Births and Deaths in England and Wales, 2010

Date: 13 July 2011
Coverage: England and Wales  Theme: Population

This bulletin presents summary statistics on live births, stillbirths and deaths in England and Wales in 2010. Birth statistics reported include counts of live births, stillbirths, fertility rates by age of mother and by area of usual residence and the percentage of births to mothers born outside the UK. Death statistics reported include counts of deaths by age and sex and also by selected cause. Standardised mortality ratios and infant mortality rates by area of usual residence are also included.

Key findings

- There were 723,165 live births in England and Wales in 2010, compared with 706,248 in 2009 (a rise of 2.4 per cent)
- In 2010 the Total Fertility Rate (TFR) increased to 2.00 children per woman from 1.96 in 2009
- In 2010 there were 493,242 deaths registered in England and Wales compared with 491,348 in 2009 (a rise of 0.4 per cent)
- Age-standardised mortality rates continued their downward trend in 2010, with 6,406 deaths per million population for males and 4,581 deaths per million population for females. Compared with 2009 these figures represent falls of 2.5 per cent and 1.0 per cent respectively
- There were 3,140 infant deaths (under one year of age) registered in England and Wales giving an infant mortality rate (based on death registrations) of 4.3 deaths per thousand live births, the lowest rate ever recorded
- In 2010, there were 3,714 stillbirths giving a stillbirth rate of 5.1 per thousand live and stillbirths (down from 5.2 in 2009)

Key trends in births and deaths (numbers and rates)

Live births

There were 723,165 live births in England and Wales in 2010, compared with 706,248 in 2009 (a rise of 2.4 per cent) and 604,441 in 2000. The rise in 2010 represents a continuation of the increasing numbers of live births recorded since 2001. During this period the number of live births has risen by 22 per cent from 594,634 in 2001 despite a small fall between 2008 and 2009.
Fertility rates (see background note 3) for 2010 give an average number of 2.00 children per woman in England and Wales. This represents a slight increase in fertility from 1.96 children per woman in 2009. The last time the Total Fertility Rate (TFR) was this high was in 1973.

This latest increase continues the overall rise in fertility since 2001 (when the TFR was 1.63). The increasing TFR between 2001 and 2008 resulted from rising fertility in all age groups, with the exception of women aged under 20. The slight fall in the TFR in 2009 was a consequence of a drop in fertility rates for women aged under 30. In 2010 increasing fertility rates at all ages except teenagers means that the TFR has continued to rise.

Changes in the TFR can result from changes in the timing of childbearing within women’s lives as well as any changes in completed family size. There is no single explanation underlying the recent increases in fertility which are likely to have resulted from a combination of factors. Possible causes may include:

- Women born in the 1960s and 1970s who delayed their childbearing to older ages and are now catching up in terms of completed family size
- Changes in support for families (for example maternity and paternity leave and tax credits)
- Increases in the numbers of foreign born women with above average fertility

**Stillbirths**

The number of stillbirths increased slightly to 3,714 in 2010 from 3,688 in 2009 (a rise of 0.7 per cent). This rise is a consequence of the increase in the total number of births (both live births and stillbirths) in 2010. The stillbirth rate takes into account the total number of births and therefore provides a more accurate indication of trends. In 2010 the stillbirth rate fell slightly to 5.1 per thousand total births from 5.2 in 2009. This equals the rate in 2008 which represents the lowest stillbirth rate recorded over the last decade.
Fluctuations in the number of stillbirths and the stillbirth rate have occurred during the last decade (the highest stillbirth rate during the period was 5.8 per thousand live and stillbirths in 2003). Key risk factors for stillbirths are overweight mothers, smoking during pregnancy and multiple pregnancies.\(^3\)

**Total deaths**

There were 493,242 deaths registered in England and Wales in 2010 compared with 491,348 in 2009 (a rise of 0.4 per cent), and 537,877 in 2000. This is the second consecutive year that annual death registrations have been below 500,000. Before 2009, the last time that death registrations fell below 500,000 was in 1952. The number of deaths is affected by mortality rates (which can be affected by epidemics and very cold winters) and the size and age-sex structure of the population.

**Age-standardised death rates, England and Wales, 2000–2010**

Age-standardised mortality rates have continued their downward trend in 2010, with 6,406 deaths per million population for males and 4,581 deaths per million population for females. Compared with 2009, this is a fall of 2.5 per cent for males and 1.0 per cent for females. Since 2000 age-standardised mortality rates have decreased by 24 per cent for males and 19 per cent for females. The 2010 age-standardised mortality rates for both males and females are the lowest ever recorded in England and Wales.

Mortality rates are generally falling, reasons for this include medical advances in the treatment of many illnesses and diseases. This is illustrated by the reduction in age-standardised mortality rates for many causes of death.

Between 2009 and 2010 age-specific mortality rates across all five-year age-sex groups largely decreased or remained unchanged. In contrast the total number of males and females in England...
Births and Deaths in England and Wales, 2010

and Wales increased between mid-2009 and mid-2010 by 0.9 per cent and 0.7 per cent respectively although the differences by age were more complex with the population increasing in some age groups but decreasing in others. The rise in the number of deaths in 2010 is therefore likely to have been driven by the overall rise in the population particularly at the older ages, given that mortality rates mainly declined or remained unchanged.

**Infant, perinatal and neonatal deaths**

In 2010 there were 3,140 infant deaths (under 1 year of age) registered in England and Wales giving a rate of 4.3 deaths per thousand live births compared with 4.7 in 2009 and 5.6 in 2000. The infant mortality rate in 2010 (based on death registrations, see background note 7) is the lowest on record in England and Wales. The Infant Mortality National Support Team was established in 2008 to help disadvantaged areas address inequalities in infant mortality and improve infant health outcomes.

The neonatal mortality rate (deaths under 28 days) decreased in 2010 to 3.0 deaths per thousand live births from 3.2 in 2009. The postneonatal mortality rate (deaths between 28 days and one year) also decreased to 1.4 deaths per thousand live births from 1.5 in 2009.

The perinatal (stillbirths and deaths under 7 days) mortality rate was 7.4 per thousand total births in 2010 compared with 7.6 in 2009.

Between 1980 and 2010 the infant mortality rate fell by 64 per cent, while the neonatal and postneonatal mortality rates fell by 61 and 68 per cent respectively. However, the rates of change were not constant over the period: change in the first half of the period was about twice that in the second half.

Key risk factors for infant deaths are low birthweight, complications in pregnancy, immaturity-related conditions (for example, respiratory and cardiovascular disorders) and congenital anomalies.

**Further patterns and trends: Births**

**Live births by age of mother**

Between 2009 and 2010 there were increases in fertility rates of women at all ages except those aged under 20. The largest percentage increases were recorded for women aged 30–34 and 35–39 with fertility levels in both groups rising by 4.2 per cent. For women aged 30–34 fertility rates rose from 113.1 births per thousand females aged 30–34 in 2009 to 117.8 in 2010 while for women aged 35–39 fertility rates rose from 59.0 births per thousand females aged 35–39 in 2009 to 61.5 in 2010. The fertility rate for women aged 40 and over increased by 3.9 per cent. This continues the trend of the last two decades, during which the number of live births to mothers aged 40 and over has nearly trebled from 9,717 in 1990 to 27,731 in 2010.

Fertility rates for women aged 20–24 and 25–29 rose by smaller amounts (0.1 per cent and 0.7 per cent respectively). In contrast, fertility rates for women aged under 20 decreased by 4.3 per cent in 2010 from 25.3 births per thousand women aged 15–19 in 2009 to 24.2 in 2010.
These changes in age-specific fertility rates have resulted in the standardised average (mean) age of mother rising to 29.5 years in 2010, compared with 29.4 years in 2009 and 28.5 years in 2000. These trends reflect the postponement of childbearing to later ages. Increasing proportions of women have been delaying their childbearing. This may be due to a number of factors such as increased participation in higher education, the desire to establish a career, getting on the housing ladder and ensuring financial stability before starting a family.¹

**Age-specific fertility rates, England and Wales, 2000–2010**

The number of births in a given year is dependent on the number of women in the key childbearing ages (15–44 years) and on fertility rates in that year. The number of live births in 2010 increased for all ages except women aged under 20 compared with 2009. For ages 20–24, 25–29 and 30–34, the rise in births was driven by a rise in fertility and a rise in the estimated female population at these ages in England and Wales between mid-2009 and mid-2010. For ages 35–39 and 40 and over, the rise in births was driven solely by a rise in fertility (as the estimated female population in England and Wales aged 35–39 and 40–44 decreased between mid-2009 and mid-2010). The decrease in births to women aged under 20 in 2010 was caused by falling fertility at this age and also a decrease in the number of women aged 15–19 between mid-2009 and mid-2010.

Annual changes in the size and age-structure of the female population aged 15–44 are driven by migration, mortality, the number of women entering the key childbearing ages (those turning 15 years of age) and the number of women exiting the key childbearing ages (those reaching age 45).

**Live births within marriage/civil partnership**

In 2010 nearly half of all babies were born outside marriage/civil partnership (46.8 per cent) compared with 46.2 per cent in 2009 and 39.5 per cent in 2000. This continues the long-term rise in the percentage of births outside marriage/civil partnership which is consistent with increases in the number of couples cohabiting rather than entering into marriage or civil partnership.⁶
Live births to mothers born outside the UK

The percentage of live births in England and Wales to mothers born outside the UK continued to rise in 2010, reaching 25.1 per cent compared with 24.7 per cent in 2009 and 15.5 per cent in 2000. The proportion of births to mothers born outside the UK has increased every year since 1990 when it was 11.6 per cent. Recent rises in the number of births to non-UK born women can be mainly attributed to the increase in the population of women born outside the UK.²

The proportion of births to women born outside the UK is higher than the proportion of the female population of childbearing age born outside the UK.² There are two reasons for this: firstly fertility levels are on average higher among foreign-born women and secondly the foreign-born and UK-born female populations of reproductive age have different age structures (for example a higher proportion of foreign-born women are aged from 25 to 34, the ages where fertility is highest).

Live births by area of usual residence

The West Midlands had the highest Total Fertility Rate (TFR) among the regions of England in 2010 with 2.09 children per woman. The North East had the lowest TFR (1.85 children per woman).

Among the local authorities in England, Westminster had the lowest TFR with 1.17 children per woman, while Newham had the highest (3.18 children per woman). Westminster also had the lowest TFR in 2009 (1.16 children per woman), while North Dorset had the highest (3.01 children per woman), although the TFR for North Dorset is based on a small number of women and consequently is less robust.

In Wales, Cardiff had the lowest TFR with 1.74 children per woman while Isle of Anglesey had the highest (2.34 children per woman). The TFR for the Isle of Anglesey is based on a small number of women and so may be less robust. The Welsh areas with the lowest and highest TFRs in 2009 were Ceredigion with 1.59 children per woman and Newport with 2.26 children per woman.

Fertility levels vary by local area for several reasons including differences in the timing of childbearing and differing ideals on family size. These can be influenced by the population characteristics of the area such as levels of educational attainment, ethnicity/country of birth, and deprivation levels.⁷

Further patterns and trends: Deaths

Causes of death

Circulatory diseases, such as heart disease and strokes, remain the most common cause of death, contributing to almost one-third (32 per cent) of all deaths registered in 2010. However, the overall downward trend in circulatory disease death rates has continued. Between 2000 and 2010, they fell by 40 per cent to 2,018 deaths per million population for males and by 38 per cent to 1,269 deaths per million population for females.

Cancer accounted for just over a quarter (29 per cent) of all deaths registered in 2010, with a rate of 2,029 deaths per million population for males and 1,477 deaths per million population for
females. Since 2000 death rates for cancer have fallen by 15 per cent for males and 12 per cent for females.

**Death registrations by area of usual residence**

The North West had the highest standardised mortality ratio (SMR) among the regions of England in 2010 with mortality levels 11 percentage points above the national level. In contrast, mortality levels were lowest in London, the South East and the South West (all 7 percentage points below the national level). The North West also had the highest regional SMR in 2009 while the South East also had the lowest. Comparisons of SMRs across years can be misleading (see background note 5).

In 2010 the local authority in England with the highest SMR was Liverpool (35 percentage points above the national level) while Kensington and Chelsea had the lowest (41 percentage points below the national level).

In Wales, Blaenau Gwent had the highest SMR (25 percentage points above the national level) while Ceredigion had the lowest (13 percentage points below the national level).

The substantial variation between different local areas reflects underlying differences in factors such as income deprivation, socio-economic status and health behaviour.

**Infant mortality by health area of usual residence**

Infant mortality rates vary by health area and rates for each health area can fluctuate over time. In 2010 the West Midlands had the highest infant mortality rate among the strategic health authorities (SHAs) in England with 5.5 deaths per thousand live births. The South West had the lowest with 3.2 deaths per thousand live births. The highest infant mortality rate among the local health boards (LHBs) in Wales was 5.3 deaths per thousand live births in Betsi Cadwaladr University. Aneurin Bevan had the lowest with 2.3 deaths per thousand live births. Infant mortality rates for LHBs in Wales are based on a much smaller number of live births and are therefore less robust that rates for regions within England.

The substantial variation between different health areas reflects underlying differences in maternal factors such as the mother’s country of birth, social class, and age.

**Users and uses of birth and death statistics**

The Office for National Statistics uses these data to:
- Produce population estimates and population projections both national and subnational
- Quality assure census estimates
- Report on social and demographic trends
- Analyse mortality, for example infant mortality where infant deaths are linked to their corresponding birth record to enable more detailed analyses on characteristics such as age of parents, birthweight and whether the child was born as part of a multiple birth
- Produce life expectancy estimates

The Department of Health is a key user of birth and death statistics. Data are used, for example, to plan maternity services, inform policy decisions and monitor child mortality under a new Public
Services Transparency Framework\(^9\) (this has replaced the Public Service Agreement system that was in place under the previous government). Other key users of the data are local authorities and other government departments for planning and resource allocation. For example, local authorities use birth statistics to decide how many school places will be needed in a given area. The Department for Work and Pensions uses detailed birth and death statistics to feed into statistical models they use for pensions and benefits.

Users also include other public sector organisations such as the Police and the Home Office who are interested in data on external causes of death. Private sector organisations such as banks, insurance and investment companies are particularly interested in deaths by single year of age and region which feeds into risk estimation, while births data are also of interest to retailers to inform future demand.

Other users include academics, demographers and health researchers who conduct research into trends and characteristics. Lobby groups use birth and death statistics to support their cause, for example, campaigns against school closures, midwife shortages, alcohol misuse or suicide. Special interest groups, such as Birth Choice UK, make the data available to enable comparisons between maternity units to help women choose where they might like to give birth. Organisations such as Eurostat and the UN use birth and death statistics for making international comparisons. The media also report on key trends and statistics.

**Further Information on birth and death statistics**

More detailed data for births can be found at: 

This includes:
- Birth summary tables, England and Wales, 2010 (data tables published as part of this release)
- Births metadata which provides further information on data quality, legislation and procedures relating to births
- A Summary Quality Report for births which provides information on statistical quality and the methods used to compile the data
- Frequently asked questions on births and fertility

More detailed data for deaths can be found at: [www.statistics.gov.uk/statbase/Product.asp?vlnk=14409](http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14409)

This includes:
- Death registration summary tables, England and Wales, 2010 (data tables published as part of this release)

For further information on data quality, legislation and procedures relating to deaths see Mortality Statistics: Deaths registered in 2009 which can be found at: [www.statistics.gov.uk/statbase/product.asp?vlnk=15096](http://www.statistics.gov.uk/statbase/product.asp?vlnk=15096)

An interactive mapping tool which enables trends in fertility and mortality to be analysed at the local level is available at: [www.statistics.gov.uk/births-deaths/default.htm](http://www.statistics.gov.uk/births-deaths/default.htm)
(Please note that age-standardised mortality rates (ASMRs) are not calculated as part of this release. The tool will be updated to include 2010 ASMRs in autumn 2011. Fertility rates for 2010 have been incorporated into the tool).


Statistics on births and deaths in Northern Ireland are available at:
Births: www.nisra.gov.uk/demography/default.asp8.htm
Deaths: www.nisra.gov.uk/demography/default.asp10.htm

More detailed birth and death statistics for 2010 will be released later in 2011 this includes:

- Parents’ country of birth, England and Wales, 2010 (published 25 August 2011): includes births by country of birth of mother by local authority as well as total fertility rates for UK born and non-UK born women
- Characteristics of birth 1, England and Wales 2010 (published September/October 2011): includes further statistics on stillbirths. Tables also provide birthweight data for live and stillbirths by mother’s area of usual residence and maternities, live births, and stillbirths in hospitals by area of occurrence
- Live births by area of usual residence, England and Wales, 2010 (published September/October 2011): provides summary data for live births for local authorities and health areas including figures by age of mother
- Mortality Statistics: Deaths Registered in 2010, England and Wales (published October/November 2011): provides detailed information on cause of death by age and sex

Further publication dates of detailed 2010 birth and death statistics are available on the publication hub at: www.statistics.gov.uk/hub/

**Improvements to population statistics**

In May 2010 a package of improvements for mid-year population estimates for England and Wales was introduced as part of a cross government programme to improve migration statistics. These improvements led to revisions to the mid-2002 to mid-2008 local authority population estimates for England and Wales. The improved methods have also been used to calculate the mid-2009 and mid-2010 population estimates. Details of this improvements package can be found at: www.ons.gov.uk/about-statistics/methodology-and-quality/imps/index.html

Further improvements to the population estimates methodology have been developed. More information on these improvements is expected to be published in autumn 2011. These have been made as the result of user feedback and improved access to, and understanding of, a range of administrative sources.
References


Background Notes

1. To help the ONS determine user requirements and improve our outputs please take part in our user feedback surveys on birth statistics and death statistics at: births: [www.surveymonkey.com/s/HPV3XHL](www.surveymonkey.com/s/HPV3XHL) deaths: [www.surveymonkey.com/s/HPDGX7T](www.surveymonkey.com/s/HPDGX7T)

2. All figures for 2010 are final. Death figures are based on deaths registered in the data year. Birth figures are based on births occurring in the data year, but incorporate a small number of late registrations from births occurring in the previous year. The number of death registrations can sometimes be affected by the number of registration days in the calendar year. The increased number of deaths in 2010 has not been caused by an increase in registration days since there were the same number of registration days in 2009 and 2010.

3. The total fertility rate (TFR) is the average number of live children that a group of women would have if they experienced the age-specific fertility rates of the calendar year in question throughout their childbearing lives. The TFR provides an up-to-date measure of the current intensity of childbearing. Changes in timing of births may influence the TFR; for example if women are increasingly delaying childbearing to older ages the TFR may underestimate average family size. National TFRs are calculated by summing single-year age-specific fertility rates over all ages within the child-bearing lifespan (taken to be ages ‘15 and under’ to ages ‘44
and over'). TFRs for subnational areas (that is regions, counties, unitary authorities and health authorities/boards) are calculated by summing five-year age-specific fertility rates over all childbearing ages and then multiplying by five (this method gives more robust TFRs for areas with smaller populations). The TFRs for 2010 have been calculated using the mid-2010 population estimates.

4. The age-standardised mortality rates in this release cover all ages and are directly age-standardised to the European Standard Population, which allows comparisons between populations with different age structures, including between males and females and over time. Age-standardised rates for 2010 in this release are calculated using the mid-2010 population estimates.

5. An SMR is essentially a comparison of the number of the observed deaths in a population with the number of expected deaths if the age-specific death rates were the same as a standard population. It is expressed as a ratio of observed to expected deaths, multiplied by 100. If an area has an SMRs equal to 100 it implies that the mortality rate for the area is the same as the national mortality rate. A number higher than 100 implies an excess mortality rate whereas a number below 100 implies below average mortality. Comparisons of SMRs across years can be misleading because they are influenced by the size and the age-sex structure of the population in local areas which varies between years.

6. Definitions used in this bulletin:

- Stillbirth – born after 24 or more weeks completed gestation and which did not, at any time, breathe or show signs of life
- Early neonatal – deaths under 7 days
- Perinatal – stillbirths and early neonatal deaths
- Neonatal – deaths under 28 days
- Postneonatal – deaths between 28 days and 1 year
- Infant – deaths under 1 year

7. The infant mortality rates in this release have been calculated by dividing the number of infant death registrations (deaths under 1 year) by the number of live births occurring in the year plus late registrations from the previous year. Infant mortality rates can also be calculated using death occurrences. These rates are not released until later because for the death occurrences dataset to be acceptably complete it must be taken some 9 months after the end of the relevant calendar period. All perinatal and neonatal rates have also been calculated using death registrations rather than death occurrences. Statistics on infant, neonatal and perinatal deaths occurring in England and Wales in 2010 will be published in Child Mortality Statistics (this publication is based on death occurrences rather than registrations). See the publication hub for more information on future release dates: www.statistics.gov.uk/hub/

8. Coding underlying cause of death: the cause of death data are based on the final underlying cause of death, which takes account of any additional information provided by medical practitioners or coroners after the death has been registered. The original underlying cause of death only changes in a very small number of deaths (around 0.2 per cent) in a given year. Death registered in 2010 have been coded to the Tenth Revision of the International Classification of Diseases and Related Health Problems (ICD–10).

9. The Human Fertilisation and Embryology Act 2008 contained provisions enabling two females in a same-sex couple to register a birth from 1 September 2009 onwards. ONS does not
distinguish between civil partnerships and marriages for birth statistics. Published figures therefore represent births within marriage/civil partnership or births outside marriage/civil partnership. The impact on 2010 birth statistics is negligible since only 0.07 per cent of live births were registered to same-sex couples. In 2010 there were 335 live births registered to same-sex couples in a civil partnership and 140 live births registered to a same-sex couple outside a civil partnership.

10. The 2010 standardised mean (average) age of mother has been calculated using the mid-2010 population estimates.

11. Further 2010 birth statistics will be published later in 2011. See the publication hub for more detail on releases: www.statistics.gov.uk/hub/

12. Further statistics on 2010 death registrations in England and Wales will be published later in 2011. See the publication hub for more detail on releases: www.statistics.gov.uk/hub/

13. To meet user needs, very timely but provisional counts of death registrations are published as follows: Provisional counts of weekly death registrations by age-sex group and region: www.statistics.gov.uk/statbase/Product.asp?vlnk=9684 and provisional counts of monthly death registrations by local authority: www.statistics.gov.uk/StatBase/Product.asp?vlnk=15355 Users should note that figures for 2011 have not been subject to the full quality assurance process so figures are considered provisional.


15. The launch of the new ONS website on 28 August 2011 will bring changes to the design and format of statistical bulletins. The bulletin main body will be in html and pdf format but detailed data tables will be available as Excel spreadsheets only. The new website will improve the way users can access our statistics but many existing bookmarks and links will no longer work and users will need to update them. Find out more at: www.ons.gov.uk/about/what-we-do/programmes---projects/web-development/index.html

16. Details of the policy governing the release of new data are available from the Media Relations Office.

17. National Statistics are produced to high professional standards set out in the Code of Practice for Official Statistics. They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.

© Crown copyright 2011.

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence.

To view this license, go to: www.nationalarchives.gov.uk/doc/open-government-licence/ or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU

Email: psi@nationalarchives.gsi.gov.uk

Next publication:
summer 2012