Wales, sex and single year of age, deaths registered in 2020 Dataset | Released 6 July 2021 Number of deaths in each deprivation decile, based on the Index of Multiple Deprivation (IMD 2019) in England and the Welsh Index of Multiple Deprivation (WIMD 2019) in Wales. Breakdowns by sex and single year of age up to 105 years and over.

8 . Glossary

Age-standardised mortality rates

Age-standardised mortality rates (ASMRs) are used to allow comparisons between populations that may contain different proportions of people of different ages. The 2013 European Standard Population is used to standardise rates; more information is available in the [User guide to mortality statistics](#).

Coronaviruses

The World Health Organization (WHO) defines coronaviruses as "a large family of viruses that are known to cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS)". Between 2001 and 2018, there were 12 deaths in England and Wales due to a coronavirus infection, with a further 13 deaths mentioning the virus as a contributory factor on the death certificate.

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 Organisation \(WHO\)](#).

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.

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. More information is available on our [uncertainty pages](#).

Crude mortality rates

Crude mortality rates are used to allow comparisons between populations of different sizes, so are a better measure to compare across time than numbers of deaths alone. However, crude rates do not take account of differences in the structure of populations such as the age and sex distribution (see age-standardised mortality rates). More information is available in the User guide to mortality statistics.

9 . Measuring the data

This publication provides information concerning mortality rates and causes of death registered in 2020, this includes deaths where COVID-19 was the underlying cause of death.

When interpreting these mortality statistics, please note that:

- death statistics are compiled from information supplied when deaths are certified and registered as part of civil registration, a legal requirement
- this release provides both summary figures and more detail on both individual causes of death and [selected leading causes of death](#), where individual causes are aggregated using a list developed by the World Health Organization (WHO), modified for use in England and Wales. Deaths where COVID-19 was the underlying cause have been included in this release using the ICD-10 definition: U07.1, U07.2 and U10.9
- summary figures published in the [accompanying dataset](#) include analysis of causes of death by broad disease groupings (a list of these is available in [Section 10 of the User guide to mortality statistics](#))

Methodology guides

More 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](#).

Our [User guide to mortality statistics](#) provides further information on data quality, legislation and procedures relating to mortality and includes a [glossary of terms](#). Information on how age-standardised mortality rates (ASMRs) are calculated is also included.

The [Revisions policy for population statistics \(including mortality statistics\)](#) is also available.

Infant, neonatal and postneonatal mortality rates

Because of the coronavirus (COVID-19) pandemic, birth registrations in England and Wales were delayed and therefore analyses of stillbirths, neonatal mortality, and infant mortality were not originally included in this publication. On 24 September 2021 we updated the [accompanying dataset](#) to include this analysis.

Coding of deaths

Deaths are cause coded using the World Health Organization's (WHO) [International Classification of Diseases, tenth edition \(ICD-10\)](#). Deaths are coded to ICD-10 using IRIS software (version 2013). Cause of death reported here represents the final underlying cause of death for ages 28 days and over. This takes account of additional information received from medical practitioners or coroners after the death has been registered.

In 2011, there was an update to the coding framework (detailed in the [bridge coding study](#)) used to code cause of death. This meant that deaths from vascular dementia that were previously coded to cerebrovascular disease (I60 to I69) would be coded to vascular dementia (F01). There were further changes to the framework in 2014 (detailed in the [dual coding study](#)) where deaths that were coded to chest infection (J98) would now be coded to chest infection (J22), but those with a mention of dementia (F01 or F03) would now be coded to dementia (F01 or F03). Additionally, deaths that were previously coded to aspiration pneumonia (I69) where dementia was mentioned on the death certificate would now be coded to dementia (F01 or F03).

On 1 January 2020, we updated the software used to code causes of death and derive a single underlying cause. This is known as Multicausal and Unicausal Selection Engine (MUSE) (IRIS version 5.5). More information is available on the [differences caused by the change of software](#).

10 . Strengths and limitations

There is a large degree of comparability in death statistics between countries within the UK. There are some differences, although these are believed to have a negligible impact on the comparability of the statistics. These differences are outlined in the [Mortality statistics in England and Wales QMI](#).

Death figures reported here are based on deaths registered in the data year. This includes some deaths that occurred in the years prior to 2020 (30,779 out of 607,922 deaths). The Office for National Statistics (ONS) also takes an annual extract of death occurrences in the autumn following the data year to allow for late registrations. Further information on the [impact of registration delays for a range of causes](#) is available.

Figures in this release only represent deaths that were registered in England and Wales: these include some deaths of individuals whose usual residence was outside England and Wales (823 of the 607,922 deaths registered in 2020), while any deaths of residents that happened abroad are not included.

11 . Related links

[Monthly mortality analysis, England and Wales: May 2021](#)

Bulletin | Released 18 June 2021

Provisional death registration data for England and Wales, broken down by sex, age and country. Includes deaths due to the coronavirus (COVID-19) and leading causes of death.

[Where to find statistics on UK deaths involving the coronavirus \(COVID-19\) and infection rates by country](#)

Article | Released 19 May 2020

Links to statistics on coronavirus (COVID-19) deaths and infection rates published by the different constituent countries of the UK.

[The top 10 causes of death](#)

Web page | Released 9 December 2020

The World Health Organization (WHO) provides data on the leading causes of death in the world.

[Births in England and Wales: 2019](#)

Bulletin | Released 22 July 2020

Live births, stillbirths and the intensity of childbearing, measured by the total fertility rate.