

Statistical bulletin

Deaths registered in England and Wales (series DR): 2017

Registered deaths by age, sex, selected underlying causes of death and the leading causes of death for both males and females.



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1 . Main points

- Deaths due to dementia and Alzheimer disease increased again in 2017 and it remained the leading cause of death in England and Wales, accounting for 12.7% of all deaths registered.
- Ischaemic heart diseases remained the second leading cause of death in 2017, accounting for 10.9% of deaths registered, a smaller proportion than the previous year.
- Chronic lower respiratory diseases were the third leading cause of death, overtaking cerebrovascular diseases.
- Ischaemic heart diseases remained the leading cause of death for males in 2017, accounting for 13.7% of male deaths – unchanged from the previous year.
- Dementia and Alzheimer disease remained the leading cause of death for females in 2017, accounting for 16.5% of female deaths, an increase from 15.6% in 2016.
- When adjusting for changes in the population size and age-structure, age-standardised mortality rates for dementia and Alzheimer disease continued to increase in 2017 for both males and females.
- Improvements in the mean age at death have been greater for males than females in recent years.

2 . Statistician’s comment

“Dementia and Alzheimer’s disease remained the leading cause of death in 2017 for the third consecutive year. It was responsible for more than one in eight of all registered deaths, an increase from the previous year. Ischaemic heart diseases, which includes coronary heart disease, remained the second leading cause of death in 2017.

“Chronic lower respiratory diseases, which affect the lungs, are now the third leading cause of death, overtaking cerebrovascular diseases, which held this position in 2016. This follows a long-term decline in deaths from cerebrovascular diseases, such as strokes and brain haemorrhages. Lung cancer has remained the fifth leading cause of death.”

Vasita Patel, Vital Statistics Outputs Branch, Office for National Statistics. Follow [@StatsLiz](https://twitter.com/StatsLiz) on Twitter.

3 . Things you need to know about this release

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 the calendar year (more information is available in the Quality and methodology section)
- figures represent deaths that occurred in England and Wales; these include the deaths of individuals whose usual residence was outside England and Wales
- summary figures and analysis of causes of death by broad disease were published in [Deaths registered in England and Wales, 2017](#) released in July 2018; these groupings can be found in section 10 of the [User Guide to Mortality Statistics](#)
- this release provides more detail on both individual causes of death and [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.

4 . Greater improvements in the mean age at death for males than females in recent years

There were 533,253 deaths registered in England and Wales in 2017, a 1.6% increase from 2016 and the highest annual number of death registrations since 2003. With increases in both the size and age of the population, the number of deaths is expected to increase. When adjusting for these changes in the population, age-standardised mortality rates (ASMRs) decreased slightly for both males (0.4%) and females (0.2%) in 2017.

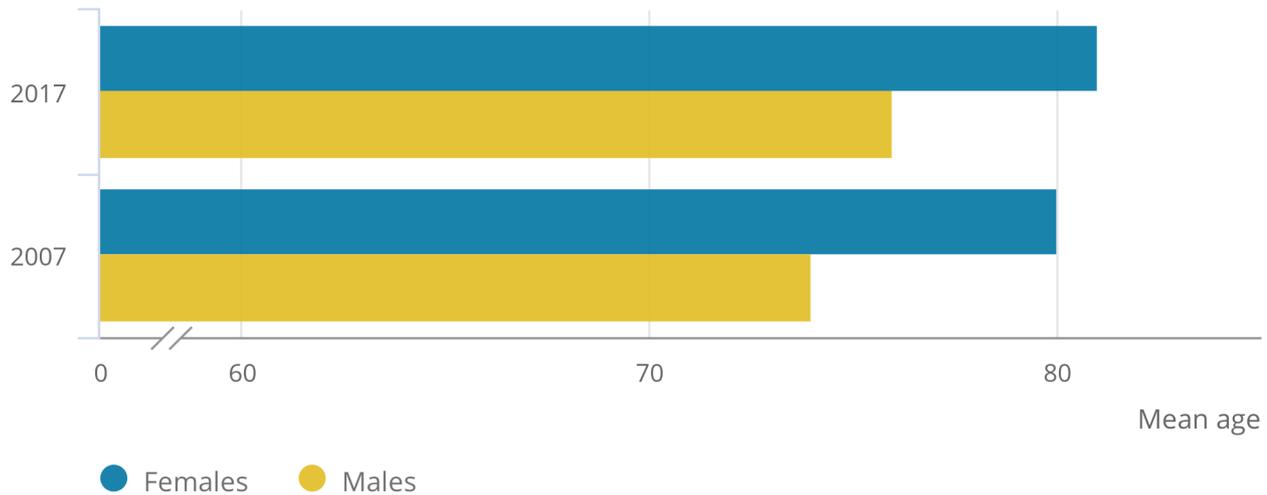
Over the last century there has been a long-term trend in [falling mortality rates and rising life expectancy in England and Wales](#). Typically, females have a greater life expectancy than males, and this is reflected in the mean age at death. Improvements in the mean age at death have been greater for males than females in recent years, increasing by two years for males compared with one year for females over the last decade (Figure 1).

Figure 1: Mean age at death for males and females, 2007 and 2017

England and Wales

Figure 1: Mean age at death for males and females, 2007 and 2017

England and Wales



Source: Office for National Statistics

Notes:

1. Based on deaths registered in each calendar year.

5 . Dementia and Alzheimer disease remained the leading cause of death in 2017

As previously reported in [Deaths registered in England and Wales, 2017](#), at the broad disease group level, cancer remained the most common cause of death in 2017 (28.1% of all deaths registered), followed by circulatory diseases, such as heart diseases and strokes (25.0%).

At a more detailed level, Office for National Statistics (ONS) determines the [leading causes of death](#) using a 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 advocacy and interventions.

The top five leading causes of death, using this grouping, accounted for 41.1% of all deaths registered in England and Wales in 2017.

The number of deaths due to dementia and Alzheimer disease continued to increase in 2017 and it remained the leading cause of death in England and Wales, accounting for 12.7% of all deaths registered (Figure 2). Ischaemic heart diseases remained the second leading cause, but despite a slight increase in the number of deaths to this cause, it accounted for a smaller percentage of total deaths in 2017 (10.9%) than in 2016 (11.0%).

Since 2001, there has been a long-term decline in the number of deaths to cerebrovascular diseases and this trend has continued in 2017. This is likely due to government campaigns increasing public awareness of risk factors and issuing guidance such as the [act F.A.S.T campaign](#).

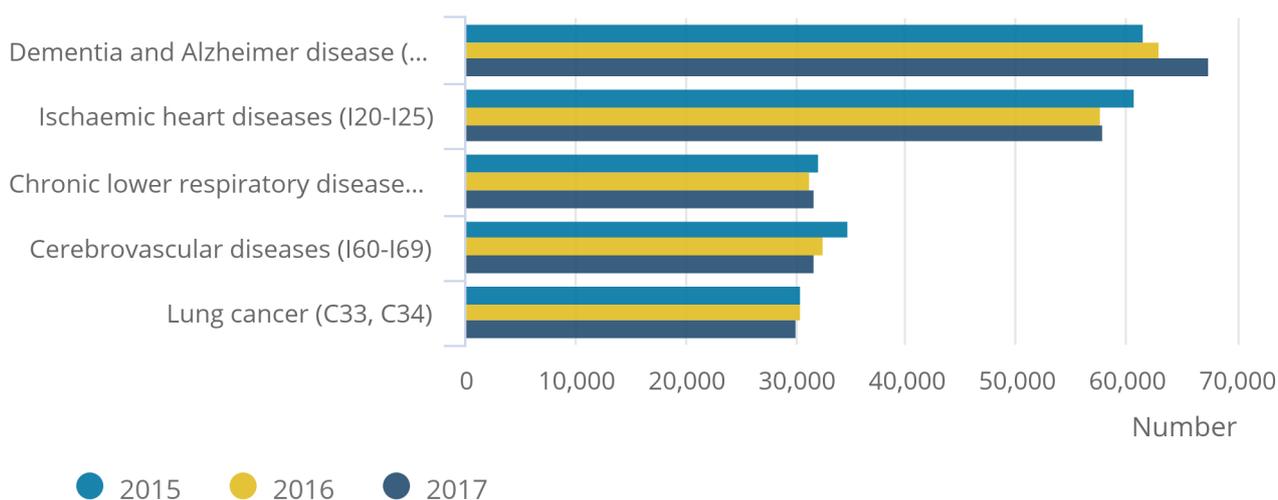
In contrast, deaths due to chronic lower respiratory diseases have been slowly increasing over time, overtaking cerebrovascular diseases as the third leading cause of death in 2017.

Figure 2: Number of deaths from top five leading causes, 2015 to 2017

England and Wales

Figure 2: Number of deaths from top five leading causes, 2015 to 2017

England and Wales



Source: Office for National Statistics

Notes:

1. Based on deaths registered in each calendar year.
2. The cause of death groups used here are based on a [list](#) developed by the World Health Organization, modified for use in England and Wales.

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

Dementia and Alzheimer disease mainly affects people aged over 65 years. With people living longer and surviving other illnesses, the number of people developing dementia and Alzheimer disease is increasing. Male life expectancy has been improving at a slightly faster rate than female life expectancy in recent years and [men are tending to live longer than before](#), which is likely to have contributed to a 9.0% increase in the number of deaths from dementia and Alzheimer disease in men in 2017.

A better understanding of dementia and improved diagnosis is also likely to have caused increased reporting of dementia on death certificates. This is likely to be a consequence of ongoing incentives 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 includes an agreed 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).

6 . Age-standardised mortality rates for dementia and Alzheimer disease increased in 2017

Age-standardised mortality rates (ASMRs) for four of the top five leading causes of death have generally been decreasing since 2001 (Figures 3 and 4). This is perhaps due to improvements in the treatment and diagnosis of these diseases and the introduction of [preventative programmes and awareness campaigns](#) that seek to improve people's health. However, due to the slight increase in deaths to chronic lower respiratory diseases, the ASMR for females dying from this cause remained unchanged in 2017.

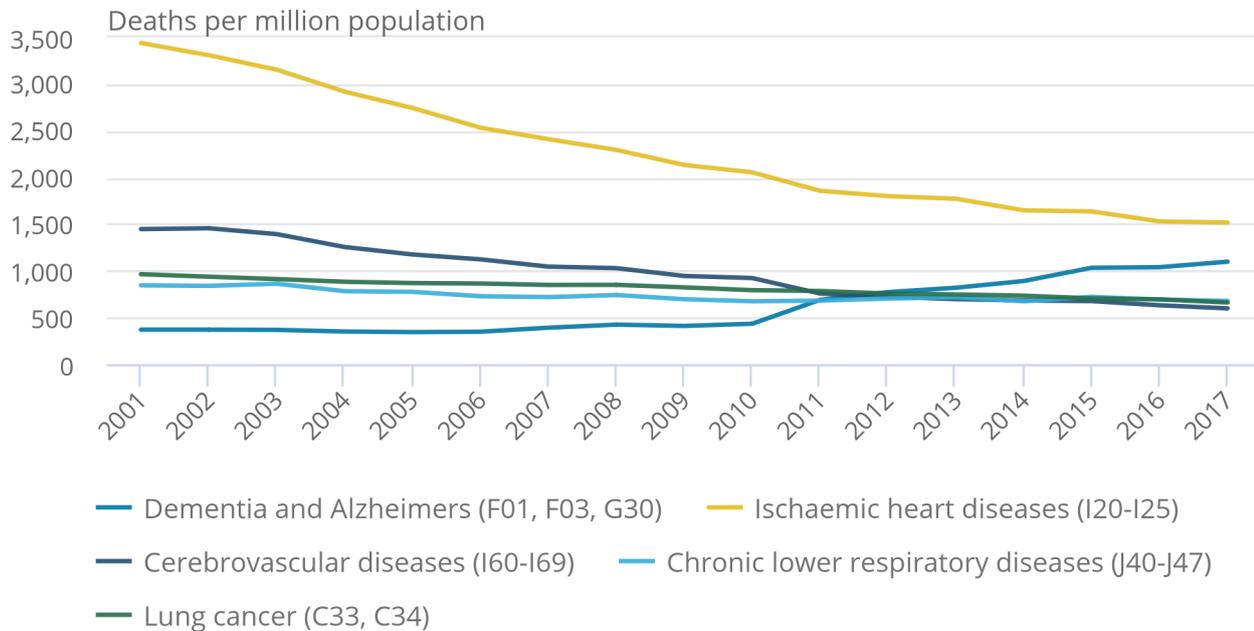
In contrast, the ASMRs for dementia and Alzheimer disease have been increasing in recent years for both males and females (Figures 3 and 4). Despite an apparent slowdown in this trend in 2016, there were further increases in the ASMR for dementia and Alzheimer disease for both males and females in 2017, by 5.7% and 5.5% respectively.

Figure 3: Male age-standardised mortality rates for top five leading causes of death, 2001 to 2017

England and Wales

Figure 3: Male age-standardised mortality rates for top five leading causes of death, 2001 to 2017

England and Wales



Source: Office for National Statistics

Notes:

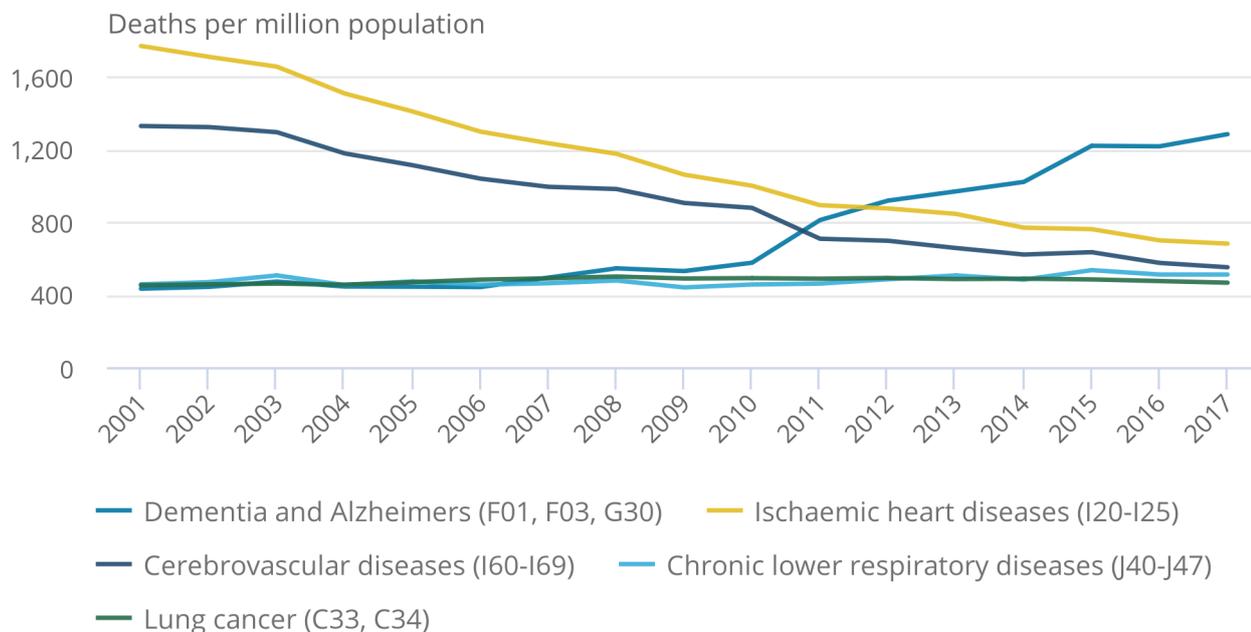
1. Based on deaths registered in each calendar year.
2. The cause of death groups used here are based on a [list](#) developed by the World Health Organization, modified for use in England and Wales.
3. These rates are for all ages and are standardised to the 2013 [European Standard Population](#).

Figure 4: Female age-standardised mortality rates for top five leading causes of death, 2001 to 2017

England and Wales

Figure 4: Female age-standardised mortality rates for top five leading causes of death, 2001 to 2017

England and Wales



Source: Office for National Statistics

Notes:

1. Based on deaths registered in each calendar year.
2. The cause of death groups used here are based on a [list](#) developed by the World Health Organization, modified for use in England and Wales.
3. These rates are for all ages and are standardised to the 2013 [European Standard Population](#).

As such, there have been numerous efforts focused on reducing the risk of developing dementia, such as the [Blackfriars Consensus Statement](#) and national guidance on [mid-life approaches to delay or prevent the onset of dementia](#). [NHS Health Checks](#) also contain a dementia component to raise awareness and help promote a healthy lifestyle. This aims to reduce and monitor risk factors for developing dementia, such as obesity, diabetes, high blood-pressure and raised cholesterol.

7. Suicide accounted for an increased proportion of deaths at ages 5 to 19 years in 2017

The overall leading causes of death are usually long-term diseases or conditions experienced later in life, due to the large proportion of deaths at older ages. Breaking them down by age group gives a more detailed picture, with leading causes of death in younger age groups more likely to be a result of external causes. The leading causes in the youngest age groups tend to fluctuate more due to the small number of deaths at these ages.

In 2017, congenital malformations, deformations and chromosomal abnormalities remained the leading cause of death for boys and girls aged 1 to 4 years. However, this cause accounted for a smaller proportion of deaths at this age in 2017 (11.0%), compared with 2016 (14.9%).

For boys and girls aged 5 to 19 years, suicide and injury or poisoning of undetermined intent remained the leading cause of death in 2017, accounting for an increased proportion of deaths at this age, compared with the previous year. The increase in deaths due to this cause was especially notable for females, accounting for 13.3% of deaths at this age, compared with only 9.6% in 2016. In England and Wales, a conclusion of suicide cannot be returned for children under the age of 10 years.

The proportion of deaths due to land transport accidents for boys and girls aged 5 to 19 years decreased in 2017, remaining the second leading cause of death for boys (10.4%). Meanwhile, for girls, malignant neoplasms of the brain became the second leading cause, accounting for 7.1% of deaths at this age, an increase from 6.4% in 2016.

8 . Suicide accounted for an increased proportion of female deaths aged 20 to 34 and 35 to 49 years, whilst continued decreases were seen for males

For males and females aged 20 to 34 years, suicide and injury or poisoning of undetermined intent remained the leading cause of death in 2017 (Figure 5). Whilst it was accountable for a slightly smaller proportion of male deaths at this age (23.7%) compared with the previous year, the opposite was true for females, increasing from 13.4% in 2016 to 14.9% in 2017.

Accidental poisoning remained the second leading cause of death at ages 20 to 34 years, following the increasing trend seen in recent years (Figure 5).

Figure 5: Top five leading causes of death for 20- to 34-year-olds, 2001 to 2017

England and Wales

[Download the data](#)

Notes:

1. Based on deaths registered in each calendar year.
2. The cause of death groups used here are based on a [list](#) developed by the World Health Organization, modified for use in England and Wales.
3. This figure includes the top five leading causes of death for males and females at this age group in 2017. These may not have been the top five causes in previous years.
4. 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.

Suicide also remained the leading cause of death for males aged 35 to 49 years, accounting for a slightly smaller proportion of male deaths (11.1%) than the previous year (11.3%) (Figure 6). Ischaemic heart diseases and accidental poisoning closely followed as the second and third leading causes for males at this age, responsible for 10.9% and 10.7% respectively.

For females aged 35 to 49 years, breast cancer continued to dominate as the leading cause of death in 2017, responsible for 13.2% of deaths, a slight decrease from 2016 (Figure 6). Cirrhosis and other diseases of the liver remained the second leading cause responsible for an increased proportion (9.4%) of female deaths at this age in 2017.

Figure 6: Top five leading causes of death for 35- to 49-year-olds, 2001 to 2017

England and Wales

[Download the data](#)

Notes:

1. Based on deaths registered in each calendar year.
2. The cause of death groups used here are based on a [list](#) developed by the World Health Organization, modified for use in England and Wales.
3. This figure includes the top five leading causes of death for males and females at this age group in 2017. These may not have been the top five causes in previous years.
4. 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.

9 . Long-term diseases and conditions remained the leading cause for ages 50 to 64 and 65 to 79 years in 2017

The leading causes of death for ages 50 to 64 and 65 to 79 years in 2017 were due to long-term diseases and conditions. Ischaemic heart diseases remained the leading cause for males in these age groups, accounting for an increased proportion of male deaths aged 50 to 64 years (17.6%), but a decreased proportion at ages 65 to 79 years (15.0%) (Figure 7).

For females, lung cancer remained the leading cause of death, and like males, it was accountable for a smaller proportion of deaths in these age groups compared with the previous year. At ages 50 to 64 years, breast cancer closely followed as the second leading cause, accountable for 10.1% of deaths, whereas for 65- to 79-year-old females, chronic lower respiratory diseases were the second leading cause, accountable for 9.1% of deaths (Figure 7).

Figure 7: Top five leading causes of death for 65- to 79-year-olds, 2001 to 2017

England and Wales

[Download the data](#)

Notes:

1. Based on deaths registered in each calendar year.
2. The cause of death groups used here are based on a [list](#) developed by the World Health Organization, modified for use in England and Wales.
3. This figure includes the top five leading causes of death for males and females at this age group in 2017. These may not have been the top five causes in previous years.
4. 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.

10 . Continued increases in deaths to dementia and Alzheimer disease at ages 80 years and over

Dementia and Alzheimer disease remained the leading cause of death for both men and women aged 80 years and over in 2017, responsible for 15.1% of male deaths aged 80 years and over, compared with 23.2% of females (Figure 8). Whilst deaths to dementia and Alzheimer disease continued to increase at this age, the opposite was seen for Ischaemic heart diseases, which accounted for 12.6% of male deaths and 8.5% of female deaths at this age, a continued decrease from 2016.

Figure 8: Top five leading causes of death for ages 80 and over, 2001 to 2017

England and Wales

[Download the data](#)

Notes:

1. Based on deaths registered in each calendar year.
2. The cause of death groups used here are based on a [list](#) developed by the World Health Organization, modified for use in England and Wales.
3. This figure includes the top five leading causes of death for males and females at this age group in 2017. These may not have been the top five causes in previous years.
4. 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.

Alzheimer disease is the most common cause of dementia. Dementia and Alzheimer disease are more likely to occur at older ages, with Alzheimer disease affecting more women than men.

11 . Links to related statistics

More data on [deaths in England and Wales in 2017](#) are available.

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 2017 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.

Further 2017 death statistics will be published later in 2018, see the [GOV.UK release calendar](#) for more details.

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 2018 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 Vital Statistics Outputs Branch by email to vsob@ons.gov.uk or telephone on +44 (0)1329 444110). [User requested data](#) will be published onto our website.

12 . 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 2017 (27,801 deaths). 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.

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.

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).