

Statistical bulletin

Monthly mortality analysis, England and Wales: October 2021

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

Contact:
Georgia Brett and Alexander
Cooke
health.data@ons.gov.uk
+44 1329 444110

Release date:
23 November 2021

Next release:
21 December 2021

Table of contents

1. [Main points](#)
2. [Death registrations and the overall mortality rate for October 2021](#)
3. [Deaths due to COVID-19 registered in October 2021](#)
4. [Leading causes of death](#)
5. [Deaths registered in the year-to-date](#)
6. [Death occurrences in October 2021 and year-to-date](#)
7. [Pre-existing conditions of people whose death was due to COVID-19, deaths registered in July to September 2021](#)
8. [Monthly mortality data](#)
9. [Glossary](#)
10. [Measuring the data](#)
11. [Strengths and limitations](#)
12. [Related links](#)

1 . Main points

- In October 2021, there were 43,435 deaths registered in England, 2,883 deaths (7.1%) more than the October five-year average (2015 to 2019); there were 2,993 deaths registered in Wales, 259 deaths (9.5%) more than the October average.
- The leading cause of death in October 2021 was dementia and Alzheimer's disease in England (accounting for 11.3% of all deaths) and ischaemic heart diseases in Wales (10.6% of all deaths).
- Coronavirus (COVID-19) was the third leading cause of death in October 2021, in both England (accounting for 5.6% of all deaths) and Wales (accounting for 9.5% of all deaths).
- Taking into account the population size and age structure, the age-standardised mortality rate (ASMR) for deaths due to COVID-19 in England decreased significantly to 50.8 deaths per 100,000 people, the first decrease since May 2021; the ASMR for deaths due to COVID-19 in Wales was 97.6 deaths per 100,000 people, this was higher than September 2021 but was not statistically significant.
- Yorkshire and The Humber was the English region with the highest ASMR for deaths due to COVID-19 in October 2021 (72.4 deaths per 100,000 people).
- In Quarter 3 (July to Sept), Diabetes was the most common pre-existing condition mentioned on death certificates for deaths due to COVID-19 (22.5% of all deaths due to COVID-19).

2 . Death registrations and the overall mortality rate for October 2021

Based on provisional data, there were 43,435 deaths registered in England in October 2021. This was 185 more deaths than in October 2020 and 2,883 deaths more than the five-year average (2015 to 2019) (7.1% higher).

The five-year average has been provided for 2015 to 2019 (rather than 2016 to 2020) because of the impact of the coronavirus (COVID-19) pandemic on deaths registered in 2020. The average for 2015 to 2019 provides a comparison of the number of deaths expected in a usual (non-pandemic) year.

In Wales, the provisional number of deaths registered in October 2021 was 2,993. This was 1 more death than in October 2020 and 259 more deaths than the five-year average for October (9.5% higher).

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. In England, mortality rates for the month of October generally decreased over time from 1,231.6 per 100,000 people in October 2002 to 917.3 deaths per 100,000 people in October 2018. This was followed by a [statistically significant](#) increase in October 2019 to 939.3 deaths per 100,000 people. The ASMR decreased in October 2020 (928.6 deaths per 100,000 people) and in October 2021 (911.6 deaths per 100,000 people) but these were not statistically significant. This pattern in ASMRs over time was seen in both males and females (Figure 1).

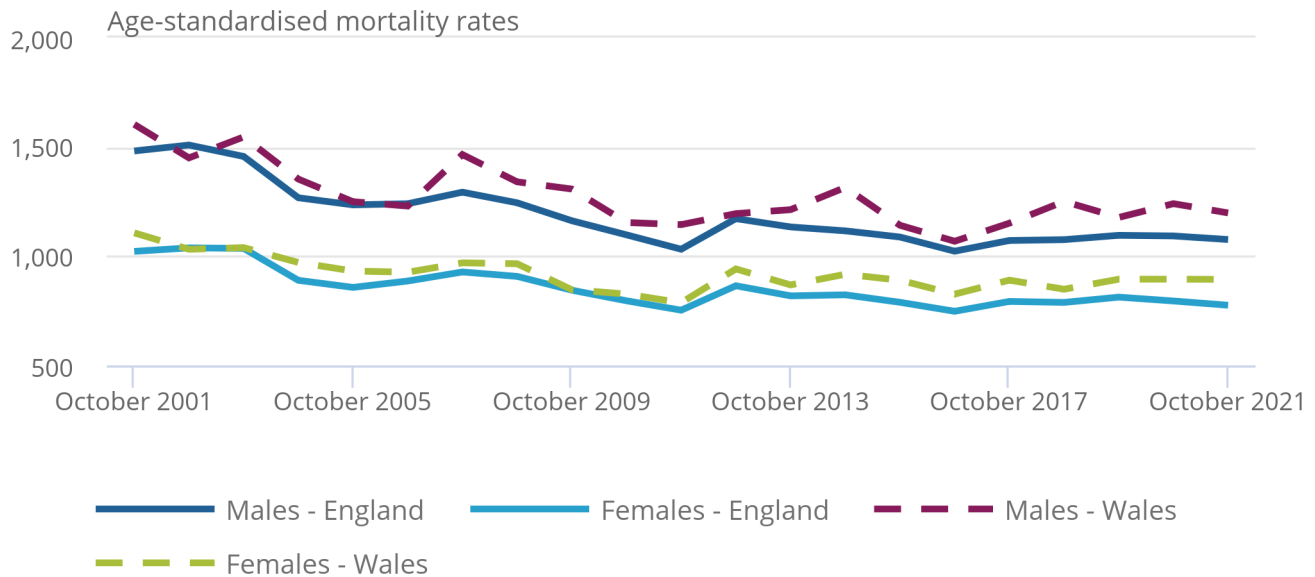
In Wales, mortality rates for October have generally decreased over time. The ASMR decreased from 1,314.2 per 100,000 people in October 2001 to a low of 937.6 deaths per 100,000 people in October 2016. The ASMR then increased to 1,049.4 per 100,000 people in October 2020; however, differences were not statistically significant compared with the year prior. In October 2021, the mortality rate reduced slightly to 1,031.0 deaths per 100,000 people; however, this was not significantly lower than the previous year.

Figure 1: Mortality rates for the month of October were lower in 2021 than in 2020 in England and Wales

Age-standardised mortality rates by sex, England and Wales, deaths registered in October 2001 to October 2021

Figure 1: Mortality rates for the month of October were lower in 2021 than in 2020 in England and Wales

Age-standardised mortality rates by sex, England and Wales, deaths registered in October 2001 to October 2021



Source: Office for National Statistics - Monthly mortality analysis

Notes:

1. Age-standardised mortality rates per 100,000 people, 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.
3. Figures for 2021 are based on provisional mortality data and projected populations.
4. Figures exclude non-residents.

3 . Deaths due to COVID-19 registered in October 2021

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 our [user guide](#).

Since March 2020 (when the first deaths involving coronavirus (COVID-19) were registered in England and Wales), where COVID-19 was mentioned on the death certificate it was the underlying cause of death in most cases (88.7% in England, 87.3% in Wales). For more information on our definition of COVID-19 deaths, see [Section 10: Measuring the data](#).

In this bulletin, we use the term "due to COVID-19" when referring only to deaths with an underlying cause of death of COVID-19, and we use the term "involving COVID-19" when referring to deaths that had COVID-19 mentioned anywhere on the death certificate, whether as an underlying cause or not.

Of the 43,435 deaths registered in October 2021 in England, 5.6% (2,411 deaths) were due to COVID-19, a smaller proportion than in September 2021 (6.6%). Including all deaths involving COVID-19 (2,873 deaths), this percentage increases to 6.6% of all deaths in England in October 2021.

In Wales, 9.5% of the 2,993 deaths registered in October 2021 were due to COVID-19 (284 deaths), a larger proportion than in September 2021 (8.5%). Including all deaths involving COVID-19 (333 deaths), this percentage increases to 11.1% of all deaths in Wales.

In Wales, the numbers of deaths due to COVID-19 increased compared with September 2021 but continued to be lower than the numbers seen in November 2020 to February 2021.

Mortality rates for deaths due to COVID-19

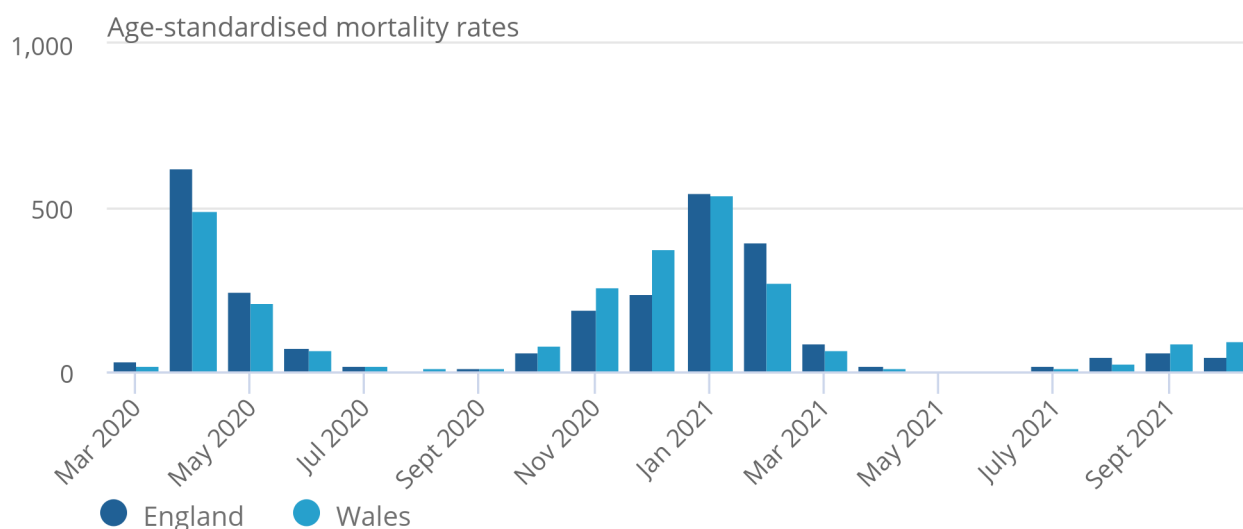
When adjusting for the size and age structure of the population, age-standardised mortality rates (ASMRs) for deaths due to COVID-19 in England for October 2021 showed [statistically significant](#) decreases compared with September 2021. The ASMR for deaths due to COVID-19 decreased to 50.8 deaths per 100,000 people in October 2021 (compared with 64.4 in September 2021). In Wales, the ASMR increased to 97.6 deaths per 100,000 people in October 2021 (compared with 89.6 in September 2021), but this increase was not statistically significant. October 2021 is the second month since December 2020 where the ASMR for deaths due to COVID-19 in Wales was higher than in England.

Figure 2: Mortality rates due to COVID-19 decreased significantly in England between September and October 2021; rates increased in Wales, but not significantly

Age-standardised mortality rates for deaths due to COVID-19, per 100,000 people, England and Wales, deaths registered in March 2020 to October 2021

Figure 2: Mortality rates due to COVID-19 decreased significantly in England between September and October 2021; rates increased in Wales, but not significantly

Age-standardised mortality rates for deaths due to COVID-19, per 100,000 people, England and Wales, deaths registered in March 2020 to October 2021



Source: Office for National Statistics - Monthly mortality analysis

Notes:

1. Age-standardised mortality rates per 100,000 people, 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 for 2021 are based on provisional mortality data and projected populations.
3. Figures exclude non-residents of England and Wales.
4. Deaths "due to COVID-19" include only deaths where COVID-19 was the underlying cause of death. Age-standardised mortality rates for all deaths involving COVID-19 are available in the [accompanying dataset](#).
5. The International Classification of Diseases, 10th Edition (ICD-10) definitions are as follows: coronavirus (COVID-19) (U07.1, U07.2 and U10.9). For more information on our definitions of COVID-19 deaths, see [Section 10: Measuring the data](#).
6. Because of small numbers, the rate for May 2021 in Wales is unreliable (19 deaths) so should be interpreted with caution, and the rate for June 2021 (3 deaths) has not been calculated.

In England, the ASMR for deaths due to COVID-19 significantly decreased in October 2021 for males (66.5 deaths per 100,000 males) and females (38.3 deaths per 100,000 females), compared with September 2021.

In October 2021, the ASMRs for deaths due to COVID-19 in Wales increased compared with September 2021 in males (129.2 deaths per 100,000 males) and decreased for females (73.7 deaths per 100,000 females), but these changes were not statistically significant.

More information on mortality rates by sex is available in Tables 3a and 3b of the [accompanying dataset](#).

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 latest insights](#).
- View [all coronavirus data](#).
- Find out how we are [working safely in our studies and surveys](#).

4 . Leading causes of death

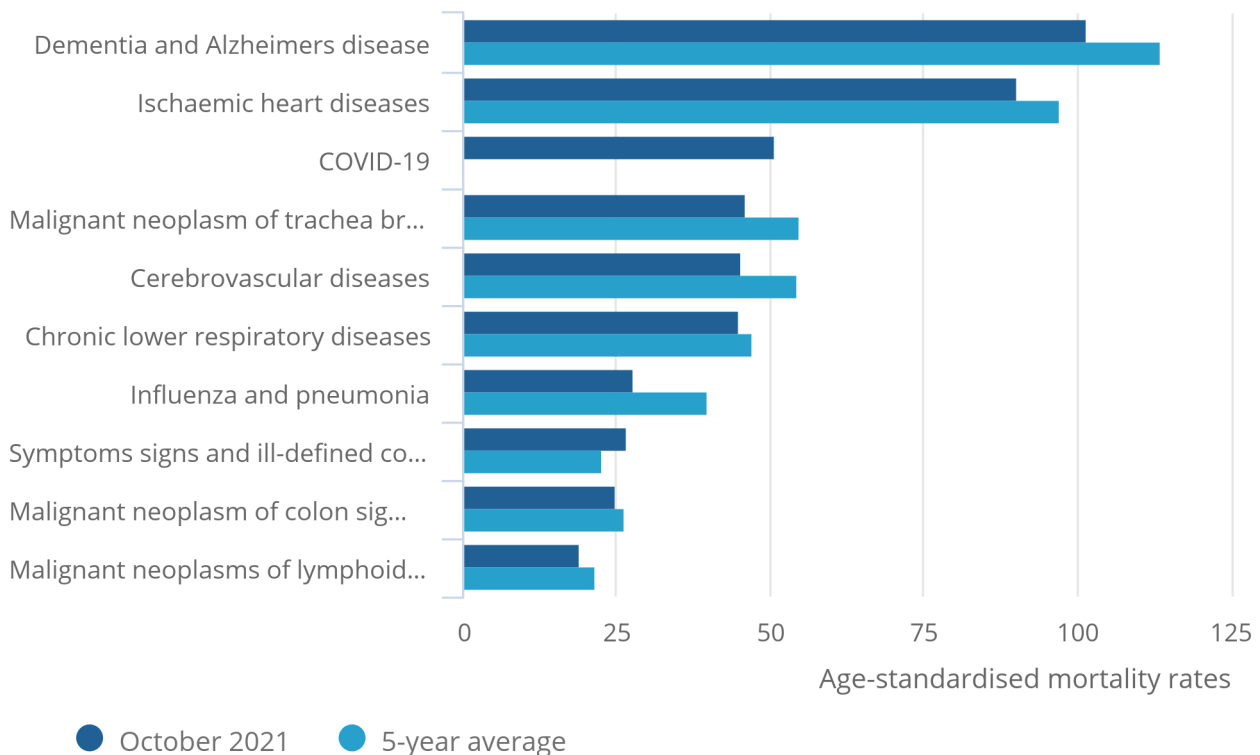
Figures 3 and 4 show the 10 most common underlying causes of death, (based on the [leading causes of death groupings](#)) registered in October 2021 for England and Wales, compared with the five-year average for October (2015 to 2019).

Figure 3: In England, dementia and Alzheimers disease remained the leading cause of death in October 2021, while COVID-19 remained the third leading cause

Age-standardised mortality rate for selected leading causes of death, per 100,000 people, England, deaths registered in October 2021

Figure 3: In England, dementia and Alzheimers disease remained the leading cause of death in October 2021, while COVID-19 remained the third leading cause

Age-standardised mortality rate for selected leading causes of death, per 100,000 people, England, deaths registered in October 2021



Source: Office for National Statistics - Monthly mortality analysis

Notes:

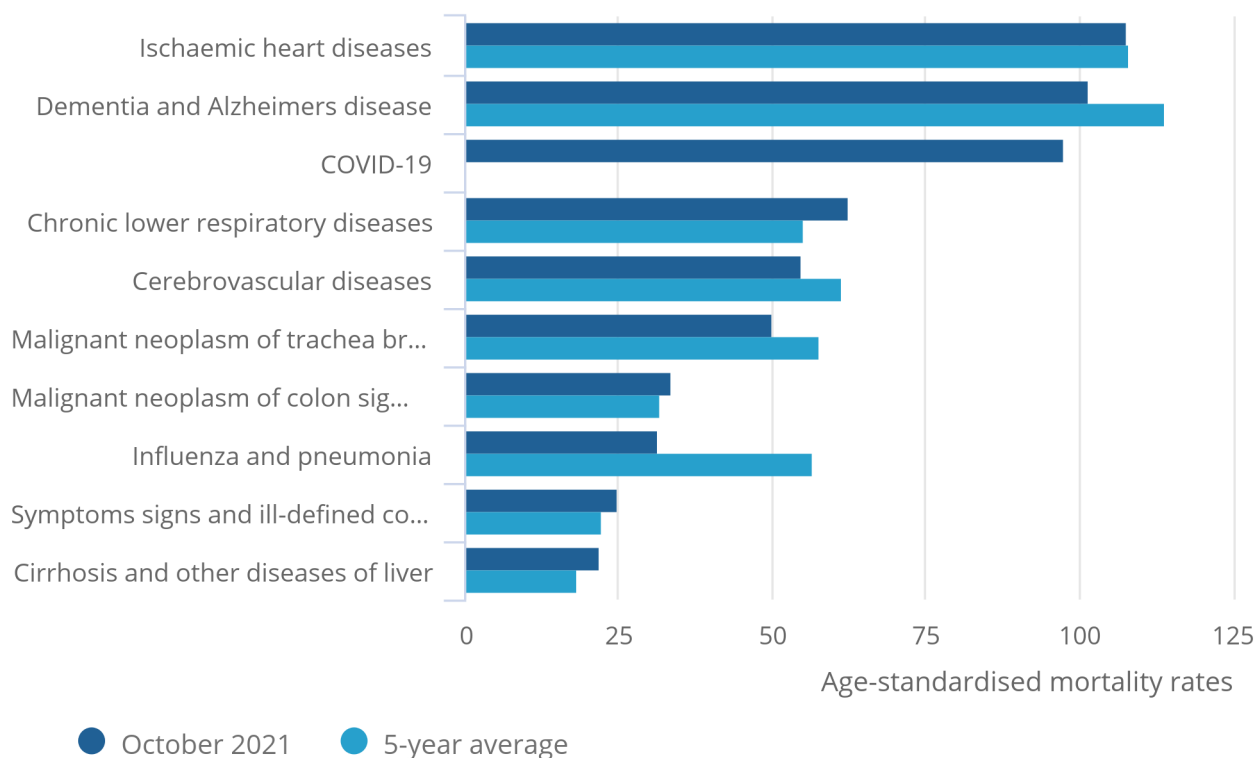
1. Age-standardised mortality rates per 100,000 population, standardised to the 2013 European Standard Population. Monthly rates in this bulletin are adjusted to allow for comparisons with annual rates. For more information, see [Section 10: Measuring the data](#).
2. Figures for 2021 are based on provisional mortality data and projected populations.
3. "COVID-19" includes only deaths where COVID-19 was the underlying cause of death.
4. Figures exclude deaths of non-residents.
5. The five-year average has been provided for 2015 to 2019 (rather than 2016 to 2020) because of the impact of the coronavirus (COVID-19) pandemic on deaths registered in 2020. The average for 2015 to 2019 provides a comparison of the number of deaths expected per month in a usual (non-pandemic) year.
6. Leading causes are ranked based on number of deaths, not age-standardised mortality rates.

Figure 4: In Wales, ischaemic heart diseases remained the leading cause of death in October 2021, while COVID-19 remained the third leading cause

Age-standardised mortality rate for selected leading causes of death, per 100,000 people, Wales, deaths registered in October 2021

Figure 4: In Wales, ischaemic heart diseases remained the leading cause of death in October 2021, while COVID-19 remained the third leading cause

Age-standardised mortality rate for selected leading causes of death, per 100,000 people, Wales, deaths registered in October 2021



Source: Office for National Statistics - Monthly mortality analysis

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 for 2021 are based on provisional mortality data and projected populations.
3. "COVID-19" includes only deaths where COVID-19 was the underlying cause of death.
4. Figures exclude deaths of non-residents.
5. The five-year average has been provided for 2015 to 2019 (rather than 2016 to 2020) because of the impact of the coronavirus (COVID-19) pandemic on deaths registered in 2020. The average for 2015 to 2019 provides a comparison of the number of deaths expected per month in a usual (non-pandemic) year.
6. Leading causes are ranked based on number of deaths, not age-standardised mortality rates.

In England, dementia and Alzheimer's disease continued to be the leading cause of death in October 2021, at 101.7 deaths per 100,000 people (4,890 deaths). In Wales, ischaemic heart diseases were the leading cause of death, at 107.9 deaths per 100,000 people (316 deaths).

In England, coronavirus (COVID-19) was the third leading cause of death in October 2021 (2,411 deaths), remaining consistent with September 2021 (2,955 deaths). In Wales, COVID-19 was the third leading cause of death in October 2021 (284 deaths), remaining consistent with September 2021 (253 deaths).

In England in October 2021, 6 of the 10 leading causes of death were [statistically significantly](#) lower than the five-year average (2015 to 2019), and 2 of the 10 leading causes had no significant difference to the five-year average. As seen in previous months, the mortality rate for deaths with an underlying cause of influenza and pneumonia was lower in October 2021 than the five-year average for October (30.6% lower). This is likely in part to be because of people continuing to follow coronavirus guidance, such as social distancing, reducing the spread of infections such as flu.

Similar to recent months, in October 2021, symptoms, signs and ill-defined conditions were significantly higher than the five-year average in England. In October 2021, the mortality rate for symptoms, signs and ill-defined conditions was 19.1% higher than the five-year average for October. This leading cause group includes mostly deaths with a code for "old age" but is also used for causes such as "frailty".

In Wales in October 2021, mortality rates for 8 of the 10 leading causes were similar to the five-year average. As seen in England, the October 2021 mortality rate for influenza and pneumonia was significantly lower than the five-year average for October (44.1% lower).

Leading causes of death registered in the year-to-date

In the first ten months (January to October) of 2021, the leading cause of death in England was COVID-19 (124.0 deaths per 100,000 population). In Wales, the leading cause of death was ischaemic heart diseases (113.1 deaths per 100,000 people), followed closely by COVID-19 (111.3 deaths per 100,000 people).

In England, the year-to-date COVID-19 mortality rate was significantly higher than the next leading cause of death (dementia and Alzheimer's disease). In Wales, in January to October 2021, the number of deaths due to ischaemic heart diseases and COVID-19 were similar (3,212 and 3,171 deaths respectively). There was no significant difference in mortality rates between the two causes.

More information on the 2021 year-to-date leading causes of death is available in Tables 11a and 11b of the [accompanying dataset](#). More in-depth [analysis of leading causes of death](#) is available in our annual publication based on finalised mortality data.

5 . Deaths registered in the year-to-date

There were 451,770 deaths registered in England and 29,462 in Wales during the first ten months (January to October) of 2021.

To gain a better idea of year-to-year differences in mortality rates, we calculated year-to-date age-standardised mortality rates (ASMRs) based on deaths registered in January to October of each year from 2001 to 2021 (Figure 5). For England, the year-to-date ASMR for 2021 was 973.9 deaths per 100,000 people, which was [statistically significantly](#) lower than the same period in 2020 (1,030.5 deaths per 100,000 people). However, when compared with the same period in 2019 (912.2 deaths per 100,000 people), the 2021 year-to-date mortality rate was significantly higher.

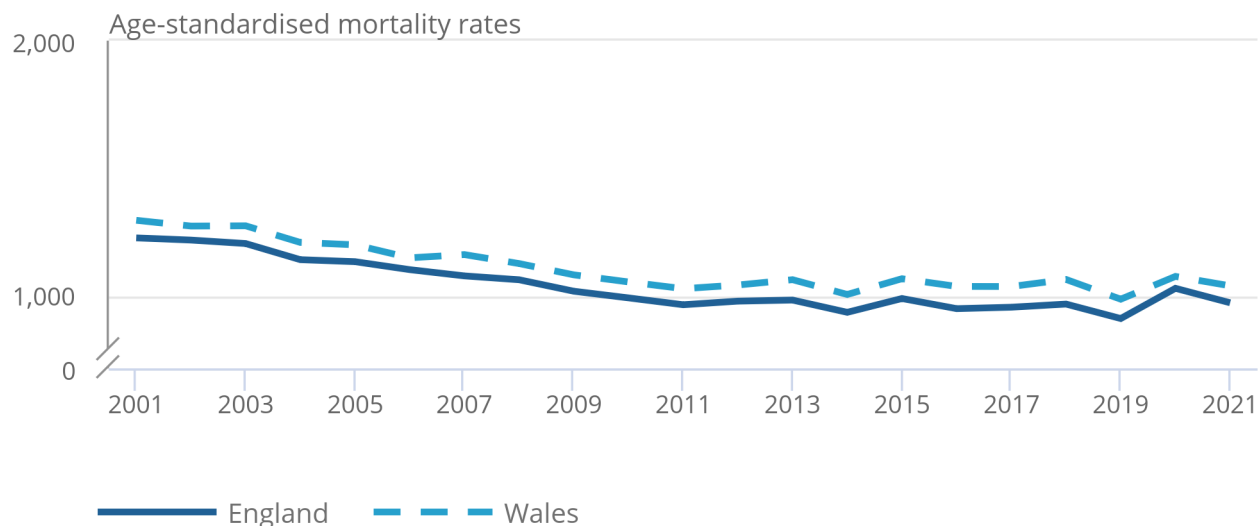
For Wales, the year-to-date ASMR for 2021 decreased to 1,040.3 deaths per 100,000 people. This was statistically significantly lower than the same period in 2020 (1,077.1 deaths per 100,000 people). But, as with England, January to October 2021 was significantly higher than the same period in 2019 (987.9 deaths per 100,000 people).

Figure 5: Year-to-date mortality rates in 2021 were significantly lower than 2020 but significantly higher than 2019 in both England and Wales

Age-standardised mortality rates, England and Wales, deaths registered in January to October 2001 to 2021

Figure 5: Year-to-date mortality rates in 2021 were significantly lower than 2020 but significantly higher than 2019 in both England and Wales

Age-standardised mortality rates, England and Wales, deaths registered in January to October 2001 to 2021



Source: Office for National Statistics - Monthly mortality analysis

Notes:

1. Age-standardised mortality rates per 100,000 people, 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.
3. Figures for 2021 are based on provisional mortality data and projected populations.
4. Figures exclude non-residents.

6 . Death occurrences in October 2021 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. Further information can be found in [Section 10: Measuring the data](#).

In England, 40,032 deaths occurred in October 2021 (and were registered by 7 November 2021). This was 830 fewer deaths than the five-year average (2015 to 2019) for October (2.0% lower). Of all deaths that occurred, 6.4% were due to coronavirus (COVID-19) (2,570 deaths).

In Wales, 2,954 deaths occurred in October 2021 (and were registered by 7 November 2021), which was 196 more deaths than the five-year average (7.1% higher). COVID-19 was the underlying cause of death in 10.1% of all deaths that occurred (299 deaths).

In England, the first death due to COVID-19 occurred on 30 January 2020, whereas in Wales the first death due to COVID-19 occurred on the 15 March 2020. Figures 6 and 7 show the trends in COVID-19 death occurrences from March 2020 onwards, for England and Wales respectively.

Figure 6: In England in October 2021, daily deaths due to COVID-19 remained low

Number of deaths occurring on each day from March 2020 to October 2021, five-year average and range, England

Notes:

1. Figures are for deaths occurring on each day rather than deaths registered, registered up to 7 November. Death occurrences will increase as more deaths are registered, particularly for later dates.
2. Figures for 2021 (including deaths that occurred in 2020 but were registered in 2021) are based on provisional mortality data.
3. Figures exclude non-residents.
4. "COVID-19 deaths" include only deaths where COVID-19 was the underlying cause.
5. This chart includes deaths from 1 March 2020. Three deaths due to COVID-19 occurred prior to this in England (one death in January 2020 and two deaths in February 2020), but are not included here.

Download this chart

[.xlsx](#)

Figure 7: In Wales in October 2021, daily deaths due to COVID-19 increased slightly

Number of deaths occurring on each day from March 2020 and October 2021, five-year average and range, Wales

Notes:

1. Figures are for deaths occurring on each day rather than deaths registered, registered up to 7 November. Death occurrences will increase as more deaths are registered, particularly for later dates.
2. Figures for 2021 (including deaths that occurred in 2020 but were registered in 2021) are based on provisional mortality data.
3. Figures exclude non-residents.
4. "COVID-19 deaths" include only deaths where COVID-19 was the underlying cause.

Download this chart

[.xlsx](#)

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 October was below the range of the last five years are likely to be a result of when the data extract was created. Specifically, deaths that occurred towards the end of the month may not have been registered by the time the data extract was created. We would therefore expect the number of death occurrences to be higher in future releases.

7 . Pre-existing conditions of people whose death was due to COVID-19, deaths registered in July to September 2021

In this section we use the multiple health conditions that can be recorded on a death certificate to identify deaths where there were pre-existing health conditions that contributed to the cause of death where death was due to coronavirus (COVID-19). Health conditions are recorded on the death certificate only if the certifying doctor or coroner believed they made some contribution to the death, direct or indirect. The death certificate does not include all health conditions from which the deceased might have suffered if they were not considered relevant. However, the fact that a pre-existing condition was recorded does not suggest that the deceased was likely to have died from that condition in the absence of the COVID-19 infection.

This section analyses data from Quarter 3 (July to Sept) of 2021, whereas the rest of the bulletin analyses data up to October.

This analysis of pre-existing conditions covers England and Wales as a whole only because of the small number of deaths due to COVID-19 in Wales in Quarter 3 2021 (358 deaths due to COVID-19).

Overall patterns of pre-existing conditions for COVID-19 deaths in Quarter 3 were similar to [Quarter 2 \(Apr to June\) of 2021](#). Diabetes remained the most common pre-existing condition of deaths due to COVID-19 (22.5%), followed by chronic lower respiratory diseases which were second most common at 19.4% (up from third most common in Quarter 2 at 15.3%).

In Quarter 3, the total number of deaths due to COVID-19 in England and Wales increased to 6,572 deaths (from 1,838 deaths in Quarter 2). However, the proportion of COVID-19 deaths for each age group remained similar. Those aged between 0 and 64 years accounted for 24.2% of all COVID-19 deaths in Quarter 3 (compared with 26.3% in Quarter 2) and those aged 65 years and over accounted for 75.8% of all COVID-19 deaths (compared with 73.7% in Quarter 2). Overall, the proportion of COVID-19 deaths with no pre-existing conditions remained similar in Quarter 3 (17.4%) to Quarter 2 (18.8%) (see Table 2 in the [dataset](#)). Likewise, the average number of different pre-existing conditions per COVID-19 death remained similar between these two periods (1.9 and 2.0 pre-existing conditions on average in Quarter 3 and Quarter 2 respectively).

In Quarter 3, diabetes remained the most common pre-existing condition for deaths due to COVID-19 occurring in hospitals (24.8%, down slightly from 25.9% in Quarter 2). Dementia and Alzheimer's disease also remained the most common pre-existing condition for deaths occurring in care homes (46.3%), the largest increase in comparison with Quarter 2 (25.3%).

The proportion of COVID-19 deaths occurring in private homes with diabetes as a pre-existing condition decreased to 14.6% (from 19.2% in Quarter 2). Despite this, diabetes returned to being the most common pre-existing condition for COVID-19 deaths in private homes, after dropping to second most common in Quarter 2. Chronic lower respiratory diseases were the second most common pre-existing condition for COVID-19 deaths in private homes at 13.7% (from 11.6% in Quarter 2 where it was fourth most common). The proportion of deaths due to COVID-19 in private homes with hypertensive diseases as a pre-existing condition, dropped from most common in Quarter 2 (20.8%) to fifth most common in Quarter 3 (9.1%).

8 . Monthly mortality data

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

Dataset | Released 23 November 2021

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

[Deaths due to COVID-19 by English region and Welsh health board](#)

Dataset | Released 23 November 2021

Provisional age-standardised mortality rates for deaths due to COVID-19 by age, sex, local authority and deprivation indices, and numbers of deaths by Middle-layer Super Output Area.

[Deaths involving COVID-19 by month of registration, UK](#)

Dataset | Released 23 November 2021

Provisional age-standardised mortality rates for deaths involving COVID-19 by sex and month of death registration, for England, Wales, Scotland, and Northern Ireland.

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

Dataset | Released 23 November 2021

Number of deaths registered each month by area of usual residence for England and Wales, by region, county, local and unitary authority, and London borough.

[Pre-existing conditions of people who died due to COVID-19, England and Wales](#)

Dataset | Released 23 November 2021

Pre-existing conditions of people who died due to COVID-19, broken down by country, broad age group, and place of death occurrence, usual residents of England and Wales.

[Single year of age and average age of death of people whose death was due to or involved COVID-19](#)

Dataset | Released on 23 November 2021

Single year of age and average age of death (median and mean) of persons whose death was due to COVID-19 or involved COVID-19, deaths registered in March 2020 to September 2021, England and Wales. Please note that data for 2021 is provisional. Keywords: cause of death, death registrations, deaths by local area, pre-existing conditions, age-standardised mortality rate, coronavirus

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 [World Health Organization \(WHO\)](#).

Pre-existing condition

A pre-existing condition is defined as any condition that either preceded the disease of interest (for example, COVID-19) in the sequence of events leading to death or was a contributory factor in the death but was not part of the causal sequence. More information on the pre-existing conditions methodology is available in the [accompanying dataset](#).

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 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

This bulletin provides timely surveillance of mortality in England and Wales, based on the best available provisional data, including all-cause mortality and coronavirus (COVID-19) deaths.

Analysis contains deaths registered in October 2021 by age and sex, and also includes deaths that occurred in October 2021 by date of death. Non-residents of England and Wales are excluded. In October 2021, there were 83 deaths of non-residents that were registered in England and Wales.

Data sources

This bulletin is based primarily on death registrations. 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. There is 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 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 on the first working day after the eighth of the month, to allow time for deaths to be registered. For more detail on the data sources used, see our [methodology article](#).

Definition of COVID-19 deaths

We use the term "due to COVID-19" when referring only to deaths with an underlying cause of death of COVID-19. When taking into account all of the deaths that had COVID-19 mentioned anywhere on the death certificate, whether as an underlying cause or not, we use the term "involving COVID-19". The International Classification of Diseases (ICD-10) codes used to define COVID-19 are:

- U07.1: COVID-19, virus identified
- U07.2: COVID-19, virus not identified
- U09.9: Post-COVID condition, unspecified (this cannot be assigned to the underlying cause of death so is not included in the "deaths due to COVID-19" definition)
- U10.9: Multisystem inflammatory syndrome associated with COVID-19, unspecified.

Our definition of COVID-19 (regardless of whether it was the underlying cause or mentioned elsewhere on the death certificate) includes some cases where the certifying doctor suspected the death involved COVID-19 but was not certain (U07.2). For example, a doctor may have clinically diagnosed COVID-19 based on symptoms but this diagnosis may not have been confirmed with a test, so they may write "suspected COVID-19" on the death certificate. Of the 134,375 deaths due to COVID-19, 4,139 (3.1%) were classified as "suspected" COVID-19. Including all 151,574 deaths involving COVID-19, "suspected" COVID-19 was recorded on 3.1% (4,763 deaths) of all deaths involving COVID-19 in England and Wales. For more information on the ICD-10 definition of COVID-19, see [Section 8 of the methodology article](#).

Monthly mortality rates

To calculate monthly mortality rates that are comparable with annual rates, adjustments must be made to annual population estimates to account for the time period covered. [Section 2 of the methodology article](#) provides more detail on how this is calculated.

Acknowledgement

We would like to thank Craig Arnold, Heidi Wilson, Rachel Woods, and Ben Aspey for their valued contribution to this bulletin.

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 for 2021 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.

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](#).

12 . Related links

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

Bulletin | Released 23 November 2021

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 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.

[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.

[Deaths at home increased by a third in 2020, while deaths in hospitals fell except for COVID-19](#)

Article | Released 7 May 2021

The coronavirus (COVID-19) was the main reason for a rise in the overall number of deaths registered in England and Wales in 2020. Many deaths not due to COVID-19, which would normally have occurred in hospital, happened in private homes instead.

[Excess mortality and mortality displacement in England and Wales: 2020 to mid-2021](#)

Article | Released 15 October 2021

Deaths registered in England and Wales by week, from 28 December 2019 to 2 July 2021. Breakdowns include country, sex, age group, region, place of death, and leading cause. Includes analysis of excess deaths and relative cumulative age-standardised mortality rates.

[Deaths registered in private homes, England and Wales: 2020 final and January to June 2021, provisional](#)

Article | Released 10 November 2021

Deaths registered in private homes by age, sex, place of occurrence and selected underlying causes of death and the leading causes of death.