Office for National Statistics

Statistical bulletin

# Monthly mortality analysis, England and Wales: February 2022

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.

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Release date:
24 March 2022

Next release:
27 April 2022

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# 1 . Main points

- In February 2022, there were 43,081 deaths registered in England, 3,338 deaths (7.2%) fewer than the February five-year average (2016 to 2019, and 2021); there were 2,730 deaths registered in Wales, 267 deaths (8.9%) fewer than the February average.

- Compared with the 2015 to 2019 five-year average (as opposed to the new five-year average used in the previous main point), in February 2022 there were 987 fewer deaths (2.2%) in England, and 209 fewer deaths (7.1%) in Wales.

- The leading cause of death in England in February 2022 was dementia and Alzheimer's disease (accounting for 11.6% of all deaths); in Wales, the leading cause was ischaemic heart diseases (10.8% of all deaths).

- Coronavirus (COVID-19) was the third leading cause of death in February 2022 in England (accounting for 5.6% of all deaths) and the sixth leading cause of death in Wales (4.4% of all deaths).

- The proportion of deaths due to COVID-19 (of all deaths that involved COVID-19) decreased between January 2022 and February 2022 in both England (from 73.7% to 66.0%) and Wales (from 76.2% to 61.7%).

- Taking into account the population size and age structure, the age-standardised mortality rate (ASMR) for deaths due to COVID-19 decreased significantly between January 2022 and February 2022 in both England (from 79.3 to 55.3 deaths per 100,000 people) and Wales (from 81.0 to 45.7 deaths per 100,000 people).

- The year-to-date (January to February) ASMR for 2022 was the lowest since our time series started in 2001 in both England (1,017.6 deaths per 100,000 people) and Wales (1,078.3 deaths per 100,000 people).

- The North East was the English region with the highest ASMR for deaths due to COVID-19 in February 2022 (75.4 deaths per 100,000 people).

# 2 . Death registrations and the overall mortality rate for February 2022

Based on provisional data, there were 43,081 deaths registered in England in February 2022. This was 12,404 fewer deaths than in February 2021 and 3,338 fewer deaths (7.2%) than the five-year average (2016 to 2019, and 2021). Compared with the previous five-year average (2015 to 2019) there were 987 fewer deaths (2.2%) in February 2022 in England.

In Wales, the provisional number of deaths registered in February 2022 was 2,730. This was 468 fewer deaths than in February 2021 and 267 fewer deaths (8.9%) than the five-year average for February. Compared with the previous five-year average (2015 to 2019) there were 209 fewer deaths (7.1%) in February 2022 in Wales.

The five-year average for 2022 has been provided for 2016 to 2019 and 2021. This moves our five-year average along by a year but does not include the exceptionally high number of deaths seen in 2020. This is so that deaths in 2022 are compared with a five-year average that is up-to-date (rather than 2015 to 2019) while still being close to representing a usual (non-pandemic) year. For more information, see the Calculating excess deaths section.

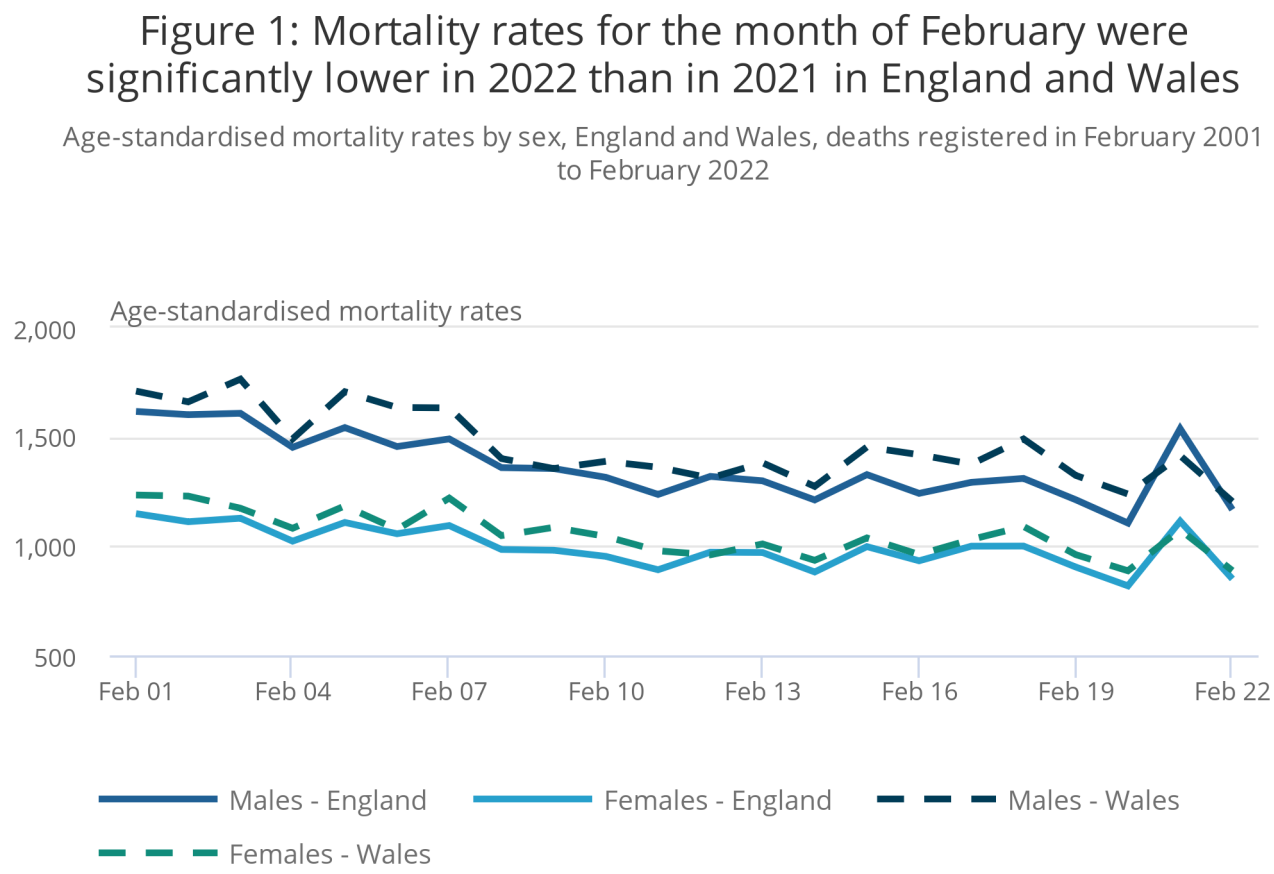
Age-standardised mortality rates (ASMRs) are used for comparisons over time rather than numbers of deaths, as ASMRs account for changes to the population size and age structure.

In England, 2001 was the year with the highest February mortality rates since our time series began in 2001, at 1,339.3 per 100,000 people. Since then, overall mortality rates in England for the month of February generally decreased to a low of 946.4 deaths per 100,000 people in February 2020. A statistically significant increase in the mortality rate was then observed in February 2021 (1,306.8 deaths per 100,000 people) compared with February 2020, because of the second wave of the COVID-19 pandemic. In February 2022, the ASMR significantly decreased compared with the previous year (993.6 deaths per 100,000 people), however it was still significantly higher than mortality rates observed in 2020. This pattern in ASMRs over time was seen in both males and females (Figure 1).

In Wales, mortality rates for February have generally decreased over time. The ASMR decreased from 1,431.2 per 100,000 people in February 2001, the highest in the timeseries, to a low of 1,034.4 deaths per 100,000 people in February 2022. As observed in England, Wales had a statistically significant increase in mortality rate in February 2021 (1,229.3 deaths per 100,000 people), compared with February 2020 (1,043.0 per 100,000 people). In February 2022, the ASMR significantly decreased compared with the previous year (1,034.4 deaths per 100,000 people) but was not significantly different to 2020 mortality rates. This pattern in ASMRs over time was seen in both males and females (Figure 1).

**Figure 1: Mortality rates for the month of February were significantly lower in 2022 than in 2021 in England and Wales**

**Age-standardised mortality rates by sex, England and Wales, deaths registered in February 2001 to February 2022**




**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 the Measuring the data section.

2. Figures are for deaths registered rather than deaths occurring in each period.

3. Figures for 2021 and 2022 are based on provisional mortality data and projected populations.

4. Figures exclude non-residents.

# 3 . Deaths due to COVID-19 registered in February 2022

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 to mortality statistics.

Since March 2020 (when the first deaths involving coronavirus (COVID-19) were registered in England and Wales), when COVID-19 was mentioned on the death certificate it was the underlying cause of death in most cases (87.5% in England, 86.2% in Wales).

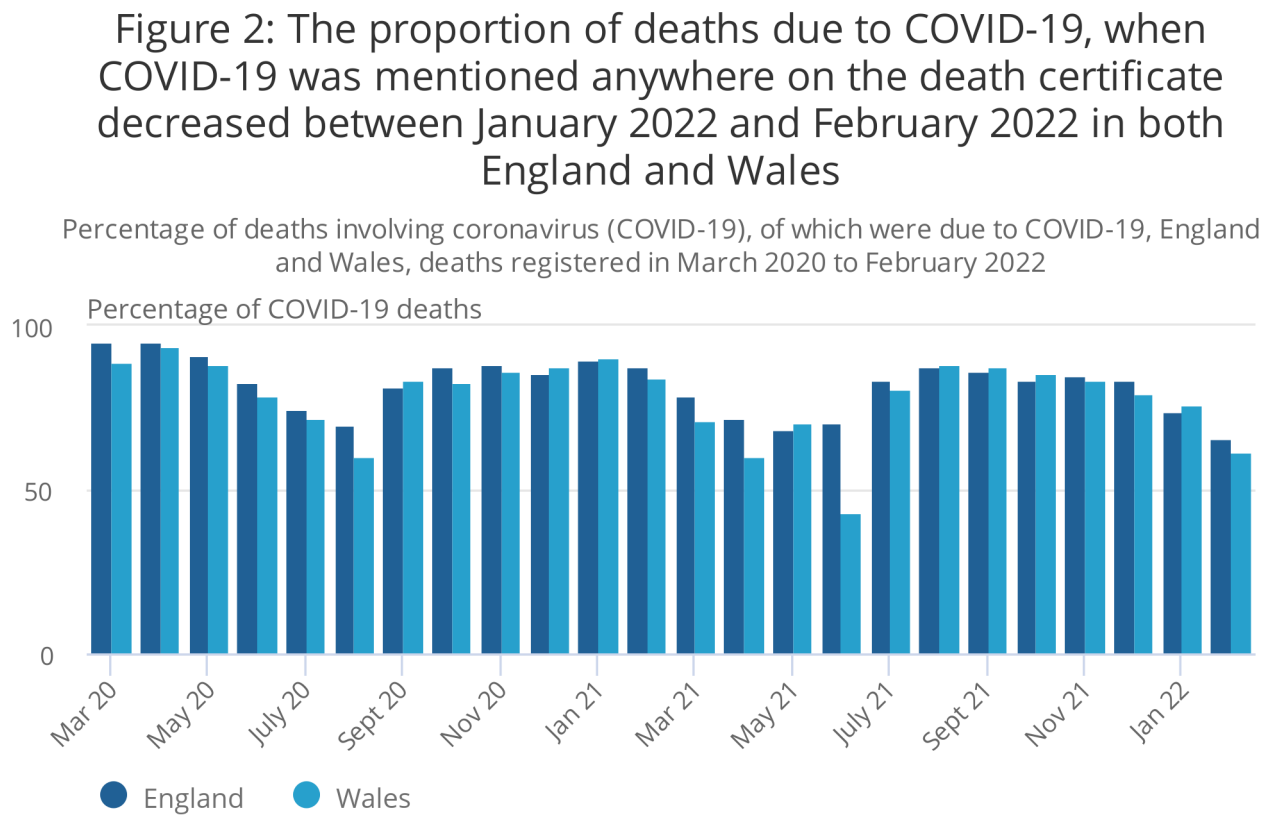
In this bulletin, we use the term "due to COVID-19" when referring only to deaths with an underlying cause of death of COVID-19, and we use the term "involving COVID-19" when referring to deaths that had COVID-19 mentioned anywhere on the death certificate, whether as an underlying cause or not.

In England, April 2020 had the highest proportion of deaths involving COVID-19 that were also due to COVID-19 (95.2%), whereas February 2022 had the lowest proportion (66.0%). May 2021 was previously the month with the lowest proportion of deaths involving COVID-19 that were also due to COVID-19 (68.8%). In Wales, April 2020 had the highest proportion of deaths involving COVID-19 that were also due to COVID-19 (94.1%), whereas June 2021 had the lowest proportion (42.9%). These proportions generally correspond with periods of low or high numbers of COVID-19 deaths in England and Wales. However, February 2022 has not followed this pattern as deaths involving COVID-19 still accounted for 8.5% of all deaths in England in February 2022.

The proportion of deaths due to COVID-19 (of all deaths that involved COVID-19) decreased between January 2022 and February 2022 in both England (from 73.7% to 66.0%) and Wales (from 76.2% to 61.7%). For more information on our definition of COVID-19 deaths, see the Measuring the data section.

**Figure 2: The proportion of deaths due to COVID-19, when COVID-19 was mentioned anywhere on the death certificate decreased between January 2022 and February 2022 in both England and Wales**

**Percentage of deaths involving coronavirus (COVID-19), of which were due to COVID-19, England and Wales, deaths registered in March 2020 to February 2022**




**Source: Office for National Statistics – Monthly mortality analysis**

**Notes:**

1. Figures are for deaths registered rather than deaths occurring in each period.
2. Figures for 2021 and 2022 are based on provisional mortality data and projected populations.
3. Figures exclude non-residents.
4. Deaths 'due to COVID-19' include only deaths where COVID-19 was the underlying cause of death, whereas deaths “involving COVID-19” include deaths where COVID-19 was mentioned anywhere on the death certificate. For more information on our definitions of COVID-19 deaths, see the Measuring the data section.
5. Because of small numbers, the proportions for May 2021 and June 2021 in Wales should be interpreted with caution.

Of the 43,081 deaths registered in February 2022 in England, 5.6% (2,405 deaths) were due to COVID-19, a smaller proportion than in January 2022 (7.6%). Including all deaths involving COVID-19 (3,644 deaths), this percentage increases to 8.5% of all deaths in England in February 2022.

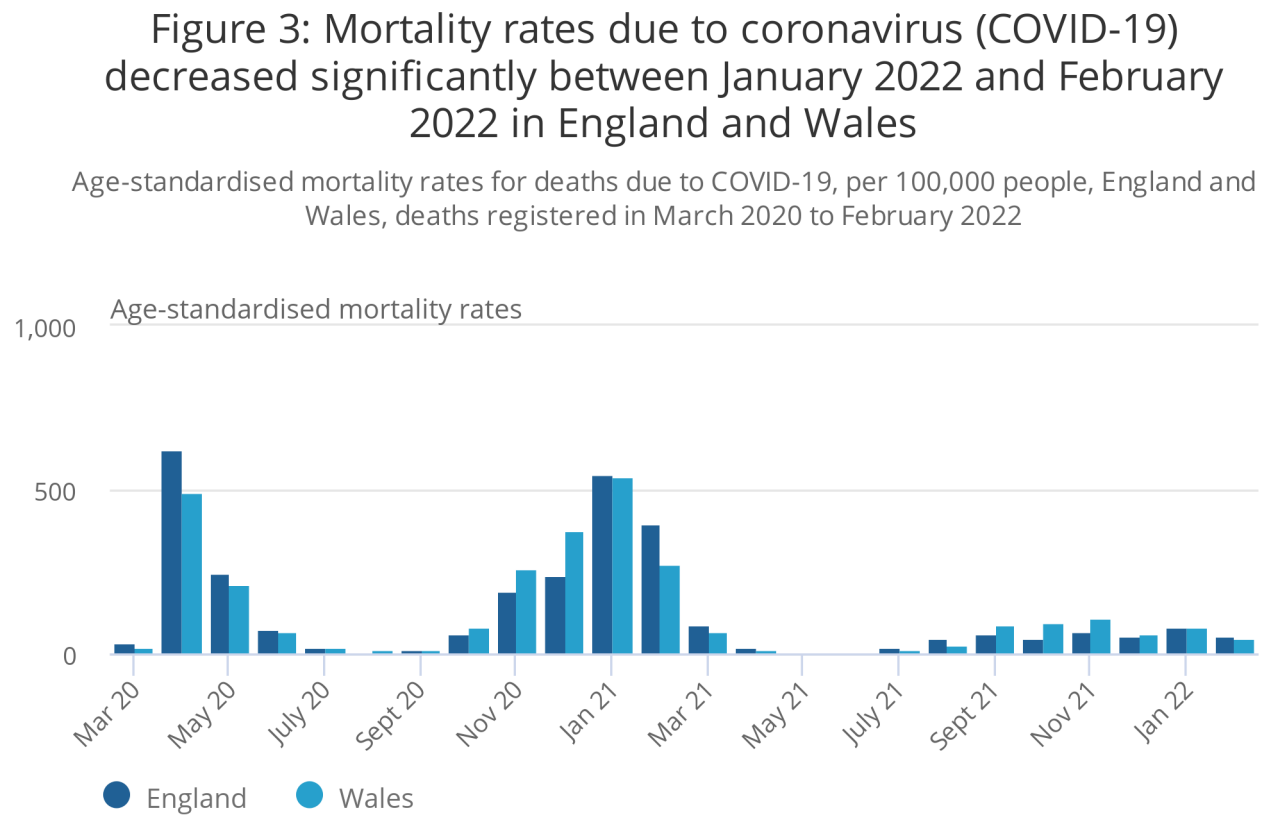
In Wales, 4.4% of the 2,730 deaths registered in February 2022 were due to COVID-19 (121 deaths), a smaller proportion than in January 2022 (7.3%). Including all deaths involving COVID-19 (196 deaths), this percentage increases to 7.2% of all deaths in Wales.

## 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 both England and Wales for February 2022 showed statistically significant decreases compared with January 2022 (Figure 3). The ASMR for deaths due to COVID-19 decreased to 55.3 deaths per 100,000 people in February 2022 in England (compared with 79.3 deaths per 100,000 people in January 2022), and to 45.7 deaths per 100,000 people in Wales (compared with 81.0 deaths per 100,000 people in January 2022). February 2022 was the first time in six months where the ASMR for deaths due to COVID-19 in Wales was lower than in England, however this difference was not significant.

**Figure 3: Mortality rates due to coronavirus (COVID-19) decreased significantly between January 2022 and February 2022 in England and Wales**

**Age-standardised mortality rates for deaths due to COVID-19, per 100,000 people, England and Wales, deaths registered in March 2020 to February 2022**




**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 the Measuring the data section.

2. Figures for 2021 and 2022 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, whereas deaths “involving COVID-19” include deaths where COVID-19 was mentioned anywhere on the death certificate. For more information on our definitions of COVID-19 deaths, see the Measuring the data section.

5. The proportions for May 2021 and June 2021 in Wales should be interpreted with caution because of small numbers.

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 and is denoted as [z] in the data downloads.

In England, the ASMR for deaths due to COVID-19 significantly decreased in February 2022 for both males (73.4 deaths per 100,000 males) and females (42.7 deaths per 100,000 females), compared with January 2022.

In Wales, the ASMR for deaths due to COVID-19 in February 2022 decreased significantly for both males (62.2 deaths per 100,000 males) and females (33.3 deaths per 100,000 females), compared with January 2022.

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.
- View all coronavirus data.
- Find out how we are working safely in our studies and surveys.

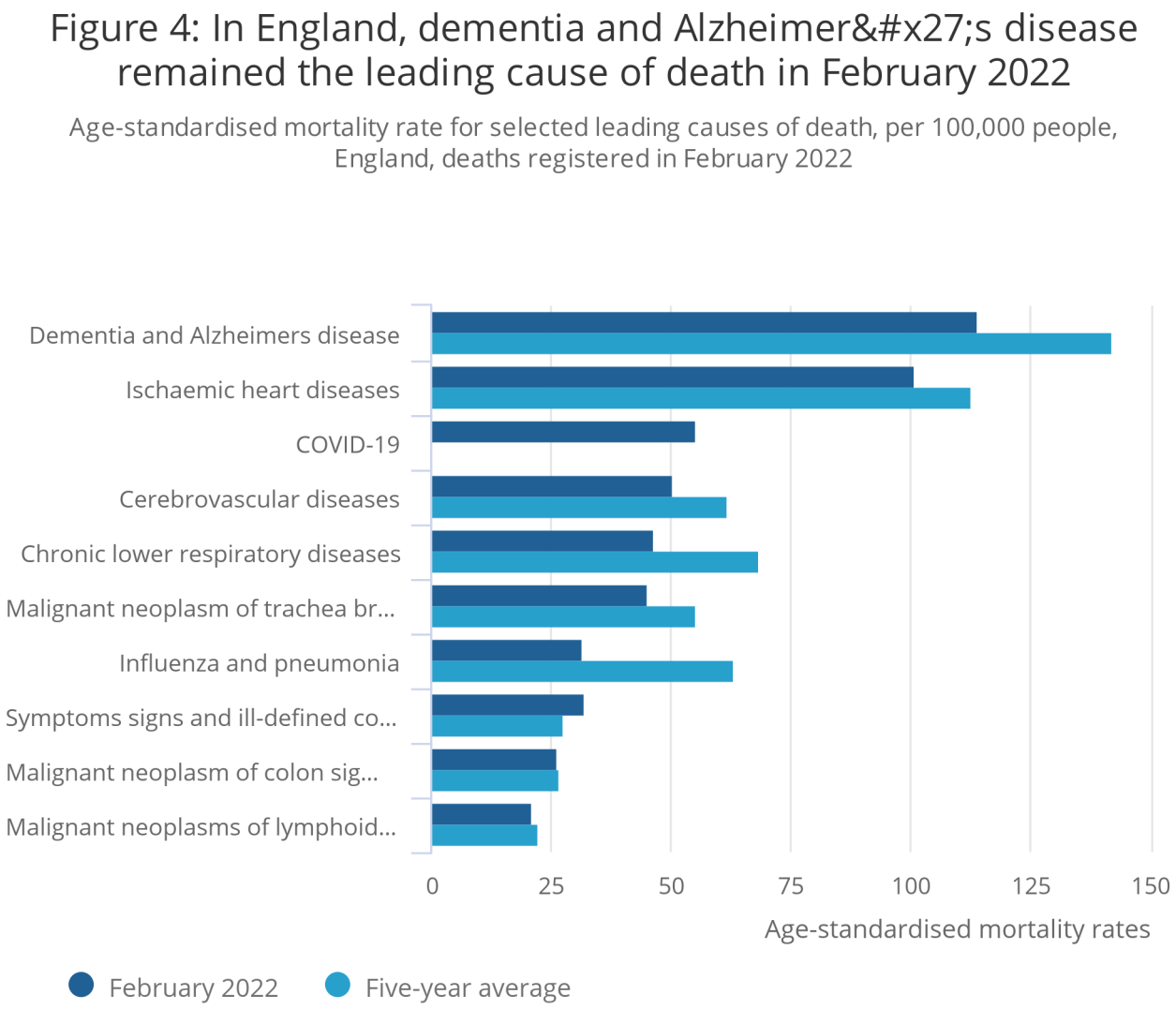
# 4 . Leading causes of death

Figure 4 shows the 10 most common underlying causes of death (based on the leading causes of death groupings ), registered in February 2022 for England, compared with the five-year average for February (2016 to 2019, and 2021).

Figure 5 shows the 11 most common underlying causes of death registered in February 2022 for Wales, compared with the five-year average. As deaths due to symptoms, signs and ill-defined conditions and malignant neoplasms of lymphoid haematopoietic and related tissue, both ranked as the tenth leading cause of death in Wales in February 2022 (59 deaths), they have both been included.

**Figure 4: In England, dementia and Alzheimer's disease remained the leading cause of death in February 2022**

**Age-standardised mortality rate for selected leading causes of death, per 100,000 people, England, deaths registered in February 2022**




**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 the Measuring the data section.

2. Figures for 2021 and 2022 are based on provisional mortality data and projected populations.

3. Coronavirus (COVID-19) includes only deaths where COVID-19 was the underlying cause of death.

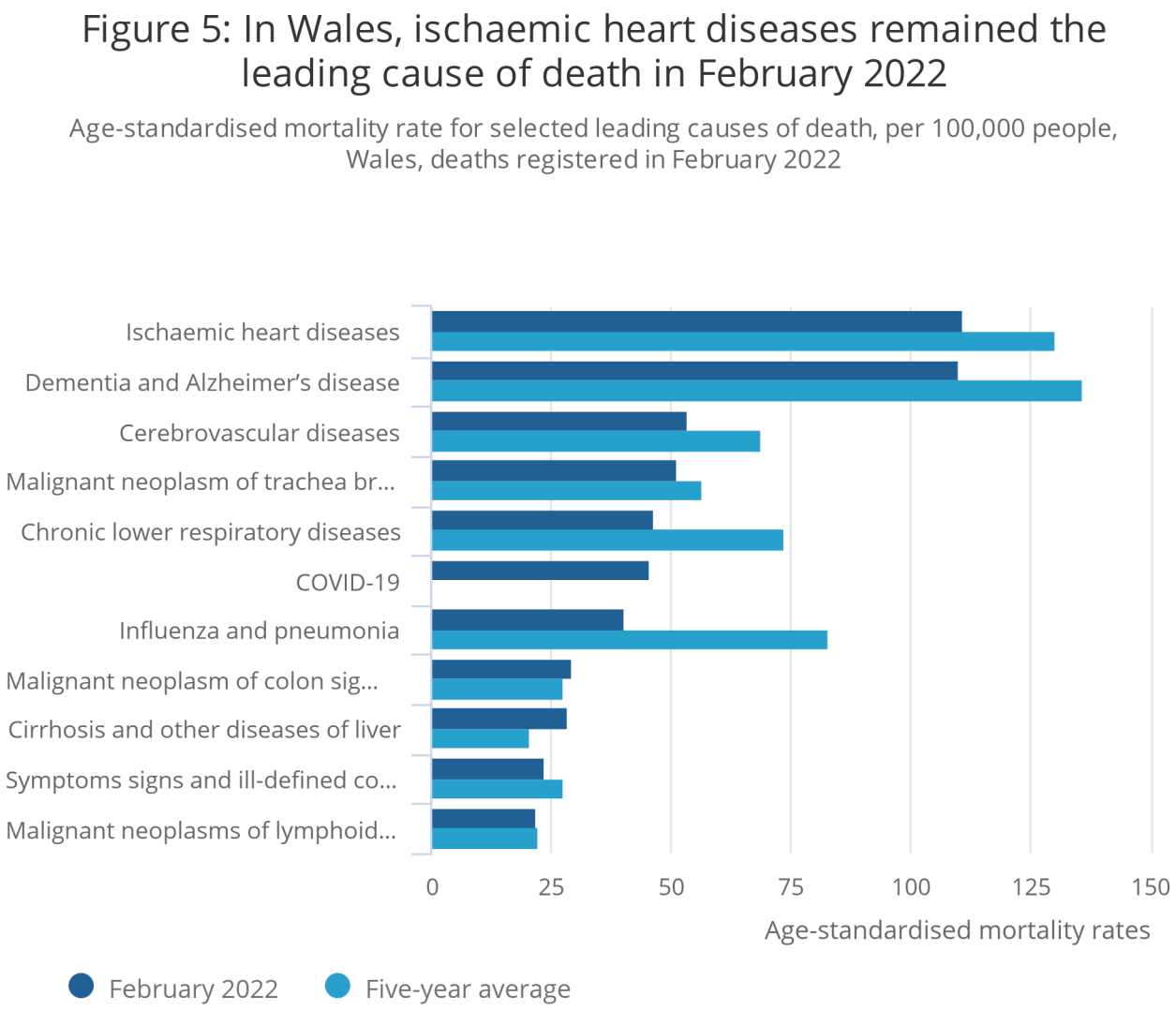
4. Figures exclude deaths of non-residents.

5. The five-year average has been provided for 2016 to 2019 and 2021 because of the impact of the COVID-19 pandemic on deaths registered in 2020. This provides an up to date (rather than 2015 to 2019) comparison of the number of deaths expected per month in a usual (non-pandemic) year. Where a five-year average cannot be provided, it is denoted as [z] in the data downloads.

6. Leading causes are ranked based on number of deaths, not age-standardised mortality rates.

**Figure 5: In Wales, ischaemic heart diseases remained the leading cause of death in February 2022**

**Age-standardised mortality rate for selected leading causes of death, per 100,000 people, Wales, deaths registered in February 2022**




**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 the Measuring the data section.

2. Figures for 2021 and 2022 are based on provisional mortality data and projected populations.

3. Coronavirus (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 2016 to 2019 and 2021 because of the impact of the COVID-19 pandemic on deaths registered in 2020. This provides an up to date comparison (rather than 2015 to 2019) of the number of deaths expected per month in a usual (non-pandemic) year. Where a five-year average cannot be provided, it is denoted as [z] in the data downloads.

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 February 2022, at 114.1 deaths per 100,000 people (4,991 deaths). In Wales, ischaemic heart diseases were the leading cause of death, at 111.0 deaths per 100,000 people (296 deaths).

In England, coronavirus (COVID-19) was the third leading cause of death in February 2022 (2,405 deaths), remaining consistent with January 2022. In Wales, COVID-19 was the sixth leading cause of death in February 2022 (121 deaths), falling from the third leading cause in January 2022.

In England in February 2022, 6 of the 10 leading causes of death were statistically significantly lower than the five-year average, and 1 of the 10 leading causes was statistically significantly higher than the five-year average (symptoms, signs, and ill-defined conditions, with a 15.9% increase in the age-standardised mortality rate (ASMR)). As seen in previous months, the mortality rate for deaths with an underlying cause of influenza and pneumonia was lower in February 2022 than the five-year average for February (50.0% 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.

In Wales in February 2022, 5 of the 11 leading causes of death were statistically significantly lower than the five-year average and 5 of the 11 leading causes were not significantly different from the five-year average. As seen in England, the Wales February 2022 mortality rate for influenza and pneumonia was significantly lower than the five-year average for February (51.4% lower).

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

In the first two months (January and February) of 2022, the leading cause of death in England was dementia and Alzheimer's disease (119.0 deaths per 100,000 people). In Wales, the leading cause of death was ischaemic heart diseases (119.7 deaths per 100,000 people).

In England, the year-to-date COVID-19 mortality rate was significantly lower than the top two leading causes of death (dementia and Alzheimer's disease and ischaemic heart disease), and statistically significantly higher than all other leading causes. Similarly, in January to February in Wales, the mortality rates of deaths due to ischaemic heart diseases and dementia and Alzheimer’s were statistically significantly higher than COVID-19, however deaths due to COVID-19 was not statistically significantly higher than all other leading causes.

More information on the 2022 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

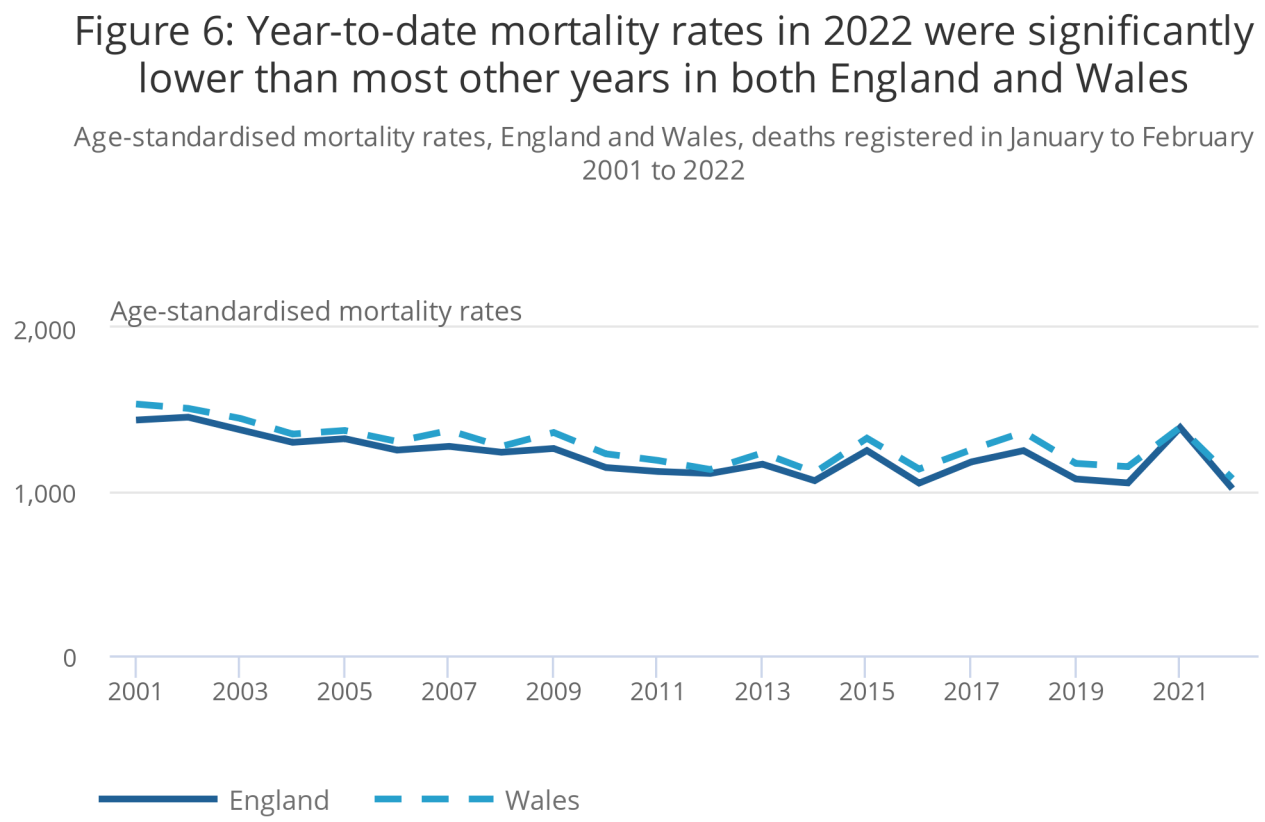
There were 92,888 deaths registered in England and 5,994 in Wales during the first two months (January and February) of 2022.

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 and February of each year from 2001 to 2022 (Figure 6). For England, the year-to-date ASMR for 2022 was 1,017.6 deaths per 100,000 people, which was statistically significantly lower than the same period in 2021, with 1,389.9 deaths per 100,000 people. The year-to-date ASMR for 2022 is the lowest since our time series started in 2001.

For Wales, the year-to-date ASMR for 2022 was 1,078.3 deaths per 100,000 people, which was statistically significantly lower than the same period in 2021 (1,391.5 deaths per 100,000 people). The year-to-date ASMR for Wales in 2022 is the lowest since our time series started in 2001, and is statistically significantly lower than all years, except 2014 and 2012 (1,115.7 and 1,134.3 deaths per 100,000 people respectively).

**Figure 6: Year-to-date mortality rates in 2022 were significantly lower than most other years in both England and Wales**

**Age-standardised mortality rates, England and Wales, deaths registered in January to February 2001 to 2022**




**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 the Measuring the data section.

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 . Calculating excess deaths

The majority of this release looks at age-standardised mortality rates (ASMRs). This is because it enables us to make comparisons across areas and time, as ASMRs take into account changes in the population and its age structure.

Another useful measure is the number of excess deaths in a particular year. For excess deaths, we compare numbers and rates with a five-year average; this ensures that we are comparing like for like in terms of life expectancy, advances in healthcare, population size and age structure. Averaging over five years removes the fluctuations seen year-on-year. Usually, we use the most recent five years, for example we compared deaths in 2020 with the five-year average for 2015 to 2019.

2020 saw the second highest number of deaths since 1838 due to the coronavirus (COVID-19) pandemic. If we were to use this within our five-year average, then the number of deaths in the five-year average would be higher and we wouldn't be comparing to a "normal" (non-pandemic) year.

The further we move away from 2019, the less robust the 2015 to 2019 five-year average becomes. The decision was made for 2022 to move to an average of the following five years: 2016, 2017, 2018, 2019 and 2021. This moves our five-year average along by a year but does not include the exceptionally high number of deaths seen in 2020. It allows deaths in 2022 to be compared with a five-year average that is as up-to-date as possible while still being close to representing a "normal" year. Although this does include some COVID-19 deaths, especially at the start of the year when there was a COVID-19 wave.

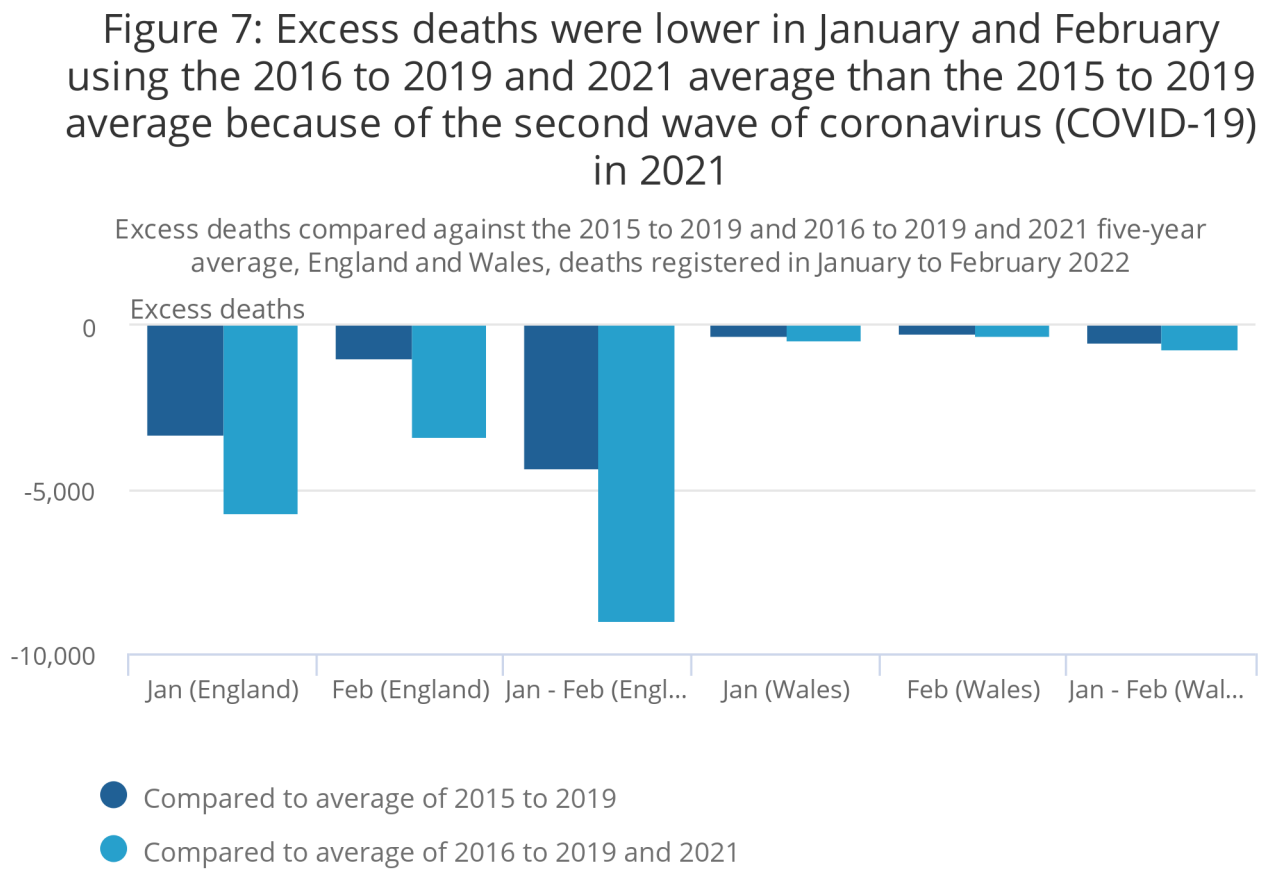
In February 2022, when considering the 2016 to 2019 and 2021 five-year average, excess deaths in England were 3,338 below what we would expect in a "normal" year. When using the 2015 to 2019 average, this decreases to 987 below what we would expect. The year-to-date (January to February) excess in England, when using the 2016 to 2019 and 2021 five-year average, was 8,993 below what we would expect. This decreases to 4,291 deaths below what we would expect when the 2015 to 2019 average is used.

In Wales in February 2022, excess deaths were 267 deaths below what we would expect in a "normal" year, when considering the 2016 to 2019 and 2021 five-year average. This decreases to 209 deaths below what we would expect when the 2015 to 2019 five-year average is used. The year-to-date excess in Wales, when using the 2016 to 2019 and 2021 five-year average, was 669 deaths below what we would expect. When using the 2015 to 2019 average, year-to-date excess deaths in Wales decrease to 473 deaths below what we would expect.

Figure 7 looks at the excess of January, February and year-to-date when using the 2015 to 2019 five-year average and the new 2016 to 2019 and 2021 five-year average.

**Figure 7: Excess deaths were lower in January and February using the 2016 to 2019 and 2021 average than the 2015 to 2019 average because of the second wave of coronavirus (COVID-19) in 2021**

**Excess deaths compared against the 2015 to 2019 and 2016 to 2019 and 2021 five-year average, England and Wales, deaths registered in January to February 2022**




**Source: Office for National Statistics – Monthly mortality analysis**

**Notes:**

1. Figures are for deaths registered rather than deaths occurring in each period.
2. Figures for 2021 and 2022 are based on provisional mortality data.
3. Figures exclude non-residents.
4. The 2016 to 2019 and 2021 five-year average provides an up-to-date comparison (rather than 2015 to 2019) of the number of deaths expected per month in a usual (non-pandemic) year.

# 7 . Death occurrences in February 2022 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 the Measuring the data section.

In England, 36,444 deaths occurred in February 2022 (and were registered by 7 March 2022). This was 8,097 fewer deaths than the five-year average (2016 to 2019, and 2021) for February (18.2% lower). Of all deaths that occurred, 5.2% (1,903 deaths) were due to coronavirus (COVID-19); this was a 50.9% decrease compared with January 2022.

In Wales, 2,497 deaths occurred in February 2022 (and were registered by 7 March 2022), which was 440 fewer deaths than the five-year average (15.0% lower). COVID-19 accounted for 3.9% of all deaths that occurred (98 deaths); this was a 59.7% decrease compared with January 2022.

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 15 March 2020. Figures 8 and 9 show the trends in COVID-19 death occurrences from March 2020 onwards, for England and Wales respectively.

## Figure 8: In England in February 2022, daily deaths due to coronavirus (COVID-19) decreased since January 2022

**Number of deaths occurring on each day from March 2020 to February 2022, five-year average and range, England**

**Notes:**

1. Figures are for deaths occurring on each day rather than deaths registered, registered up to 7 March 2022. Death occurrences will increase as more deaths are registered, particularly for later dates.
2. Figures for 2021 and 2022 (including deaths that occurred in 2020 but were registered in 2021, and deaths that occurred in 2021 but were registered in 2022) are based on provisional mortality data.
3. Figures exclude non-residents.
4. "COVID-19" includes 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 but are not included here.
6. For deaths occurring in 2020 and 2021, the five-year average consists of deaths occurring between 2015 to 2019, whereas for deaths occurring in 2022 the five-year average consists of deaths occurring between 2016 to 2019 and 2021.
7. The five-year average for 2022 has been provided for 2016 to 2019 and 2021, because of the impact of the COVID-19 pandemic on deaths occurring in 2020. This provides an up-to-date comparison (rather than 2015 to 2019) of the number of deaths expected per day in a usual (non-pandemic) year.

**Download the data**

.xlsx

## Figure 9: In Wales in February 2022, daily deaths due to coronavirus (COVID-19) decreased since January 2022

**Number of deaths occurring on each day from March 2020 and February 2022, five-year average and range, Wales**

**Notes:**

1. Figures are for deaths occurring on each day rather than deaths registered, registered up to 7 March 2022. Death occurrences will increase as more deaths are registered, particularly for later dates.

2. Figures for 2021 and 2022 (including deaths that occurred in 2020 but were registered in 2021, and deaths that occurred in 2021 but were registered in 2022) are based on provisional mortality data.

3. Figures exclude non-residents.

4. "COVID-19" includes only deaths where COVID-19 was the underlying cause.

5. For deaths occurring in 2020 and 2021 the five-year average consists of deaths occurring between 2015 to 2019, whereas for deaths occurring in 2022 the five-year average consists of deaths occurring between 2016 to 2019 and 2021.

6. The five-year average for 2022 has been provided for 2016 to 2019 and 2021, because of the impact of the COVID-19 pandemic on deaths occurring in 2020. This provides an up-to-date comparison (rather than 2015 to 2019) of the number of deaths expected per day in a usual (non-pandemic) year.

**Download the data**

.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 February 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.

# 8 . Pre-existing conditions of people whose death was due to COVID-19, deaths registered in October to December 2021

Data on pre-existing conditions of people who died due to coronavirus (COVID-19) in England and Wales for 2020 and 2021 can be found in the accompanying dataset. Quarter 4 (Oct to Dec) 2021 analysis is available in the December 2021 edition of this bulletin. Analysis of Quarter 1 (Jan to Mar) 2022 will be published next month.

# 9 . Monthly mortality data

Monthly mortality analysis, England and Wales
Dataset | Released 24 March 2022
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 24 March 2022
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 24 March 2022
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 24 March 2022
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.

Single year of age and average age of death of people whose death was due to or involved COVID-19
Dataset | Released on 24 March 2022
Provisional deaths registration data for single year of age and average age of death (median and mean) of persons whose death involved coronavirus (COVID-19), England and Wales. Includes deaths due to COVID-19 and breakdowns by sex.

Pre-existing conditions of people who died due to COVID-19, England and Wales
Dataset | Released 21 January 2022
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.

# 10 . 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 the Measuring the data section.

## 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).

## 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.

# 11 . 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 February 2022 by age and sex, and also includes deaths that occurred in February 2022 by date of death. Non-residents of England and Wales are excluded. In February 2022, there were 58 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 147,401 deaths due to COVID-19, 4,151 (2.8%) were classified as "suspected" COVID-19. Including all 168,580 deaths involving COVID-19, "suspected" COVID-19 was recorded on 4,780 deaths (2.8%) of all deaths involving COVID-19 in England and Wales (excluding non-residents). For more information on the ICD-10 definition of COVID-19, see 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. The methodology article provides more detail on how this is calculated.

## Acknowledgement

We would like to thank Paul Brown, Craig Arnold, Andreas Christofi and Jonathan Parker for their valued contribution to this bulletin.

# 12 . 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 and 2022 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.

# 13 . Related links

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

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
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.