

Statistical bulletin

# Monthly mortality analysis, England and Wales: August 2020

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.

Contact:  
Health Statistics and Research  
Health.Data@ons.gov.uk  
+44 (0)1633 456022

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# 1 . Main points

- In August 2020, there were 34,750 deaths registered in England, 2,060 deaths fewer than the five-year average (2015 to 2019) for August; in Wales, there were 2,379 deaths registered, 116 deaths fewer than the five-year average for August.
- The leading cause of death in August 2020 was dementia and Alzheimer's disease in England (accounting for 10.9% of all deaths) and ischaemic heart disease in Wales (11.0% of all deaths); both leading causes of death were the same in July 2020.
- The coronavirus (COVID-19) did not feature in the top ten leading causes of death in August 2020, in England or Wales. In England, COVID-19 was the 24th most common cause of death and in Wales it was the 19th most common cause of death, for deaths registered in August 2020.
- The age-standardised mortality rate of deaths in August due to COVID-19 was 7.2 per 100,000 persons in England compared with 11.0 per 100,000 persons in Wales; in both England and Wales, the COVID-19 mortality rate continued to decline for the fourth consecutive month.
- When considering deaths registered in 2020 to date (1 January to 31 August) in England, the age-standardised mortality rate for deaths registered in 2020 was significantly higher than the mortality rate in each year back to 2009.
- Looking at deaths that have occurred so far in 2020 and were registered by 5 September, 365,889 deaths occurred in England (33,003 more than the five-year average for January to August) and 23,416 in Wales (1,061 more than the five-year average).
- In January to August 2020, COVID-19 was the underlying cause of death in 12.5% of all deaths that occurred in England (45,797 deaths) and 9.8% of all deaths in Wales (2,302 deaths).
- Deaths that have occurred so far in 2020 (and were registered by 5 September), most commonly occurred in hospitals (41.1% of all deaths in England, 47.8% in Wales), but the proportion of deaths in hospital was lower than the five-year average, with a greater proportion of deaths occurring in private homes and care homes.

## 2 . Death registrations and the overall mortality rate for August 2020

In August 2020 there were 34,750 deaths registered in England. This was 1,521 fewer deaths than in August 2019, and 2,060 fewer than the five-year average (2015 to 2019) for August. Of the deaths registered in August 2020, 17,568 were in males and 17,182 were in females.

In Wales, there were 2,379 deaths registered in August 2020. This was 71 deaths fewer than in August 2019 and 116 deaths fewer than the five-year average for August. Of the deaths registered in August in Wales, there were 1,164 male deaths and 1,215 female deaths.

Age-standardised mortality rates (ASMRs) are used for comparisons over time rather than numbers of deaths, as ASMRs account for changes to the population size and age structure. Since August 2001, overall mortality rates in England for the month of August have been decreasing from 1,107.1 deaths per 100,000 population, to a low of 746.0 deaths per 100,000 population in August 2020. This statistically significant decline in age-standardised mortality rates was seen in both males and females (Figure 1). In August 2020, the mortality rate was 869.3 deaths per 100,000 males (compared with 1,378.5 in August 2001) and 641.8 deaths per 100,000 females (compared with 920.3 in August 2001).

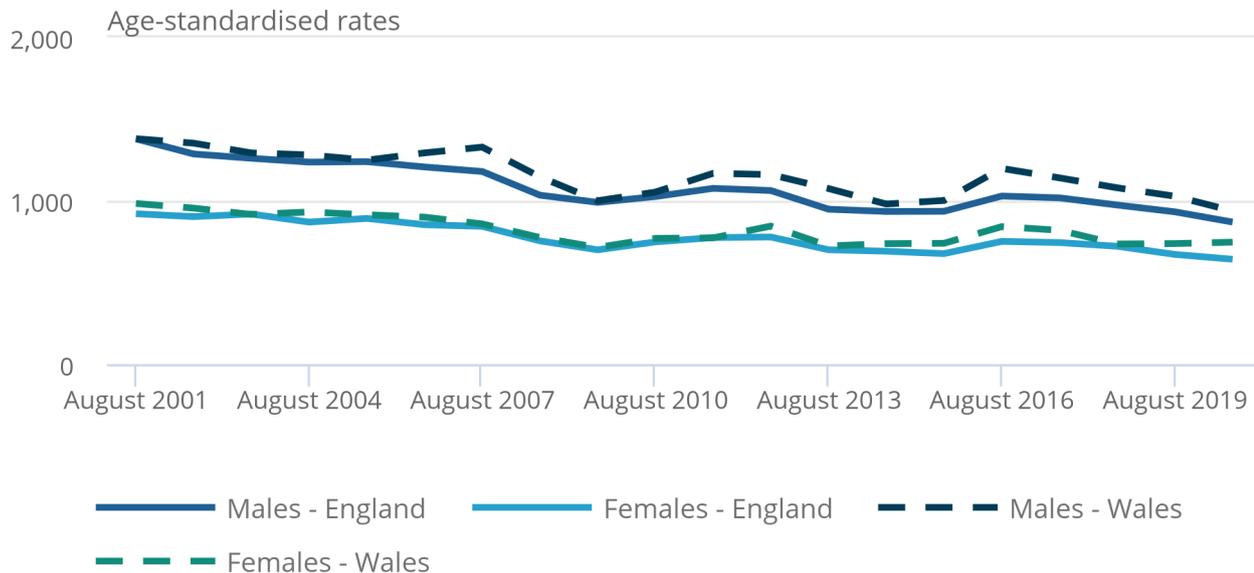
Mortality rates in Wales show a similar pattern over time, decreasing from 1,144.7 deaths per 100,000 population in August 2001 to 835.8 deaths per 100,000 population in August 2020. In August 2020 in Wales, the mortality rate was 937.2 deaths per 100,000 males (1,379.4 in August 2001) and 746.4 deaths per 100,000 females (982.8 in August 2001).

## Figure 1: Mortality rates for the month of August have fallen between 2001 and 2020

Age-standardised mortality rates by sex, England and Wales, deaths registered in August 2001 to August 2020

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Age-standardised mortality rates by sex, England and Wales, deaths registered in August 2001 to August 2020



Source: Office for National Statistics - Monthly mortality analysis, England and Wales: July 2020

#### Notes:

1. Age-standardised mortality rates per 100,000 population, standardised to the 2013 European Standard Population. Monthly rates in this bulletin are adjusted to allow for comparisons with annual rates. For more information, see [Section 10: Measuring the data](#).
2. Figures are for deaths registered rather than deaths occurring in each period.
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Although mortality rates have reduced over time, the rate of decline in mortality rates has been slowing since 2011. More information about how mortality rates have changed over a longer time period can be found in [Changing trends in mortality in England and Wales](#).

### 3 . Deaths due to COVID-19 registered in August 2020

Of the 34,750 deaths registered in August 2020 in England, 1.4% (482 deaths) involved the coronavirus (COVID-19). In Wales, 2.2% of the 2,379 deaths registered in August involved COVID-19 (52 deaths).

The doctor certifying a death can list all causes in the chain of events that led to the death and pre-existing conditions that may have contributed to the death. Using this information, we determine an underlying cause of death. More information on this process can be found in the [User guide to mortality statistics](#). In most cases (92.2% in England and 89.7% in Wales) where COVID-19 was mentioned on the death certificate, it was found to be the underlying cause of death. The analysis of COVID-19 deaths in this bulletin focusses only on deaths where COVID-19 was the underlying cause (deaths “due to” COVID-19). A comparison of the numbers of deaths “involving” and “due to” COVID-19 between March and June 2020 is available in our [Deaths involving COVID-19](#) publication.

Our definition of COVID-19 includes some cases where the certifying doctor suspected the death involved COVID-19 but was not certain, for example, because no test was done. Of the 48,100 deaths with an underlying cause of COVID-19 in England and Wales, 3,889 (8.1%) were classified as “suspected” COVID-19.

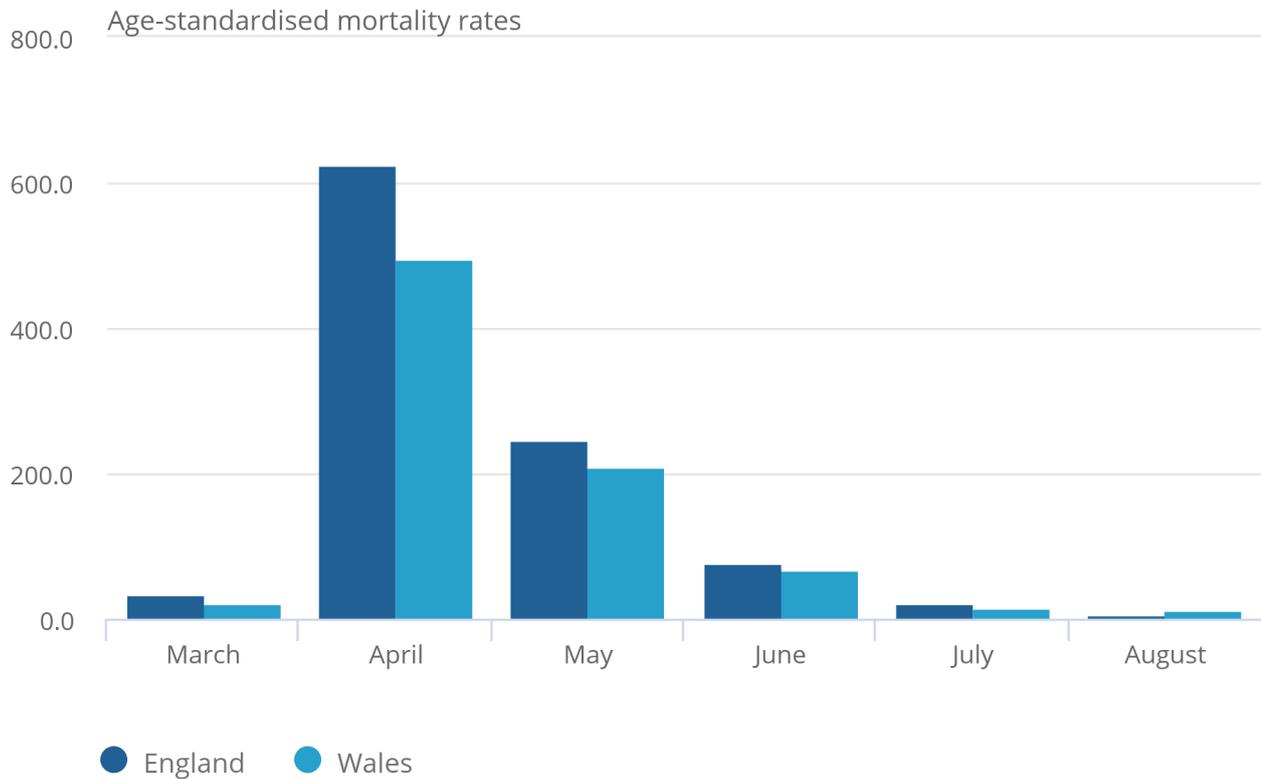
Analysis of COVID-19 deaths in this bulletin, includes only those deaths with an underlying cause of death of COVID-19, referred to as “due to COVID-19”. This is different from deaths “involving COVID-19” used in other publications, which includes deaths that had COVID-19 mentioned anywhere on the death certificate, whether as underlying cause or not.

## Figure 2. Mortality rates due to COVID-19 declined for the fourth consecutive month

Age-standardised mortality rates for deaths due to COVID-19, England and Wales, deaths registered in March to August 2020

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Age-standardised mortality rates for deaths due to COVID-19, England and Wales, deaths registered in March to August 2020



Source: Office for National Statistics - Monthly mortality analysis, England and Wales: August 2020

#### Notes:

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5. Deaths "due to COVID-19" include only deaths where COVID-19 was the underlying cause of death.

When adjusting for the size and age structure of the population, mortality rates for deaths due to COVID-19 have decreased each month since the peak in April 2020 (Figure 2). There were 7.2 deaths due to COVID-19 per 100,000 persons in England registered in August 2020, a 98.8% decrease compared with April 2020 (623.2 deaths per 100,000 persons). In Wales, the rate of death due to COVID-19 was 11.0 deaths per 100,000 persons in August 2020, which was 97.8% lower than the rate seen in April 2020 (495.1). In August 2020, the rate of deaths due to COVID-19 was higher in Wales than in England for the first time, though this difference was not statistically significant.

In August 2020, the number of deaths and mortality rate due to COVID-19 remained below levels seen in March 2020 (the first month a COVID-19 death was registered in England and Wales). In England and Wales, the mortality rate due to COVID-19 was significantly lower in August than in every other month since March 2020.

## 4 . Leading causes of death registered in August 2020

The Office for National Statistics' (ONS') [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.

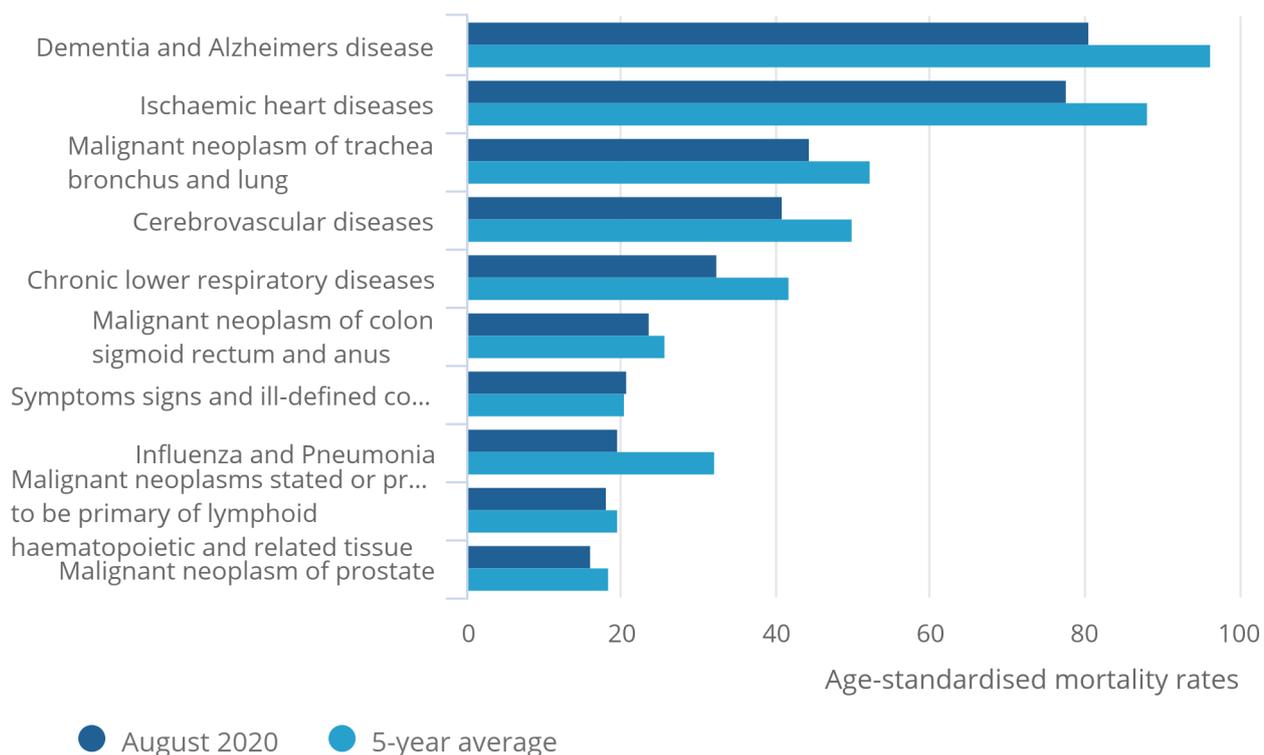
Figures 3 and 4 show the 10 most common underlying causes of death registered in August 2020 for England and Wales, compared with the five-year average for August (2015-2019).

**Figure 3: In England, most of the 10 leading causes of death were below the five-year average in August 2020**

Age-standardised mortality rate for selected leading causes of death, per 100,000 persons, England, deaths registered in August 2020

Figure 3: In England, most of the 10 leading causes of death were below the five-year average in August 2020

Age-standardised mortality rate for selected leading causes of death, per 100,000 persons, England, deaths registered in August 2020



Source: Office for National Statistics - Monthly mortality analysis, England and Wales: August 2020

Notes:

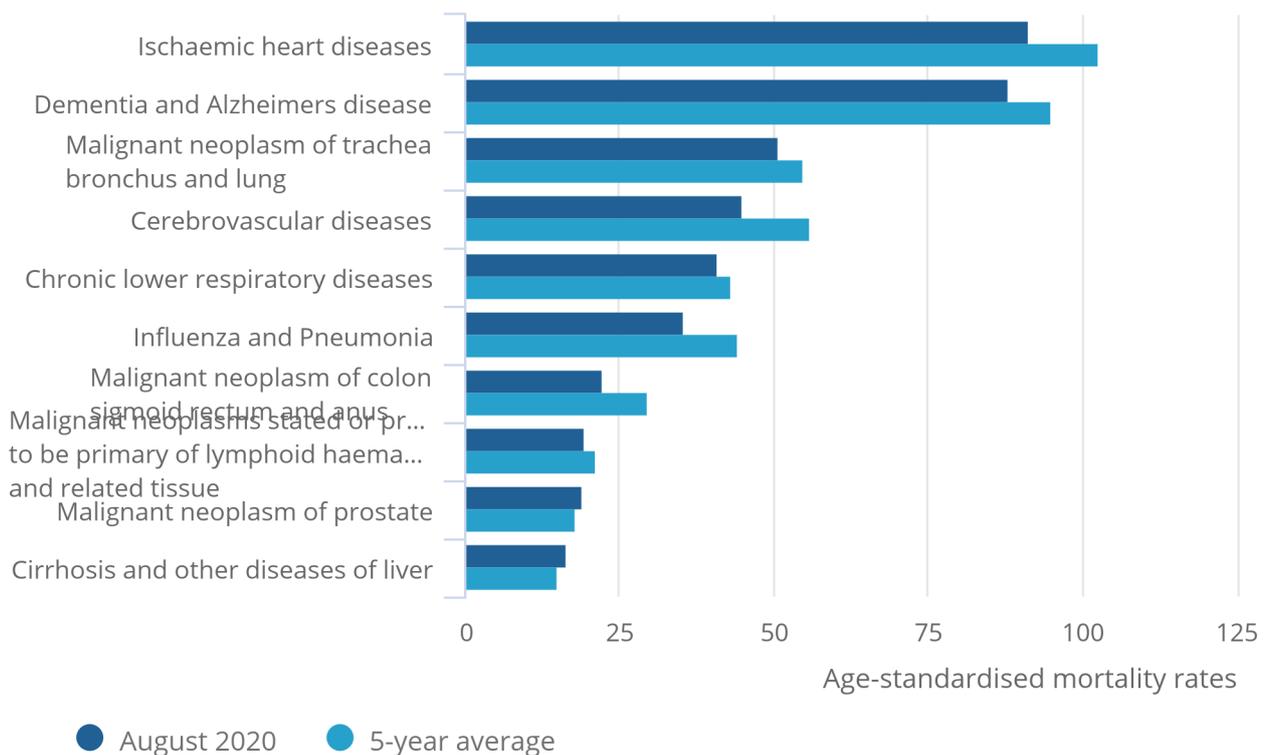
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**Figure 4: In Wales, Ischaemic heart diseases was the leading cause of death in August 2020**

Age-standardised mortality rate for the 10 leading causes of death, per 100,000 people, Wales, deaths registered in August 2020

Figure 4: In Wales, Ischaemic heart diseases was the leading cause of death in August 2020

Age-standardised mortality rate for the 10 leading causes of death, per 100,000 people, Wales, deaths registered in August 2020



Source: Office for National Statistics - Monthly mortality analysis, England and Wales: August 2020

Notes:

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5. Deaths “due to COVID-19” include only deaths where COVID-19 was the underlying cause of death.

In England, dementia and Alzheimer’s disease was the leading cause of death for deaths registered in August 2020, with 80.6 deaths per 100,000 persons (3,777 deaths). This is in line with the [annual leading causes of death](#) data; dementia and Alzheimer’s disease has been the leading cause of death in England since 2015. The second most common cause of death was ischaemic heart diseases (77.8 deaths per 100,000 persons, 3,618 deaths).

In August 2020, seven of the 10 leading causes of death were significantly below the five-year average for England (Figure 3). The coronavirus (COVID-19) pandemic resulted in deaths registered in April and May 2020 rising well above what would be expected (based on the five-year average). COVID-19 has had a larger impact on the most vulnerable people (such as those who already suffer from a medical condition), and those at older ages. Some of these deaths would have likely occurred over the duration of the year but have occurred earlier because of COVID-19. These deaths happening earlier than expected could contribute to a period of deaths below the five-year average, as seen in August 2020.

When comparing deaths registered in August 2020 with the five-year average in England, the largest difference was in deaths with an underlying cause of influenza and pneumonia. The age-standardised mortality rate in August 2020 was 39.3% lower than the five-year average. [Influenza and pneumonia was the third most common pre-existing condition](#) for deaths involving COVID-19 in April to June 2020. So, deaths that would have likely occurred throughout the rest of 2020 due to influenza and pneumonia may have occurred earlier, during April and May 2020, due to the COVID-19 pandemic.

In Wales, ischaemic heart disease was the leading cause of death, with 261 deaths registered in August 2020 (91.5 deaths per 100,000 persons). This was followed by dementia and Alzheimer's disease, with 251 deaths (88.0 deaths per 100,000 persons). None of the top 10 leading causes of death for Wales were significantly different from the five-year average.

In both England and Wales, COVID-19 did not feature in the top 10 leading causes of death in August 2020. In England, COVID-19 was the 24th most common cause of death and in Wales it was the 19th most common cause of death, for deaths registered in August 2020.

More in-depth analysis of leading causes of death is available for the [UK](#) (2001 to 2018) and [England and Wales](#) (2019).

## 5 . Age-standardised mortality rates by sex and age group, in August 2020

Most deaths registered typically occur in those who are aged 75 years and over. For this reason, age-standardised mortality rates (ASMR) for those aged under 75 years and those aged 75 years and over have been analysed separately. Age-specific mortality rates by five-year age groups for ages 75 years and over are available in the accompanying dataset.

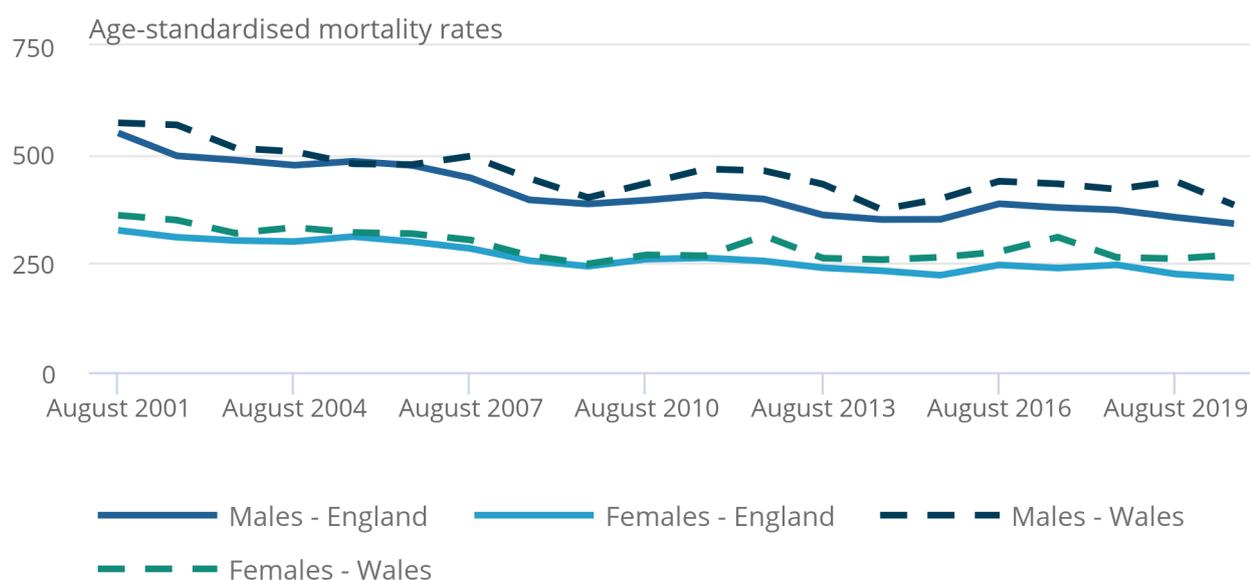
Generally, since 2001, the age-standardised mortality rates for people aged 0 to 74 years across both England and Wales have been decreasing. In August 2020 there were 277.2 deaths per 100,000 persons in England (432.8 in August 2001) and 325.3 deaths per 100,000 persons in Wales (461.7 in July 2001). This decline in mortality rates can be seen in both males and females aged 0 to 74 years (Figure 5).

**Figure 5: In August 2020 mortality rates for people aged under 75 years were similar to mortality rates in August 2019**

Age-standardised mortality rates by sex, ages 0 to 74 years, deaths registered in August 2001 to 2020, England and Wales

### Figure 5: In August 2020 mortality rates for people aged under 75 years were similar to mortality rates in August 2019

Age-standardised mortality rates by sex, ages 0 to 74 years, deaths registered in August 2001 to 2020, England and Wales



Source: Office for National Statistics - Monthly mortality analysis, England and Wales: August 2020

#### Notes:

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Similar to the mortality trends seen across all age groups, improvements to mortality rates for male and females aged 0 to 74 years have slowed since 2011. Age-standardised mortality rates in August 2020 were not significantly different from August 2019, across males and females in England and Wales.

In people aged 75 years and above, mortality rates have also generally improved since 2001 (Figure 6). In August 2020, people aged 75 years and above had a mortality rate of 5,485.6 deaths per 100,000 persons in England (7925.6 in August 2001), and 5,997.2 deaths per 100,000 persons in Wales (8050.7 in August 2001).

Compared with August 2019, the mortality rate in August 2020 has declined significantly for both males and females aged 75 years and above in England. The ASMR for deaths registered in August 2020 was 6.1% lower than in August 2019; this is similar to the 7.6% reduction was seen in July 2020 compared with July 2019. The impact of COVID-19 on the most vulnerable and older people discussed in Section 5 may explain some of the decline compared with 2019.

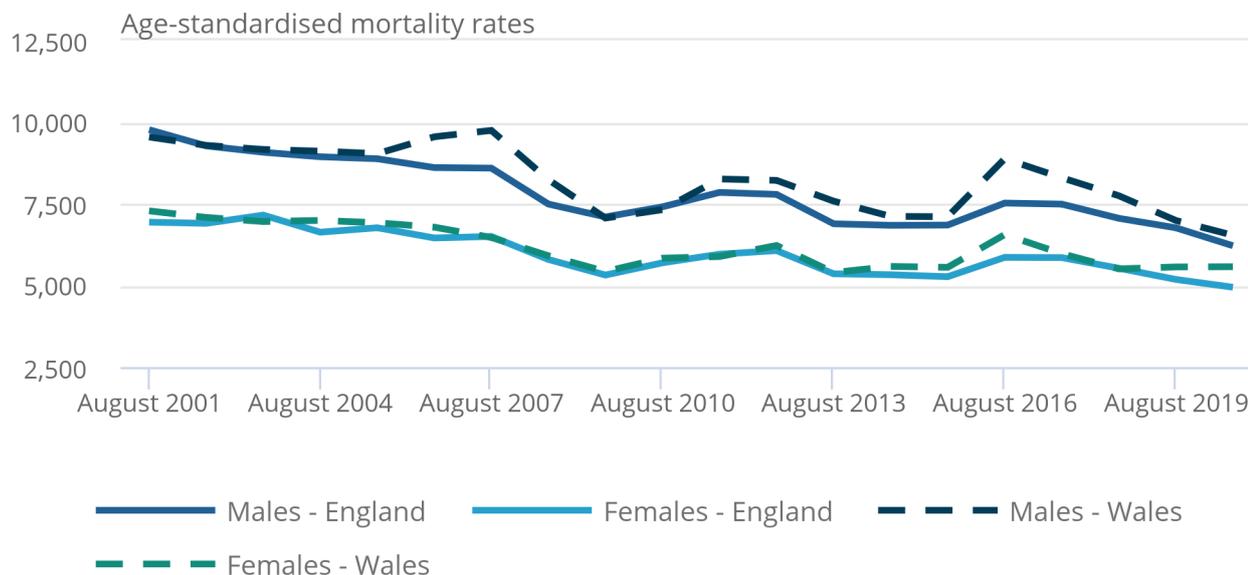
In Wales, August 2020 mortality rates for those aged 75 years and above decreased compared with August 2019 for males (6.5% lower) but remained similar for females (0.1% higher). However, neither of these differences were statistically significant.

**Figure 6. Mortality rates in August 2020, for males and females aged 75 years and above in England, have decreased compared with August 2019**

Age-standardised mortality rates by sex, ages 75 years and over, deaths registered in August 2001 to 2020, England and Wales

Figure 6. Mortality rates in August 2020, for males and females aged 75 years and above in England, have decreased compared with August 2019

Age-standardised mortality rates by sex, ages 75 years and over, deaths registered in August 2001 to 2020, England and Wales



Source: Office for National Statistics - Monthly mortality analysis, England and Wales: August 2020

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## 6 . Deaths registered in the year-to-date

There were 386,133 deaths registered in England and 24,503 in Wales during the first eight months (January to August) of 2020.

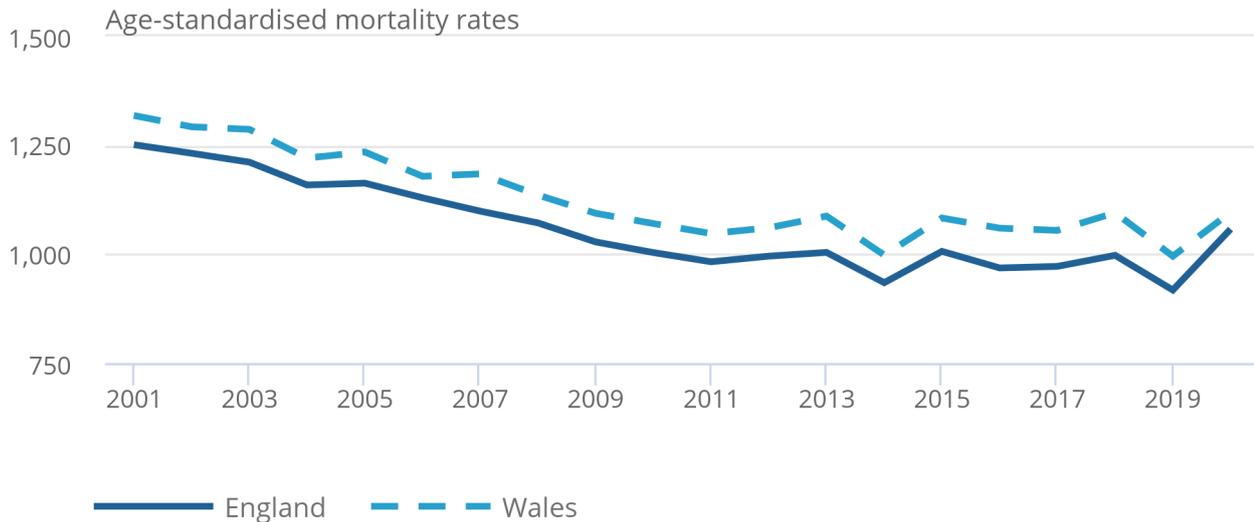
To gain a better idea of year-to-year differences in mortality rates, we calculated year-to-date age-standardised mortality rates based on deaths registered between 1 January and 31 August in each year from 2001 to 2020 (Figure 7). For England, the year-to-date age-standardised mortality rate for 2020 was 1,057.4 deaths per 100,000 persons, which was statistically significantly higher than all years between 2009 and 2019. For Wales, the year-to-date age-standardised mortality rate for 2020 was 1095.9 deaths per 100,000 persons. This was significantly higher than the first eight months of 2019 (a particularly low year), but not significantly different from 2018.

**Figure 7: Mortality rates for 2020 to date in England are statistically significantly higher than all years since 2009**

Age-standardised mortality rates, deaths registered between 1 January and 31 August 2001 to 2020, England and Wales

**Figure 7: Mortality rates for 2020 to date in England are statistically significantly higher than all years since 2009**

Age-standardised mortality rates, deaths registered between 1 January and 31 August 2001 to 2020, England and Wales



Source: Office for National Statistics - Monthly mortality analysis, England and Wales: August 2020

Notes:

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## 7 . Death occurrences in August 2020 and year-to-date

This section is based on the date a death occurred, rather than the date of registration used in the previous sections, to monitor current mortality trends. Analysis of deaths by date of registration is useful as the figures are comparable across time and geography. Owing to the length of time that it takes a death to be registered, using data based on registration can mean that we are not monitoring the most current death trends. For example, a death registered in August 2020 could have occurred in a previous month or even a previous year. Further information regarding death occurrences and registration delays can be found in [Section 10: Measuring the Data](#).

Between 1 January and 31 August 2020, 365,889 deaths occurred in England and were registered by 5 September. This was 33,003 more deaths than the five-year average (2015 to 2019) for January to August. Of the 365,889 deaths that occurred, 12.5% were due to COVID-19 (45,797 deaths). In Wales, 23,416 deaths occurred in 2020 to date, which was 1,061 more deaths than the five-year average. COVID-19 was the underlying cause of death in 9.8% of all deaths that occurred (2,302 deaths).

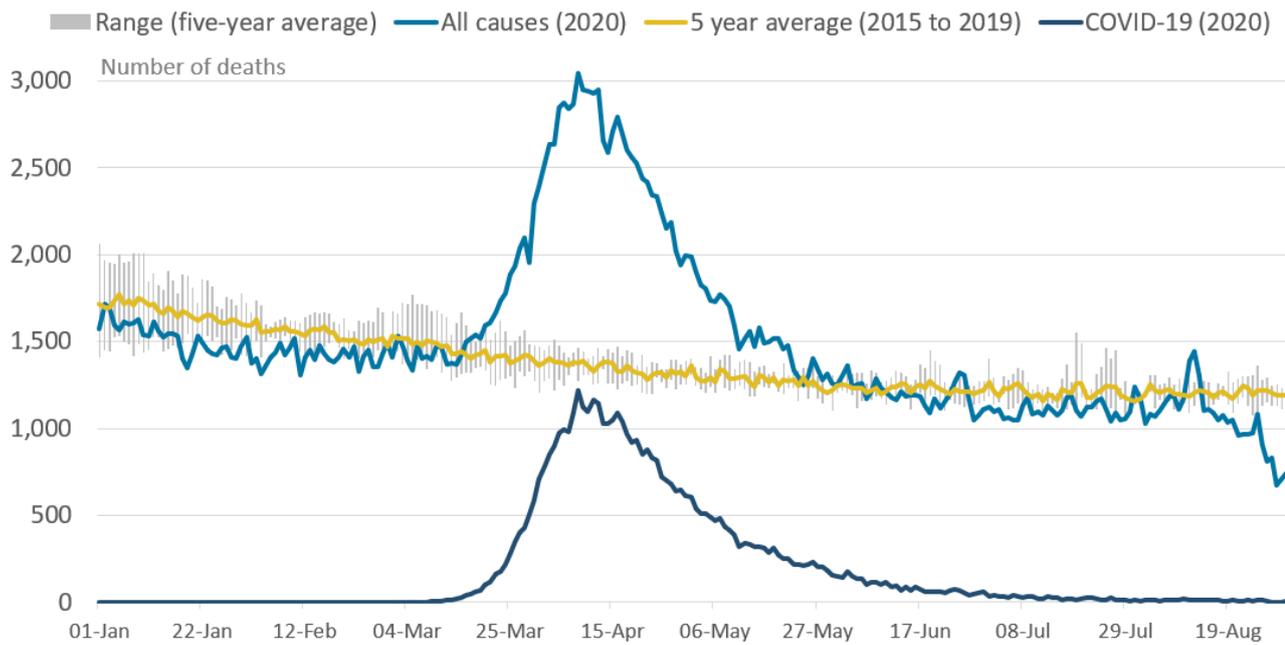
In England, the first death due to COVID-19 occurred on 2 March 2020 (Figure 9). Since 11 March, the number of COVID-19 deaths occurring on each day rose (except for 6 April 2020, when it decreased by 15 deaths) until the peak of 1,220 deaths that occurred on 8 April 2020. Since 8 April, the number of deaths each day has been decreasing, with five deaths due to COVID-19 occurring on 31 August, although the number of recorded deaths on more recent dates will rise as we receive more death registrations.

In Wales, the first death with an underlying cause of COVID-19 occurred on 15 March. As in England, the number of COVID-19 deaths per day reached the peak on 8 April 2020, when 70 deaths due to COVID-19 occurred in Wales. Since 8 April, the number of COVID-19 deaths occurring each day in Wales has gradually decreased, with no deaths due to COVID-19 occurring on 31 August (though this may become higher due to registrations delays).

It is important to note that the number of death occurrences is incomplete as it is likely that more deaths need to be registered, therefore comparisons should be treated with caution. In particular, instances where the number of death occurrences on each day in August was below the range of the last five years are likely to be a result of when the data extract was created, as deaths that occurred towards the end of the month may not have been registered by that time. We would therefore expect the number of death occurrences to be higher in future releases.

**Figure 8. Daily deaths due to COVID-19 in England have been decreasing, following the peak of 1,220 deaths on 8 April 2020**

Number of deaths occurring on each day in 2020<sup>1</sup>, five-year average and range, England



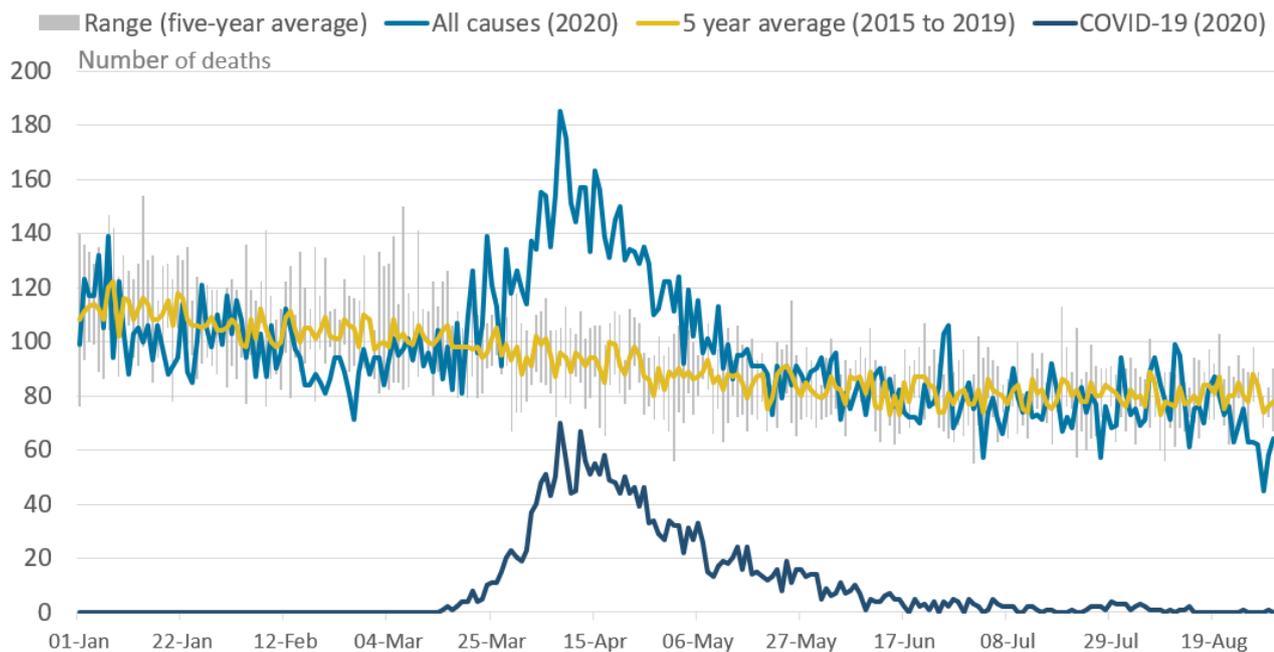
Source: Office for National Statistics - Monthly mortality analysis, England and Wales: August 2020

**Notes:**

1. Figures are for deaths occurring on each day rather than deaths registered, registered up to 5 September 2020. Death occurrences will increase as more deaths are registered, particularly for later dates.
2. The range is the difference between the minimum and maximum value observed on each day during the five-year period (1 January to 31 August 2015 to 2019).
3. Figures exclude non-residents.
4. For 29 February, only data for leap years are included in the five-year average.

## Figure 9. Deaths due to COVID-19 in Wales have gradually decreased, after the peak of 70 deaths on 8 April 2020

Number of deaths occurring on each day in 2020<sup>1</sup>, five-year average and range, Wales



Source: Office for National Statistics - Monthly mortality analysis, England and Wales: August 2020

### Notes:

1. Figures are for deaths occurring on each day rather than deaths registered, registered up to 5 September 2020. Death occurrences will increase as more deaths are registered, particularly for later dates.
2. The range is the difference between the minimum and maximum value observed on each day during the five-year period (1 January to 31 August 2015 to 2019).
3. Figures exclude non-residents.
4. For 29 February, only data for leap years are included in the five-year average.

In both England and Wales, the proportions of deaths that occurred in hospital were lower in 2020 to date (January to August) than the five-year average (January to August 2015 to 2019). Of the 365,889 deaths that occurred in England in 2020 (and were registered by 5 September), 41.1% (150,396 deaths) occurred in hospital, compared with 46.3% for the five-year average. In Wales, 47.8% of the 23,416 deaths that occurred in 2020 to date happened in hospital (11,196 deaths), compared with 54.3% for the five-year average.

The percentages of deaths that occurred in private homes and care homes were higher in 2020 than the five-year average. More than a quarter of deaths in 2020 to date occurred in private homes in both England (26.1% in 2020, compared with 23.4% for the five-year average) and Wales (28.2% in 2020, compared with 24.3% for the average). Deaths in care homes accounted for a quarter of deaths in England (26.0%) and a fifth of deaths in Wales (20.1%), both greater than the proportions for the five-year averages (22.1% in England, 16.4% in Wales).

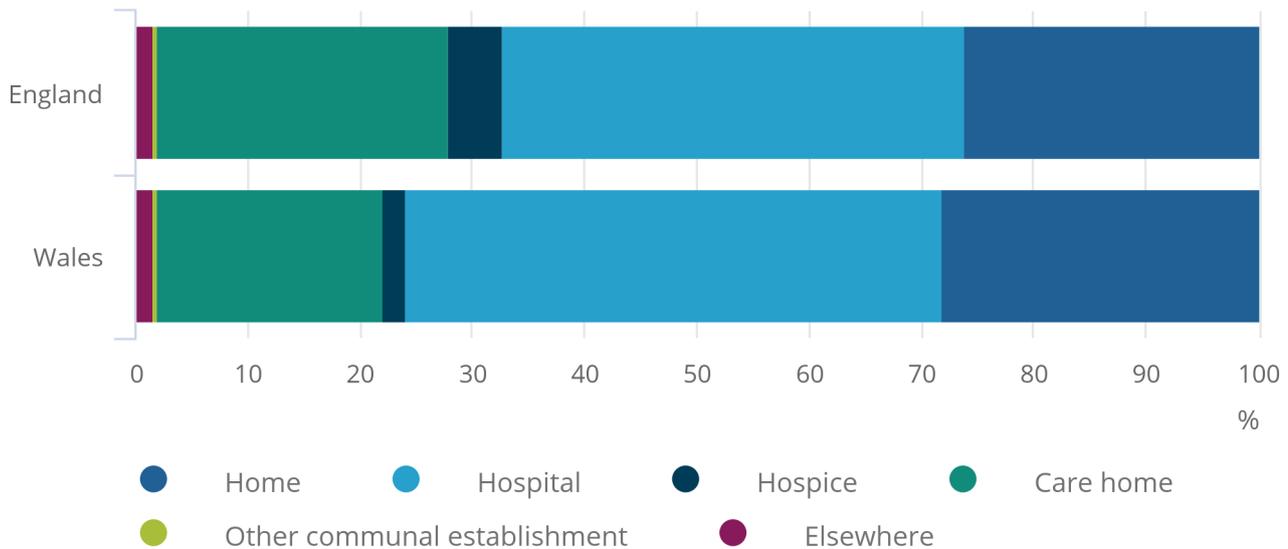
Further data on deaths by place of occurrence, by age and month, are available in the accompanying datasets. Data on deaths involving COVID-19 by place of death occurrence are published in [Deaths registered weekly in England and Wales](#), and in-depth analysis of [deaths involving COVID-19 in the care sector](#) is also available.

## Figure 10: Deaths in 2020 to date occurred mostly in hospitals, followed by private homes and care homes

Number of deaths by place of occurrence, deaths occurring in January to August 2020 and registered by 5th September 2020, England and Wales

### Figure 10: Deaths in 2020 to date occurred mostly in hospitals, followed by private homes and care homes

Number of deaths by place of occurrence, deaths occurring in January to August 2020 and registered by 5th September 2020, England and Wales



Source: Office for National Statistics – Monthly Mortality Analysis: August 2020

#### Notes:

1. Figures are for deaths occurring in January to August 2020 rather than deaths registered, registered up to 5 September 2020. Death occurrences will increase as more deaths are registered.
2. Figures exclude non-residents.

## 8 . Monthly Mortality Data

[Monthly Mortality Analysis, England and Wales](#)

Dataset | Released 18 September 2020

Monthly data on death registrations and death occurrences in England and Wales, broken down by sex and age. Includes deaths due to the coronavirus (COVID-19) by date of death occurrence, and comparisons of COVID-19 with the leading causes of death.

## 9 . Glossary

## Age-specific mortality rates

Age-specific mortality rates are used to allow comparisons between specified age groups.

## 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. In this bulletin, we have adjusted the monthly ASMRs to allow for comparisons with annual rates. For more information see [Section 10: Measuring the data](#).

## 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 [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. In some circumstances, significance has also been tested using z scores. More information about this z test is available in Appendix 1 of the [Sullivan guide \(PDF, 4.0KB\)](#).

## 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 number of deaths, prevalence of health states and the size of the underlying population. At a national level, the overall level of error will be small compared with the error associated with a local area or a specific age and sex breakdown. More information is available on our [uncertainty pages](#).

## 10 . Measuring the data

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](#) and [User guide to mortality statistics](#). Analysis of deaths registered in August 2020 by age and sex, and deaths that occurred in August 2020 by date of death are included. It expands on the quarterly data for England that were previously published in the [Quarterly Mortality Report](#).

The purpose of this bulletin is to provide timely surveillance of mortality in England and Wales, based on the best available provisional data, including all-cause mortality and deaths where COVID-19 was the underlying cause.

This includes deaths where COVID-19 was the underlying cause of death compared with other causes of death, as well as mortality rates for deaths due to COVID-19. This replaces data previously published in the Deaths involving COVID-19 bulletin, but the analysis published here differs in that it uses month of death registration, rather than month of death occurrence.

Analysis by month of death registration is consistent with the weekly death registrations release and allows for a more timely analysis than would be possible using death occurrences. This is because a proportion of deaths that occurred in the previous month have not yet been registered. On average, there is a delay of five days between a death occurring and it being registered, but this can be much longer, especially for certain causes of death. More information on this issue can be found in our [impact of registration delays publication](#).

### Deaths data sources

This report is based primarily on death registrations, with a section on death occurrences for surveillance of recent mortality trends. Death occurrences show the number of deaths that occurred within a calendar period and give a better indication than registrations of exactly when deaths were at their highest. This allows mortality to be related to other factors such as weather patterns.

A provisional extract of death registrations and death occurrences data is taken at least four days after the end of the month, to allow time for deaths to be registered. Death registrations data for 2020 are provisional; however, we would expect only very small changes to total death registration counts once data are made final. Death occurrences are likely to change, especially for dates towards the end of the current month, as some deaths will not have been registered the extract is taken.

Figures on deaths due to COVID-19 in this publication are different from the daily surveillance figures on COVID-19 deaths published by the Department of Health and Social Care (DHSC) on the [GOV.UK](#) website as figures in this report are derived from the formal process of death registration. More information on the different sources of COVID-19 deaths data is available in [Deaths registered weekly in England and Wales](#).

## Monthly mortality rates

We publish the mid-year population estimates used for calculating rates; these are currently available up to 2019. For 2020 onwards, population projections were used.

Calculation of mortality rates for monthly deaths requires adjustments to be made to annual population estimates to calculate rates that are comparable with annual rates. We calculate an annual population centered on the midpoint of the month using two years' worth of population estimates (or where these are not available, population projections). For the first half of the year (January to June), populations for the current year and the previous year are used; for the second half of the year (July to December), populations for the current year and the following year are used.

This is then multiplied by the number of days within the month as a proportion of the total number of days within that year. The output is used as the population denominator in calculations of age-standardised and age-specific mortality rates.

For example:

$$\text{June 2020 population} = \text{population}_{2019}(i) + (\text{population}_{2020} - (\text{population}_{2019}(i) = (m/M))) \times (N/M)$$

where m is the number of days from 1 July 2019 (the start of the mid-year for the population estimate) to the midpoint of June inclusive, N is the number of days in June 2020, M is the number of days in 2020 and (i) is the age group

where m is the number of days from 1 July 2019 (the start of the mid-year for the population estimate) to the midpoint of July inclusive, N is the number of days in July 2020, M is the number of days in 2020 and (i) is the age group

## 11 . Strengths and limitations

### Provisional data are used

Provisional death registrations and death occurrences data are used in this bulletin. This enables timely analysis to be completed to monitor mortality trends. However, as the data are provisional, they are subject to change.

### 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. However, [because of registration delays](#), monthly death occurrence data are always somewhat incomplete. This is especially true for deaths that occurred towards the end of the month.

This publication covers usual residents of England and Wales, providing data for the two countries separately. Non-residents of England and Wales are excluded from this analysis; in August 2020 there were 58 deaths of non-residents that were registered in England and Wales.

Further information can be found in the [Mortality statistics in England and Wales Quality and Methodology Information \(QMI\)](#) report and the [User guide to mortality statistics](#).

## 12 . Related links

### [Deaths registered weekly in England and Wales](#)

Bulletin | Released 18 August 2020

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.

### [Deaths involving COVID-19, England and Wales](#)

Bulletin | Released 17 July 2020

Number of deaths involving the coronavirus (COVID-19) that occurred in each month in England and Wales, by country, age, sex and place of death.

### [Deaths registered in England and Wales: 2019](#)

Bulletin | Released 1 July 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.

### [Coronavirus \(COVID-19\) latest data and analysis](#)

Web page | Updated as and when new data become available

Brings together the latest data and analysis on the coronavirus (COVID-19) pandemic in the UK and its effect on the economy and society.