Office for National Statistics

Statistical bulletin

Deaths registered in England and Wales: 2019

Registered deaths by age, sex, selected underlying causes of death and the leading causes of death. Contains death rates and death registrations by area of residence and single year of age.

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1 . Main points

- In 2019, there were 530,841 deaths registered in England and Wales, a decrease of 2.0% compared with 2018 (541,589 deaths).
- Taking into account the population size and age structure, age-standardised mortality rates (ASMRs) in England and Wales decreased significantly, by 3.7% for males and 4.7% for females.
- The difference between the number of deaths in males and females has been reducing, and in 2019 it decreased to an all time low of 241 deaths (265,300 male deaths and 265,541 female deaths).
- The North East was the region of England with the highest mortality rates and London was the region with the lowest, for both males and females.
- Deaths due to Dementia and Alzheimer disease decreased for the first time since 2009, but it remained the leading cause of death, accounting for 12.5% of all deaths registered in 2019.
- Similar to previous years, Ischaemic heart disease was the leading cause of death for males (13.1% of all male deaths), while in females the leading cause of death was Dementia and Alzheimer disease (16.1% of all female deaths).

This publication provides data on mortality rates and causes of death in 2019, which may be used to compare with provisional data for 2020, including data on deaths during the coronavirus (COVID-19) pandemic, as these become available.

2 . Age-standardised mortality rates by sex

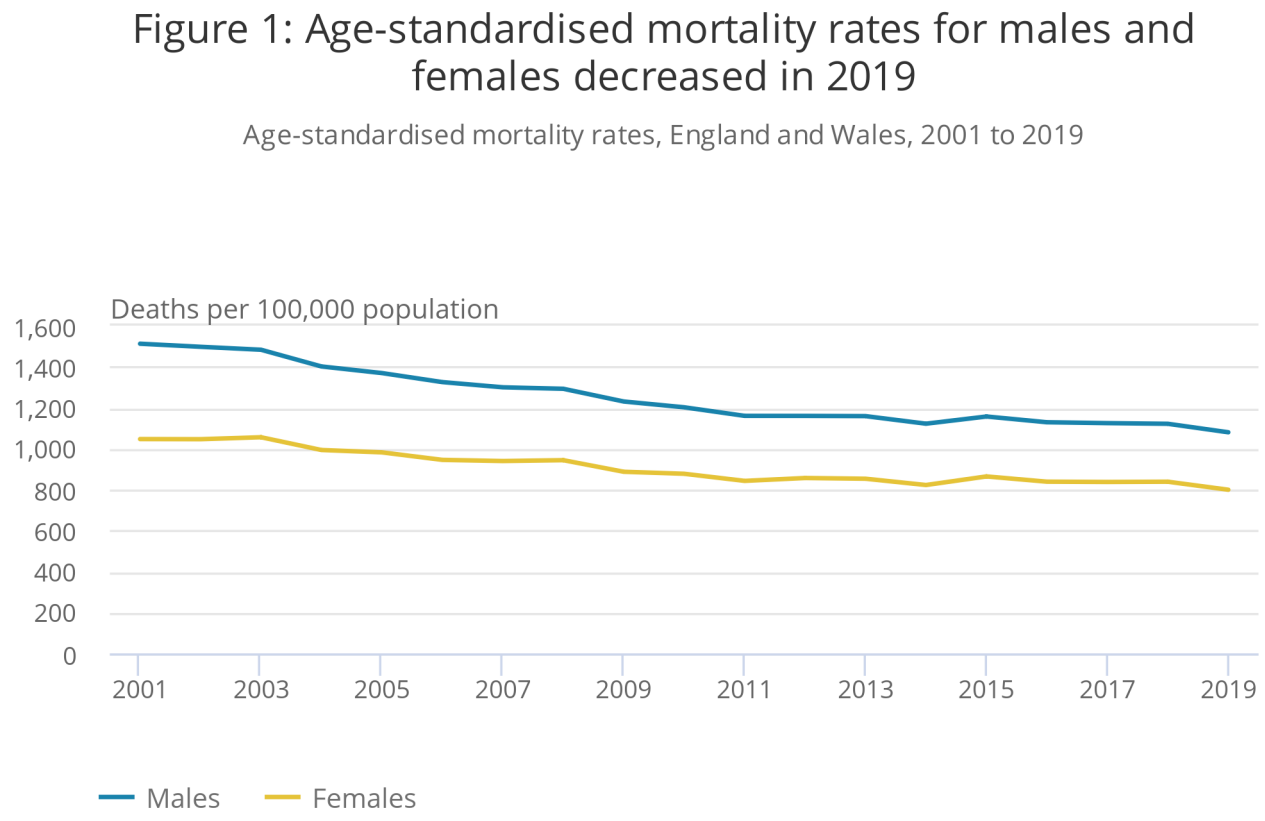
Age-standardised mortality rates (ASMRs) are a better measure of mortality than the number of deaths, as they account for the population size and age structure.

Since 2001, mortality rates have generally been decreasing. However, following the early 2010s, we have seen a significant slowdown in mortality improvements, with ASMRs in recent years declining at a slower rate than before 2010 (Figure 1).

Despite this slowdown, mortality rates for both males and females significantly decreased in 2019. There were 1,079.4 deaths per 100,000 males (3.7% lower than in 2018) and 798.9 deaths per 100,000 females (4.7% lower than in 2018).

Figure 1: Age-standardised mortality rates for males and females decreased in 2019

Age-standardised mortality rates, England and Wales, 2001 to 2019



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

Notes:

1. Based on deaths registered in each calendar year.

2. These rates are for all ages and are standardised to the 2013 European Standard Population.

Looking for information on the coronavirus?

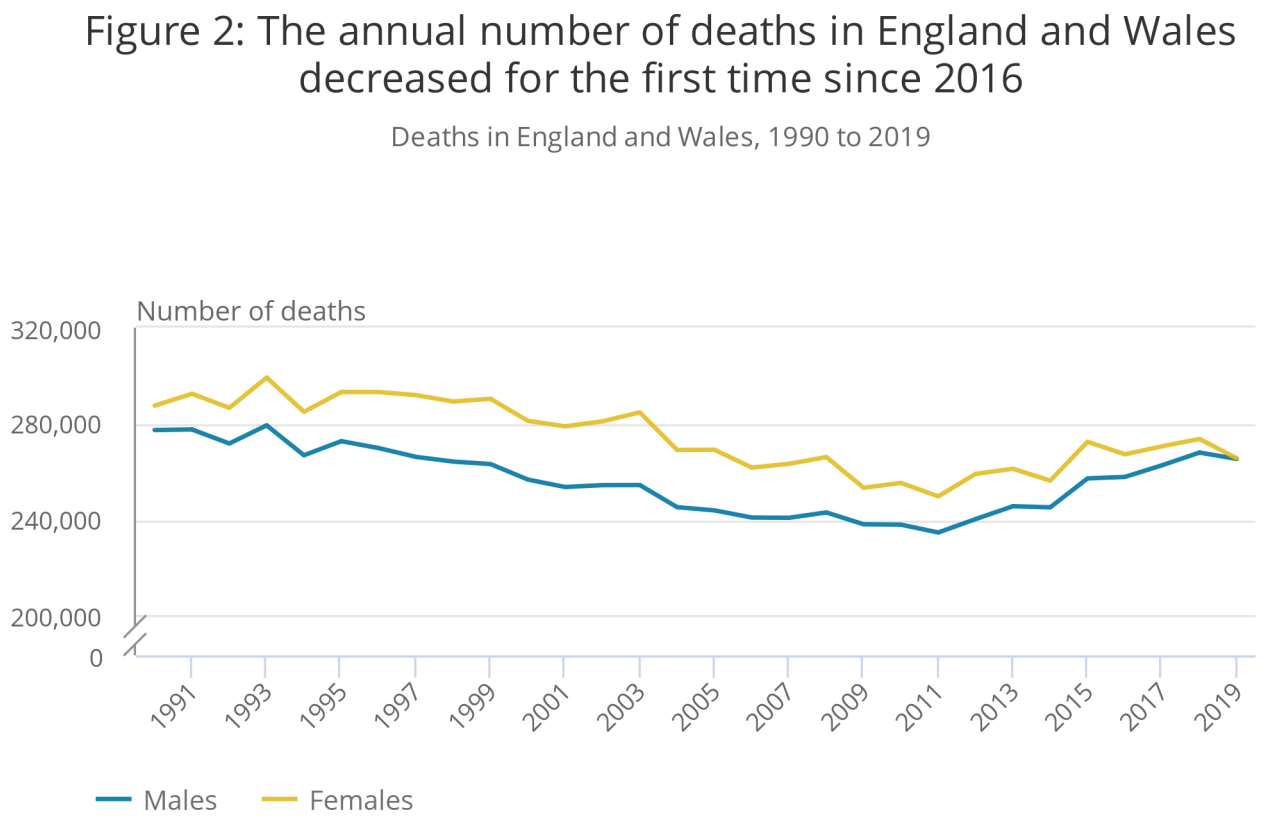
- Our weekly deaths dataset has the most up-to-date figures on deaths involving the coronavirus (COVID-19).
- More detailed commentary on deaths involving COVID-19 is available in the weekly deaths bulletin.
- Get the latest statistics on COVID-19 deaths in each of the UK's constituent countries.
- Find the latest on coronavirus in the UK.

3 . Number of deaths by sex

In 2019, there were 530,841 deaths registered in England and Wales, a decrease of 2.0% compared with 2018 (541,589 deaths).

Figure 2: The annual number of deaths in England and Wales decreased for the first time since 2016

Deaths in England and Wales, 1990 to 2019



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

Notes:

1. Based on deaths registered in each calendar year.

2. Updates to the coding framework used to code cause of death took place in 2011 and 2014. More information on these updates is available in Measuring the data.

Over the past 30 years, there have been peaks and troughs in the numbers of deaths registered. From 1999 to the late 2000s, there was a general decline in the number of deaths. After this period, the number of deaths for both males and females started to increase again, and 2018 saw the highest annual deaths since 1999.

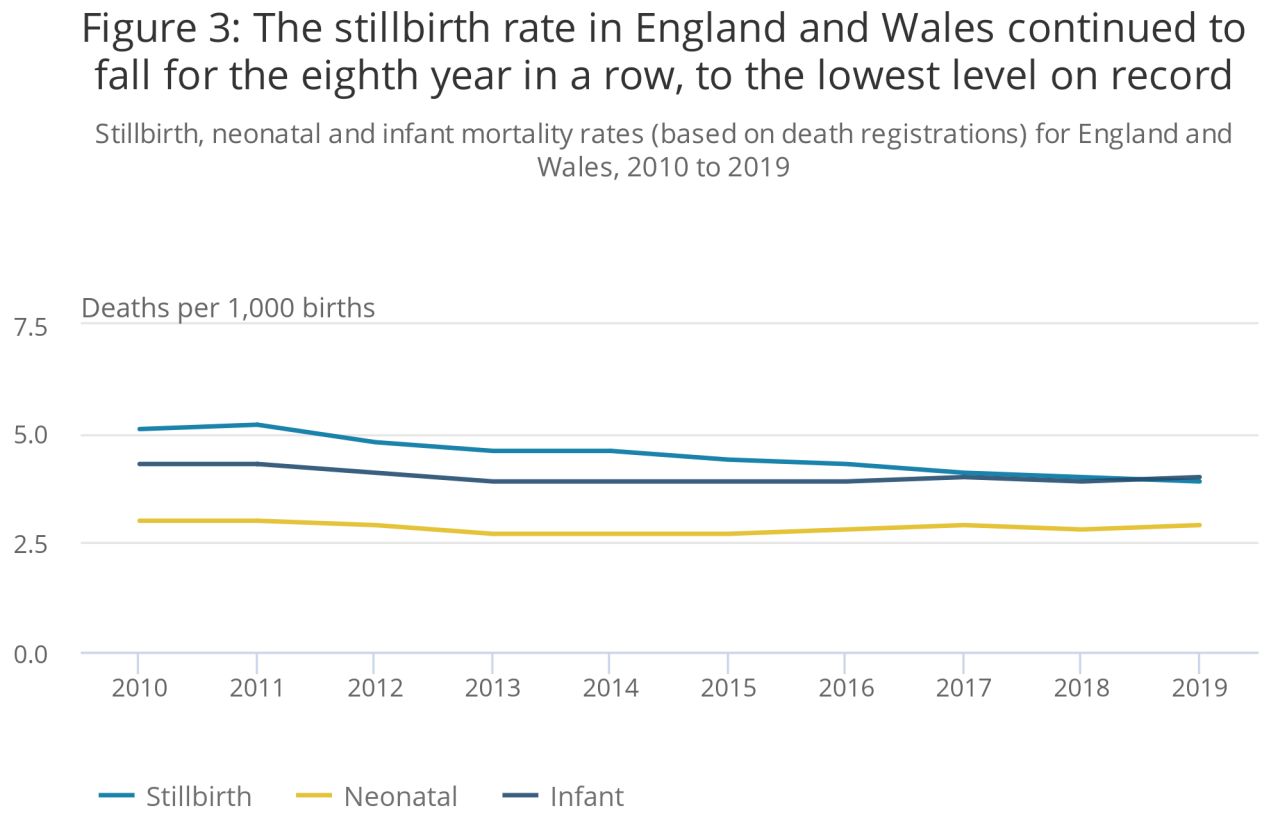
The 2019 registration year saw a decrease in deaths registered for the first time since 2016. This was driven by a decrease in the number of female deaths (3.0% lower than in 2018) and number of male deaths (1.0% lower than in 2018) (Figure 2).

Figure 2 shows how the difference in the number of deaths between males and females has decreased in recent years. The largest difference was in 2003, when the number of male deaths was 254,433 and the number of female deaths was 284,718 (a difference of 30,285 deaths). This gap has been closing, and in 2019 the difference reached a new low of 241 deaths (265,300 male deaths and 265,541 female deaths). This may be partly explained by male life expectancy improving at a slightly faster rate than female life expectancy since early 1980.

4 . Stillbirth rates and neonatal and infant mortality rates

Figure 3: The stillbirth rate in England and Wales continued to fall for the eighth year in a row, to the lowest level on record

Stillbirth, neonatal and infant mortality rates (based on death registrations) for England and Wales, 2010 to 2019



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

Notes:

1. Stillbirths per 1,000 based on total births in each calendar year.
2. Neonatal and infant deaths per 1,000 based on live births in each calendar year.
3. Based on deaths registered in each calendar year.

In 2019, the stillbirth rate in England and Wales reached a new low of 3.9 stillbirths per 1,000 births (Figure 3), from a rate of 4.0 in 2018. The stillbirth rate has reduced every year since 2011 (5.2 stillbirths per 1,000 births), and in 2019 it dropped below the infant mortality rate for the first time. The infant (under one year of age) mortality rate was 4.0 deaths per 1,000 live births in 2019; this has remained relatively unchanged since 2013.

The neonatal (under four weeks old) mortality rate for England and Wales in 2019 was 2.9 deaths per 1,000 live births. This is an increase compared with the rate of 2.8 in 2018, and it remains higher than the all time low of 2.7 seen in 2013 to 2015.

Data on stillbirths and infant mortality by local authorities in England and Wales, as well as data for each country separately, are available in the accompanying dataset. The figures for England are relevant to those interested in the government ambition to halve stillbirth and neonatal mortality rates in England between 2010 and 2025 . Achieving this ambition would mean reducing the stillbirth rate to 2.6 stillbirths per 1,000 births and the neonatal mortality rate to 1.5 deaths per 1,000 live births, by 2025. The Office for National Statistics (ONS) has published a blog that further explores progress against the ambition using occurrence-based data and the extent to which recent increases in live births before 24 weeks has affected the neonatal mortality rate.

The trend in neonatal mortality since 2010 should be considered in the context of the increasing number of extremely pre-term births (below 24 weeks' gestation) being recorded as live births in recent years. For example, there were 712 recorded in England and Wales in 2014, but this had risen to 861 by 2018.

Unfortunately, many of these babies do not survive, thereby impacting the neonatal (and infant) mortality rates. The reason for the increase needs further investigation, but there are several potential reasons including changes in obstetric and neonatal practice.

Progress against the ambition for England is tracked by the Department of Health and Social Care (DHSC), using our figures. The registration-based figures presented here are the first we have produced for 2019. Some of these deaths will have actually occurred in 2018 and possibly even earlier but were not registered until 2019. More information on differences between when a death is registered and when it occurred is available in a blog.

Figures based on when deaths occurred give a more accurate picture of what happened in any given year. We produce a detailed annual report on child mortality using occurrence-based figures, and the latest report covers deaths that occurred in 2018.

Registration and occurrence-based figures for any given year will be very similar, and we are able to publish figures based on year of registration sooner. However, we recommend using the occurrence-based figures for assessing annual child mortality rates where possible.

5 . Age-standardised mortality rates by area

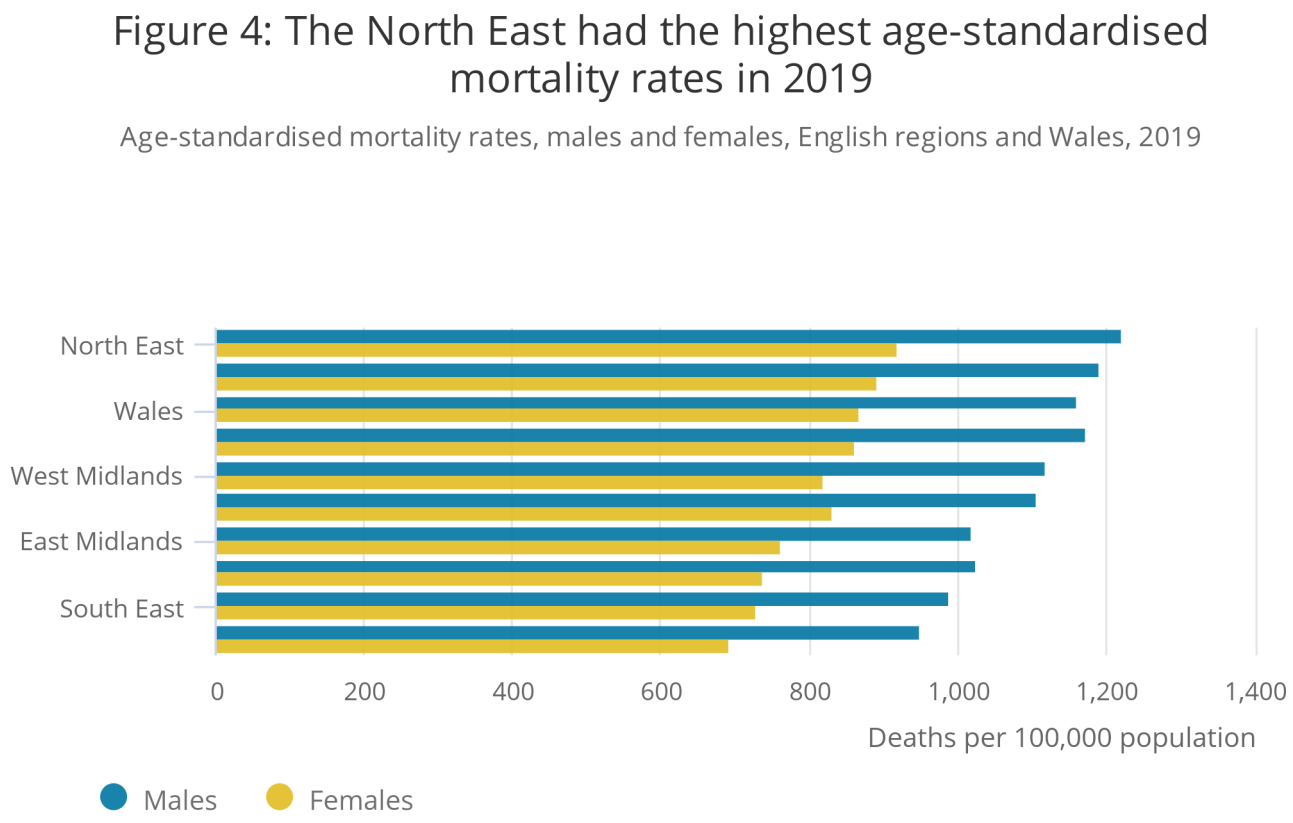
In 2019, there were 496,370 total deaths in England and 33,183 total deaths in Wales. In England, the age-standardised mortality rate (ASMR) per 100,000 was higher for males (1,071.2 deaths per 100,000 males) than for females (792.8 deaths per 100,000 females). In Wales, the rates per 100,000 were higher compared with England for both males (1,162.6) and females (868.1). ASMRs for males and females in both countries decreased compared with 2018.

In England, the region with the highest male ASMR in 2019 was the North East, which had a mortality rate of 1,220.9 deaths per 100,000 males. This is compared with London, which had the lowest male rate of 949.9 per 100,000 males. Similarly, the highest ASMR for females was in the North East (919.8), and the lowest female rate was in London (692.8).

The North East and London also had the highest and lowest mortality rates in 2018. The difference between the regions with the highest and lowest mortality rates has increased in recent years. In 2019, there was a difference of 244.6 deaths per 100,000 population between the region with the highest (North East) and lowest (London) mortality rate. This has increased from 238.0 in 2018 and 233.5 in 2017, showing a greater range of death rates across England.

Figure 4: The North East had the highest age-standardised mortality rates in 2019

Age-standardised mortality rates, males and females, English regions and Wales, 2019



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

Notes:

1. Based on deaths registered in each calendar year.
2. These rates are for all ages and are standardised to the 2013 European Standard Population.
3. Geographies are based on boundaries correct as of February 2020.

Among English local authorities, Blackpool had the highest mortality rate for males (1,553.0 deaths per 100,000 males), and the City of London had the lowest mortality rate for males (545.8 deaths per 100,000 males). These local authorities also had the highest and lowest male ASMRs in 2018. The highest ASMR for females was in Blackburn with Darwen (1,080.3 deaths per 100,000 females), replacing Stoke-on-Trent in 2018. Whereas, the City of London also had the lowest ASMR for females, with 419.2 deaths per 100,000. It is worth noting that the City of London local authority population is small, so for reference the second lowest ASMR for both males and females was in Westminster (652.8 deaths per 100,000 males and 516.9 deaths per 100,000 females).

In Wales, Merthyr Tydfil had the highest male ASMR, at 1352.2 deaths per 100,000 males, replacing Blaenau Gwent in 2018. The lowest male death rate in Wales remained in Monmouthshire (909.1 deaths per 100,000 males). The lowest female mortality rate was in Ceredigion (716.1 deaths per 100,000 females), while Denbighshire had the highest rate for females (1,069.7 deaths per 100,000 females). These areas are both changes from 2018.

6 . Leading causes of death

The Office for National Statistics's (ONS's) leading causes of death groupings are based on a list developed by the World Health Organization (WHO). This categorises causes of death using the International Classification of Diseases, tenth edition (ICD-10) into groups that are epidemiologically more meaningful than single ICD-10 codes, for the purpose of comparing the most common causes of death in the population. Causes such as cancer and circulatory diseases are split into different subtypes, with the aim to provide policymakers with enough detail to generate appropriate health policies and interventions.

The leading causes of death accounted for 44.9% of all deaths registered in England and Wales in 2019. Dementia and Alzheimer disease remained the leading cause of death in 2019, but the number of deaths from this cause decreased (69,478 deaths due to Dementia and Alzheimer disease registered in 2018, compared with 66,424 deaths in 2019). This is the first decrease in deaths due to Dementia and Alzheimer disease seen since 2009. The proportion of all deaths that had an underlying cause of Dementia and Alzheimer disease also significantly decreased between 2018 and 2019 (from 12.8% to 12.5% of all deaths).

There are several important reasons why the number of deaths from Dementia and Alzheimer disease has increased in recent years, including:

- Dementia and Alzheimer disease are more likely to occur at older ages; more people living longer and surviving other illnesses will result in more deaths related to ageing
- a better understanding of dementia, and improved diagnosis, is also likely to have caused increased reporting of dementia on death certificates; this may be a consequence of initiatives put in place in 2013 to 2014, such as the Prime Minister's challenge on dementia and the government's mandate to NHS England, which included an ambition that two-thirds of the estimated number of people with dementia in England should have a diagnosis
- updates to the coding framework used to code cause of death took place in 2011 and 2014; these updates increased the number of deaths with an underlying cause of dementia (more information on these updates is available in Measuring the data)

The decrease in Dementia and Alzheimer disease deaths in 2019 was driven by a decline in the number of female deaths. Dementia and Alzheimer disease is most common in females, especially at older ages.

In 2018, 16.7% of all female deaths were due to Dementia and Alzheimer disease, compared with 16.1% in 2019. In terms of the numbers of deaths, there were 2,936 fewer female deaths caused by Dementia and Alzheimer disease in 2019 than in 2018 (45,726 in 2018 and 42,790 in 2019), a decrease of 6.4%.

In particular, the number of Dementia and Alzheimer disease deaths in females aged 80 years and over dropped by 2,718 between 2018 and 2019 (a 6.6% decrease). But, it is important to note that we would expect to see the largest change in this age group, as deaths from this cause are most common in women aged 80 years and over (59.1% of all Dementia and Alzheimer disease deaths were in females aged 80 years and over in 2018 and 57.7% in 2019).

Table 1: Ischaemic heart disease and Dementia and Alzheimer disease remained the leading causes of death for males and females in 2019

Leading causes of death by age group and sex, England and Wales, 2019

	Males	**Percentage of male deaths**
All ages	Ischaemic heart diseases	13.1
1 to 4	Congenital malformations, deformations and chromosomal abnormalities	13.3
5 to 19	Suicide and injury or poisoning of undetermined intent	17.1
20 to 34	Suicide and injury or poisoning of undetermined intent	28.2
35 to 49	Suicide and injury or poisoning of undetermined intent	12.8
50 to 64	Ischaemic heart diseases	17.1
65 to 79	Ischaemic heart diseases	14.8
80 years and over	Dementia and Alzheimer disease	15.2
	Females	Percentage of female deaths
All ages	Dementia and Alzheimer disease	16.1
1 to 4	Congenital malformations, deformations and chromosomal abnormalities	22.1
5 to 19	Suicide and injury or poisoning of undetermined intent	13.8
20 to 34	Suicide and injury or poisoning of undetermined intent	17.9
35 to 49	Malignant neoplasm of breast	12.9
50 to 64	Malignant neoplasm of breast	10.1
65 to 79	Malignant neoplasm of trachea, bronchus and lung	10.0
80 years and over	Dementia and Alzheimer disease	22.9

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

Notes

1. Based on deaths registered in the calendar year. Back to table
2. In England and Wales, a conclusion of suicide cannot be returned for children under the age of 10 years. The definition for suicides used here includes deaths from children aged 10 years and over, and it therefore differs from the official suicide definition. Back to table

When looking at leading causes of death by sex, the leading cause of death was Ischaemic heart disease in males (accounting for 13.1% of all male deaths) and Dementia and Alzheimer disease in females (accounting for 16.1% of all female deaths). These findings are in line with the previous two year's figures.

Compared with last year's figures, there were few variations in the leading cause of death by age and sex (Table 1) except in the following two cases: for males aged 35 to 49 years, suicide and injury or poisoning of undetermined intent became the leading cause of death, replacing accidental poisoning, which is now the second leading cause of death for this group; for females aged 50 to 64 years, malignant neoplasm of breast replaced malignant neoplasm of trachea, bronchus and lung as the leading cause of death. This may be because of the long-term decrease in the proportion of the population who smoke.

7 . Deaths registered in England and Wales data

Deaths registered in England and Wales
Dataset | Released 1 July 2020
Annual data on deaths registered by age, sex and selected underlying cause of death. Tables also provide both mortality rates and numbers of deaths over time.

Special extracts and tabulations of mortality data for England and Wales are available to order (subject to legal frameworks, disclosure control, resources and the Office for National Statistics (ONS) charging policy, where appropriate). Enquiries should be made to the Mortality Analysis team by email to health.data@ons.gov.uk or telephone on +44 (0)1633 456022. User-requested data will be published on our website.

Deaths registered in England and Wales – 21st century mortality
Dataset | Released 1 July 2020
Annual data on the number of deaths registered in England and Wales by age group, sex, year and underlying cause of death, as defined using the International Classification of Diseases, Tenth Revision.

8 . Glossary

Age-standardised mortality rates

Age-standardised mortality rates (ASMRs) are used to allow comparisons between populations that may contain different proportions of people of different ages. The 2013 European Standard Population is used to standardise rates. In this bulletin, we have adjusted the monthly ASMRs to allow for comparisons with annual rates. For more information, see Measuring the data.

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.

9 . Measuring the data

This publication provides information concerning mortality rates and causes of death in 2019, which may be used to compare with provisional data for 2020 as these become available.

When interpreting these mortality statistics, please note that:

- death statistics are compiled from information supplied when deaths are certified and registered as part of civil registration, a legal requirement
- this release provides both summary figures and more detail on both individual causes of death and selected leading causes of death, where individual causes are aggregated using a list developed by the World Health Organization (WHO), modified for use in England and Wales
- summary figures published in the release include analysis of causes of death by broad disease groupings (a list of these is available in Section 10 of the User guide to mortality statistics)

Mortality statistics are used for producing population estimates and projections and to quality assure the census estimates. They are also used to carry out further analysis on, for example, life expectancy, health expectancy, causes of death and infant mortality. They also enable the analysis of social and demographic trends.

Methodology guides

More quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in the Mortality statistics in England and Wales QMI.

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

The Revisions policy for population statistics (including mortality statistics) is also available.

Registration delays

Death figures reported here are based on deaths registered in the data year. This includes some deaths that occurred in the years prior to 2019 (28,811 out of 530,841 deaths). The Office for National Statistics (ONS) also takes an annual extract of death occurrences in the autumn following the data year to allow for late registrations. Further information on the impact of registration delays for a range of causes is available.

Infant, neonatal and postneonatal mortality rates

The infant, neonatal and postneonatal mortality rates in this release have been calculated using the number of deaths registered in the data year. These rates can also be calculated using the number of deaths occurring in the data year; such rates are less timely since the occurrence dataset can only be taken some nine months after the end of the data year to ensure it is acceptably complete.

More data on deaths and births in England and Wales are available.

Coding of deaths

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

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

On 1 January 2020, we updated the software used to code causes of death and derive a single underlying cause. This is known as Multicausal and Unicausal Selection Engine (MUSE) (IRIS version 5.5). This will impact data in next year's publication, for deaths registered in 2020. More information is available on the differences caused by the change of software.

10 . Strengths and limitations

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

Figures in this release represent the number of deaths registered in the calendar year: this includes some deaths that occurred in the years prior to this calendar year, while a proportion of deaths occurring in this year will not be registered until subsequent years.

Figures in this release also represent deaths that were registered in England and Wales: these include some deaths of individuals whose usual residence was outside England and Wales, while any deaths of residents that happened abroad are not included.

11 . Related links

Deaths registered weekly in England and Wales
Bulletin | Released 23 June 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 registered weekly in England and Wales, provisional
Dataset | Released 23 June 2020
Provisional counts of the number of deaths registered in England and Wales, by age, sex and region, in the latest weeks for which data are available. Includes the most up-to-date figures available for deaths involving COVID-19.

Deaths registered monthly in England and Wales
Dataset | Released 26 June 2020
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. These are monthly provisional data covering the month before release and do not include the most up-to-date figures on deaths registered involving COVID-19.

Where to find statistics on UK deaths involving COVID-19 and infection rates by country
Article | Released 19 May 2020
Links to statistics on COVID-19 deaths and infection rates published by the different constituent countries of the UK.

The top 10 causes of death
Web page
The World Health Organization (WHO) provides data on the leading causes of death in the world.

Explorable datasets
Web page | Updated as and when data become available
This provides more detailed mortality statistics, including cause of death, area of usual residence, sex and age group. This explorable dataset has been specially designed to protect the confidentiality of individuals, where suppression is applied to low counts for areas below region level. Data are available for 2013 to 2018 and are based on the year the death was registered. Data for 2019 registrations will be added within the next month. This dataset can also be used to extract mortality rates.

Vital statistics in the UK: births, deaths and marriages
Dataset | Released 22 November 2019
Annual UK and constituent country figures for births, deaths, marriages, divorces, civil partnerships and civil partnership dissolutions. An international comparison of numbers of deaths and death rates is also available.

Births in England and Wales: 2018
Bulletin | Released 1 August 2019
Live births, stillbirths and the intensity of childbearing, measured by the total fertility rate.