Office for National Statistics

Statistical bulletin

Deaths registered in England and Wales: 2018

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.

Contact: Sophie John mortality@ons.gov.uk +44 (0)1633 456935	Release date: 6 August 2019	Next release: To be announced

Notice

27 May 2020

Our most up-to-date figures on deaths involving the coronavirus (COVID-19) registered in England and Wales are available in the weekly deaths bulletin and accompanying dataset.

Get the latest statistics on COVID-19 deaths in each of the UK's constituent countries.

Table of contents

1 . Main points

- When accounting for population size and age-structure, age-standardised mortality rates (ASMRs) for females increased by 0.1%, however, for males ASMRs continued to decrease by 0.3%.

- In 2018, there were 541,589 deaths registered in England and Wales, an increase of 1.6% compared with 2017 (533,253); this is the highest annual number of deaths since 1999.

- The North East was the region of England with the highest ASMRs and London was the lowest for both males and females.

- Deaths due to dementia and Alzheimer disease continued to increase and remained the leading cause of death, accounting for 12.8% of all deaths registered.

2 . Statisticians comment

"Although 2018 saw the highest number of deaths since 1999, when taking the age and size of the population into account, death rates have remained more or less stable since 2011.

Mortality rates fell slightly for males but rose slightly for females in 2018. This is likely to close the gap in life expectancy between the two.

We're continuing to see the levelling off of mortality improvements and will understand more as we analyse this data further."

Ben Humberstone, Head of Health Analysis and Life Events

3 . Things you need to know about this release

This release merges the Deaths registered in England and Wales (series DR) and the Deaths registered in England and Wales (summary tables) releases, which were previously published separately. By combining these publications, we can make the cause of death, leading cause of death and explorable dataset available to users at an earlier date. Furthermore, any duplication across tables is reduced.

Important information for interpreting these mortality statistics:

- death statistics are compiled from information supplied when deaths are certified and registered as part of civil registration, a legal requirement

- figures 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 (more information is available in the Quality and methodology section)

- figures 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

- 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, which can be found in Section 10 of the User guide to mortality statistics

4 . Age-standardised mortality rates for females increased in 2018

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.

Mortality rates have generally been decreasing, except for 2015. However, since the early 2010s we have observed a significant slowdown in mortality improvements, with ASMRs in recent years declining at a slower rate than before 2010.
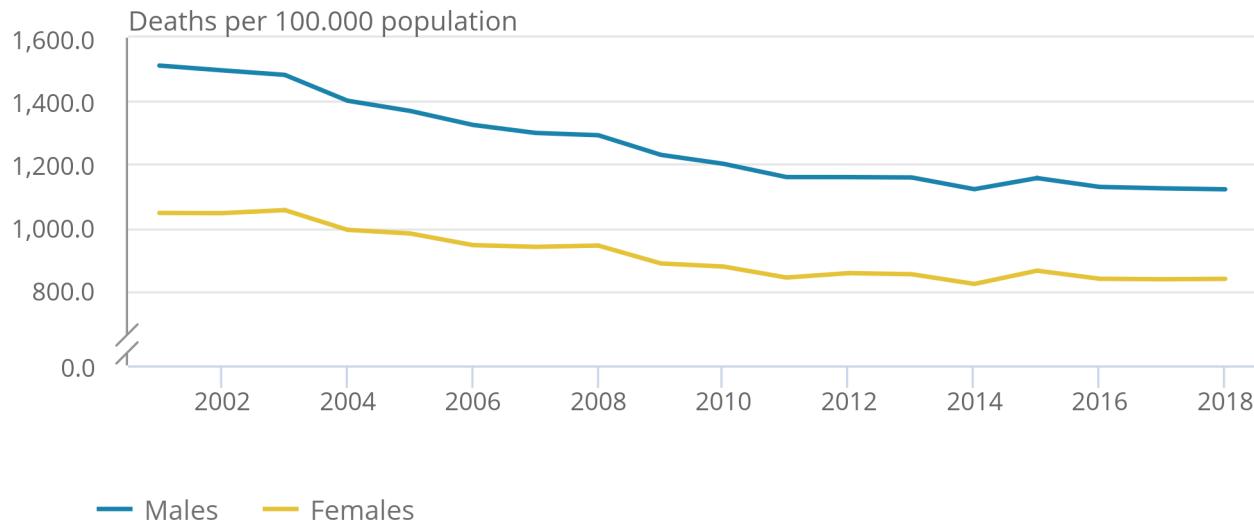
Despite this slowdown and the higher number of deaths recorded in 2018, ASMRs for males continued to decline. There were 1,120.9 deaths per 100,000 population for males, 0.3% lower than in 2017. There were 838.0 deaths per 100,000 population for females, a 0.1% increase compared with 2017. Since 2001, ASMRs for males increased only once in 2015 whereas ASMRs for females have increased for the fifth time during this time period.

Figure 1: Age-standardised mortality rates for females increased in 2018

Age-standardised mortality rates, England and Wales, 2001 to 2018

Source: Office for National Statistics – Mortality statistics

Notes:

1. Based on deaths registered in each calendar year.

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

5 . Highest number of deaths registered in England and Wales since 1999
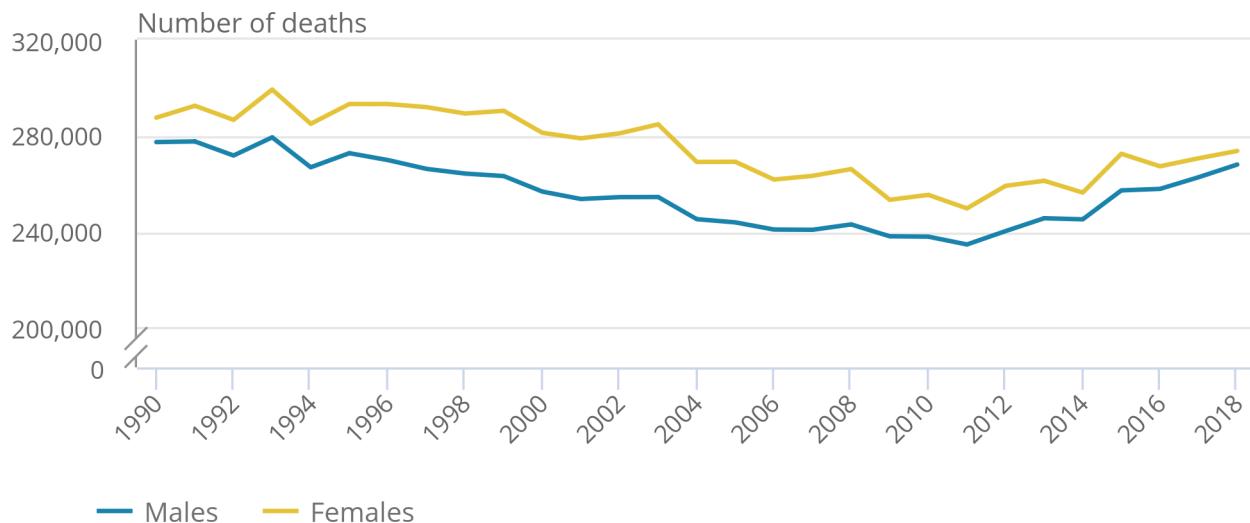
In 2018, there were 541,589 deaths registered in England and Wales, an increase of 1.6% compared with 2017 (533,253). This is the highest annual number of deaths since 1999 (553,532).

Deaths in England and Wales, 1990 to 2018

Figure 2: Deaths registered in England and Wales increased by 1.6% in 2018

Deaths in England and Wales, 1990 to 2018

Source: Office for National Statistics – Mortality statistics

Notes:

1. Based on deaths registered in each calendar year.

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

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.

While there have been peaks and troughs in the numbers of deaths registered, there was a general decline from 1999 to the late 2000s. After this period, the number of deaths for both males and females started to increase again. In 2018, the increase in registered deaths was driven by the sharper increase of 2.0% in male deaths since 2017 compared with a 1.1% increase in the number of deaths registered to females (Figure 2).

What is also evident in Figure 2 is how the difference in the number of deaths between males and females has decreased in recent years. In 1999, the number of deaths registered to males was 263,166 and females was 290,366, a difference of 27,200 deaths. Whereas in 2018, the difference between the number of deaths registered to males and females was fewer at 5,669 deaths registered (males 267,960, females 273,629). This is because generally [male life expectancy has been improving at a slightly faster rate than female life expectancy](#) since early 1980.
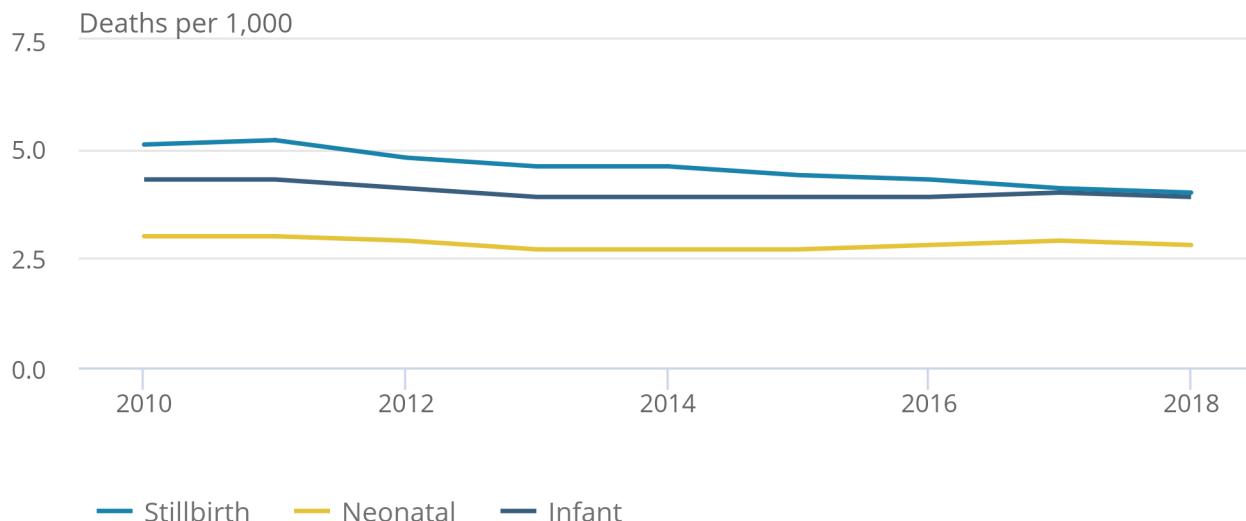
6 . Stillbirth rate in England hits lowest level on record

Figure 3: Stillbirths, neonatal and infant deaths all decreased in England in 2018

Stillbirth, neonatal and infant mortality rates (based on death registrations) for England, 2010 to 2018

Figure 3: Stillbirths, neonatal and infant deaths all decreased in England in 2018

Stillbirth, neonatal and infant mortality rates (based on death registrations) for England, 2010 to 2018

Source: Office for National Statistics – Mortality statistics

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.

In 2018, the stillbirth rate in England hit an all-time low of 4.0 per 1,000 births. This is down from a rate of 4.1 in 2017 and 5.1 in 2010 (Figure 3).

The neonatal mortality rate in England in 2018 was 2.8 deaths per 1,000 live births. This is lower than the rate of 2.9 in 2017, but higher than the all-time low of 2.7 seen in 2013, 2014 and 2015. The rate in 2010 was 3.0 deaths per 1,000 live births.

For comparison, the stillbirth rate in Wales in 2018 was 4.4 per 1,000 births and the neonatal mortality rate was 2.5 neonatal deaths per 1,000 live births.

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 trend in neonatal mortality since 2010 should be considered in the context of the increasing number of extremely pre-term births (below 23 weeks gestation) being recorded as live births in recent years. For example, there were 376 recorded in England and Wales in 2014, but this had risen to 564 by 2017.

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 2018. Some of these deaths will have actually occurred in 2017 and possibly even earlier, but were not registered until 2018. We recently blogged about the differences between when a death is registered and when it occurred.

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 covers deaths that occurred in 2017.

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; our occurrence-based 2018 child mortality report will be published in early 2020.

7 . London had the lowest mortality rates in England in 2018

In 2018, there were 505,859 total deaths in England and 34,406 in Wales.

In England, the age-standardised mortality rate (ASMR) per 100,000 was higher for males (1,111.0) than for females (831.4).

In Wales, the rates per 100,000 were higher compared with England for both males (1,231.0) and females (915.9).

In Scotland, ASMR rates, published earlier this year, were higher again for both males (1,318.4) and females (997.4).

In England, the region with the highest male ASMR was the North East, which had a rate of 1,261.9 per 100,000 compared with London, which had the lowest rate of 1,002.7 per 100,000. Similarly, the highest ASMR for females was in the North East (955.5) and the lowest female rate was in London (733.2). These regions also had the highest and lowest ASMRs last year.

The range in rates per 100,000 between the highest and lowest regions has shown an increase for males, from 241.6 in 2017 to 259.2 in 2018, but has decreased for females, from 228.5 to 222.3 in the same period.

Figure 4: Local mortality rates for males and females, in England and Wales, 2018

Notes:

1. Figures are based on boundaries as of May 2019.

Download the data

Among English local authorities, Blackpool had the highest rate per 100,000 of male deaths in 2018 (1,553.1), and the City of London had the lowest rate of male deaths (493.5). The lowest ASMR for females was also in the City of London at 346.5 per 100,000, compared with Stoke-on-Trent, which had the highest rate of female deaths at 1,174.3 per 100,000.

Both the regional and local authority-level rates suggest that the London area has some of the lowest mortality rates for both males and females per 100,000 in England. London also has the highest increase in life expectancy of all regions in England (PDF, 2.93MB).

In Wales, Blaenau Gwent had the highest male ASMR per 100,000 at 1,470.8 and the lowest male rate was in Monmouth (965.0). The lowest female rate per 100,000 was also in Monmouth (759.3), however, Merthyr Tydfil had the highest rate for females (1,140.0). In 2017, the area with the highest and lowest mortality rates per 100,000 for both males and females were Blaenau Gwent and Ceredigion respectively.

8 . Leading causes of death

The Office for National Statistics (ONS) determines the leading causes of death using a detailed list based on one developed by the World Health Organization (WHO). This list uses more specific groupings than the broad group level, splitting causes such as cancer and circulatory diseases into different subtypes, with the aim to provide policy-makers with enough detail to generate appropriate health policies and interventions.

The top five leading causes of death, using this grouping, accounted for 40.4% of all deaths registered in England and Wales in 2018. Deaths due to dementia and Alzheimer disease continued to increase in 2018 and remained the leading cause of death in England and Wales, accounting for 12.8% of all deaths registered.

There are several important reasons why the number of deaths from dementia and Alzheimer disease has increased in recent years.

Dementia and Alzheimer disease are more likely to occur at older ages and more people living longer and surviving other illnesses.

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 (PDF, 507KB), 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 the Quality and methodology section).

Table 1: Leading cause of death by age group and sex in England and Wales, 2018

	Males	% of male deaths
All ages	Ischaemic heart diseases	13.2
1 to 4	Congenital malformations, deformations and chromosomal abnormalities	12.6
5 to 19	Suicide and injury/poisoning of undetermined intent	16.6
20 to 34	Suicide and injury/poisoning of undetermined intent	25.9
35 to 49	Accidental poisoning	12.5
50 to 64	Ischaemic heart diseases	17.3
65 to 79	Ischaemic heart diseases	14.8
80+	Dementia and Alzheimer disease	15.1
	Females	% of female deaths
All ages	Dementia and Alzheimer disease	16.7
1 to 4	Congenital malformations, deformations and chromosomal abnormalities	15.9
5 to 19	Suicide and injury/poisoning of undetermined intent	12.3
20 to 34	Suicide and injury/poisoning of undetermined intent	15.6
35 to 49	Malignant neoplasm of breast	12.6
50 to 64	Malignant neoplasm of breast	10.1
65 to 79	Malignant neoplasm of trachea, bronchus and lung	10.1
80+	Dementia and Alzheimer disease	23.6

Source: Office for National Statistics

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 and over, and therefore differs from the official suicide defintion.,Updates to the coding framework used to code cause of death took place in 2011 and 2014. More information on these updates is available in the Quality and methodology section. Back to table

In line with last year's figures, the leading cause of death was ischaemic heart disease in males (accounting for 13.2% of all male deaths) and dementia and Alzheimer disease in females (accounting for 16.7% of all female deaths).

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, accidental poisoning became the leading cause of death, replacing suicide and injury/poisoning of undetermined intent, which is now the second-leading cause of death within the 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 due to the long-term decrease in the proportion of the population who smoke

9 . Links to related statistics

More data on deaths and births in England and Wales are available. Commentary on stillbirths is included within Births in England and Wales, 2018.

Our explorable dataset 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. This dataset can also be used to extract mortality rates.

The number of deaths and death rates for the UK and constituent countries can be found in the Vital statistics: population and health reference tables; an international comparison of numbers of deaths and death rates is also available. The World Health Organization (WHO) provides data on the leading causes of death in the world.

To meet user needs, very timely but provisional counts of death registrations are published:

- provisional counts of weekly death registrations by sex, age group and region

- provisional counts of monthly death registrations by local authority

Figures for 2019 have not been subject to the full quality assurance process so are considered provisional. Special extracts and tabulations of mortality data for England and Wales are available to order (subject to legal frameworks, disclosure control, resources and the ONS charging policy, where appropriate). Enquiries should be made to the Mortality Analysis team by email to mortality@ons.gov.uk or telephone on +44 (0)1633 456935. User requested data will be published onto our website.

10 . Quality and methodology

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 to further analyse infant mortality. They also enable the analysis of social and demographic trends.

The Mortality statistics Quality and Methodology Information report contains important information on:

- the strengths and limitations of the data and how it compares with related data

- uses and users of the data

- how the output was created

- the quality of the output including the accuracy of the data

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.

Death figures reported here are based on deaths registered in the data year. This includes some deaths that occurred in the years prior to 2018 (31,760 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.

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 Quality and Methodology Information report.

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

Deaths are cause coded using the World Health Organization's (WHO) International Classification of Diseases (ICD). 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.

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.

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 be now coded to chest infection (J22), but those with a mention of dementia (F01 or F03), would now be coded to dementia (F01 or F03). In addition to this, 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).