Office for National Statistics

User guide to birth statistics

Supporting information for birth statistics, which present figures on births that occur and are then registered in England and Wales. Figures are based on information collected at birth registration.

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1 . Introduction

Birth statistics for England and Wales are produced by the Office for National Statistics (ONS). They are published under the Accredited Official Statistics logo, the designation guaranteeing that those outputs have been produced to high professional standards set out in the Code of Practice for Statistics and have been produced free from any political interference.

Important points about birth statistics

- Birth statistics are derived from information recorded when live births and stillbirths are registered as part of civil registration, a legal requirement; these data represent the most complete data source available.
- The registration of births is a service carried out by the Local Registration Service in partnership with the General Register Office (GRO) in England and Wales.
- Birth statistics represent births that occurred in England and Wales in a calendar year, the birth registration dataset includes a very small number of late registrations from the previous year.
- Where relevant, birth registrations are linked to their corresponding NHS birth notification, referred to as the linked births dataset, to enable analysis of further factors such as gestation of live births and ethnicity of the baby.
- National Records of Scotland (NRS) and Northern Ireland Statistics and Research Agency (NISRA) publish regular birth statistics for their own countries.
- Our birth statistics adhere to the disclosure control guidance for birth and death statistics.

The detailed processes involved in the production of birth statistics are described in Annex E: Flow chart of births process.

The birth statistics we produce

Our annual births releases are currently undergoing a transformation process. The purpose of this transformation is to:

- increase the timeliness of the statistics
- reduce the number of tables that are produced, without any key information being lost
- publish tables in a tidy format, which facilitates analysis
- group tables together to be published by data source

Before the 2023 data year, we published three birth-themed datasets:

- our Births in England and Wales summary tables
- our Birth characteristics dataset
- our Births by parents' characteristics dataset

Each dataset was accompanied by a statistical bulletin. These datasets provided the latest year's figures, alongside some historical data for comparison.

From 2023, we have combined data from these three datasets into two new datasets. These are:

- our Births in England and Wales: birth registrations dataset
- our Births in England and Wales: linked births dataset

From 2024, we are also now including the dataset for Parents' country of birth.

These datasets are accompanied by a single statistical bulletin: Births in England and Wales: 2024.

The births registrations and linked births datasets now use different data sources. Our Birth registrations dataset uses birth registration data, and our Linked births dataset uses NHS notification data linked to birth registration data. More information about the differences between the two datasets is available in Section 4. Notes and Definitions.

The births registrations dataset includes:

- the number and rates of live births, maternities and stillbirths provided down to local authority level
- age-specific fertility rates and total fertility rate
- maternity statistics by age of mother, type of registration (within marriage or civil partnership, joint or sole) and place of birth
- data on previous live-born children
- mean ages of mothers and fathers
- the number of live births and stillbirths by Index of Multiple Deprivation (IMD)

The linked births dataset includes:

- the number of live births and stillbirths and stillbirth rate
- gestational age and birthweight of the baby
- cause of death
- ethnicity of the baby
- National Statistics Socio-economic Classification (NS-SEC)

Before the 2014 data year, these figures were published in:

- our Characteristics of mother 1 dataset
- our Characteristics of mother 2 dataset
- our Further parental characteristics dataset

Before the 2012 data year, live births by NS-SEC of father were published in our Births by socio-economic status of father dataset.

For 2024, data and analysis on fertility rates were published separately to our Births in England and Wales: 2024. This is because of the unavailability of mid-year population estimates at the time of publishing, which are necessary to calculate the rates.

The parents' country of birth dataset includes:

- live births by country of birth of mother and father
- live births by country of birth and age of mother
- live births by country of birth (UK and non-UK) of mother and father and area of usual residence

We publish detailed analysis on parents' country of birth because this information is collected at birth registration and does not change over time, while their nationality or ethnicity may change.

Five explorable datasets providing more detailed birth statistics are also made available as soon as possible after the first release of annual births data. These explorable datasets have been designed to protect the confidentiality of individuals; they are outlined in this section.

Live births in England and Wales by sex and characteristics of the mother: national and regional

- year of birth
- country and region of usual residence of the mother
- age of mother: under 20 years, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 years and over, not stated
- country of birth of mother: UK, EU (excluding UK), other, not stated
- marital status or registration type: inside marriage or civil partnership and joint registrations where parents live at same address, joint registrations where parents live at different addresses, sole registrations, not stated
- sex of baby: male, female, not stated
- multiple birth: yes, no

Live births in England and Wales by characteristics of mother and father

- year of birth
- age of mother: under 20 years, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 years and over, not stated
- age of father or second parent (if fathers or second parents details present): under 20 years, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49, 50 to 54, 55 years and over, not stated
- country of birth of mother: UK, EU (excluding UK), other, not stated
- country of birth of father (if fathers or second parents details present): UK, EU (excluding UK), other, not stated
- marital status or registration type: inside marriage or civil partnership and joint registrations where parents live at same address, joint registrations where parents live at different addresses, sole registrations, not stated

Live births in England and Wales down to local authority area

- year of birth
- age of mother: under 20 years, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 years and over, not stated
- area of usual residence of mother: countries, regions, counties, local authorities

Live births in England and Wales for small geographic areas

- year of birth
- area of usual residence of mother: Lower layer Super Output Area (LSOA), Middle layer Super Output Area (MSOA), electoral ward, clinical commissioning group

Live births in England and Wales: birth rates down to local authority areas

The following rates are available for countries, regions, counties and local authorities in England and Wales:

- crude birth rate
- general fertility rate (GFR)
- total fertility rate (TFR)
- age-specific fertility rates (ASFRs)
- standardised mean age of mother

Other birth-related publications include:

Childbearing for women born in different years (formerly known as Cohort fertility): presents data on fertility by year of birth of mother rather than the year of birth of child for England and Wales as a whole - this package includes the average number of live-born children and the proportion of women remaining childless for women born in different years.

Before the 2017 data year, a further births package Births by area of usual residence was published providing summary data for live births down to local authority level including figures by age of mother. Figures by age of mother are available in the explorable datasets while the summary birth statistics at local authority level are available in our Births in England and Wales: birth registrations dataset.

Historical data are included in each publication where possible. Historical publications for England and Wales are FM1 Birth statistics (from 1974 to 2008); for earlier years, the Registrar General's Statistical Review of England and Wales.

Publication dates for statistical releases are announced on the GOV.UK release calendar. Statistical bulletins are published alongside releases and provide commentary on main findings.

2 . Information collected at birth registration

The registration of life events (births, deaths, marriages and civil partnerships) is a service carried out by the Local Registration Service in partnership with the General Register Office (GRO) in Southport, England. The provision of life events data by GRO is formally defined by a service level agreement between GRO and ourselves.

Most of the information, for both live births and stillbirths, is typically supplied to registrars by:

- the mother of the child
- the father or second parent if the child was born within marriage or civil partnership
- the occupier of the house in which the child was, to the knowledge of that occupier, born
- any person present at the birth
- any person having charge of the child

The duty of giving information is placed primarily upon the parents of the child but, in the case of death or inability of the parents, the duty falls on one of the other qualified informants.

The particulars to be registered concerning a birth are prescribed by the Births and Deaths Registration Act 1953. Certain other particulars are collected for statistical purposes under the Population (Statistics) Acts 1938 and 1960 , and are not entered in the register.

The procedures and information required for stillbirths are similar to those for live births. The main difference is the recording of the cause of death of the stillborn child, based on evidence given by the doctor or midwife present at the birth or who examined the body. There are also differences in the way birthweight is processed: for more information see Section 4.15: Birthweight.

Usually, information for the registration of a birth must be given personally by the informant to the registrar for the sub-district in which the birth occurred. However, an informant may supply this information to any registrar by making a declaration of these particulars. The declaration is sent to the registrar of the sub-district where the birth occurred, and that registrar will enter the particulars in the register.

Since 1 September 2009, it has been possible for two females in a same-sex couple to register a birth. This new law applied to fertility treatments carried out on or after 6 April 2009.

Information supplied by the parents:

- the name of the child
- the sex of the child
- the date of birth is provided; if more than one live child is born to the mother, then time of birth is also recorded
- place of birth is entered as the usual name and the address of a hospital, maternity home or other communal establishment, or the address of a private dwelling; we then code the place of birth to one of the following: NHS hospital, non-NHS hospital, at home or elsewhere
- the place of birth of each parent may be recorded in detail if this was in the UK
- the mother's usual address is entered, as well as the informant's address where appropriate
- occupation is recorded for each parent, if both parents' names are entered in the register; the informant is asked whether each parent was in employment at any time before the child's birth and a description of the occupation may be recorded – if either parent is unemployed, their last full-time occupation will be recorded
- the employment status and industry of each parent
- whether the pregnancy resulted in a multiple birth

Confidential information supplied under the Population (Statistics) Acts (PSA)

Informants are also required to provide further information, treated as confidential, under the provisions of the PSA:

- the mother's date of birth
- the father's or second parent's date of birth, if his or her name is entered in the register

If the child's parents were married or in a civil partnership at the time of the birth, or when the child was conceived, even if they later divorced or dissolved their civil partnership or the father or second parent died before the child's birth:

- the date of the parents' marriage or civil partnership

Two amendments to the PSA mean that from 28 May 2012 information is now collected at all birth registrations on:

- the total numbers of previous live births and previous stillbirths that the mother has had (not just those with the current or former husband); this has simplified the question asked by registrars and provides improved coverage
- whether the mother has been previously married or in a civil partnership (if she is currently married or in a civil partnership) or whether the mother has ever been married or in a civil partnership (if she is not currently married or in a civil partnership)

Prior to the amendments in 2012, these questions were only asked for births that occurred within marriage, and the number of previous children only related to those with the current or previous husband.

Information not supplied by the parents:

- for live births, details of birthweight are provided by the hospital where the birth took place, or by the midwife or doctor in attendance at the birth; we receive the birthweight as a consequence of the NHS birth notification being linked to the corresponding birth registration by the registrar
- for stillbirths, details of cause of death, duration of pregnancy and weight of foetus are supplied on a certificate or notification by a doctor or midwife who was present at the birth, or who examined the body; the certificate or notification is then taken by the informant to a registrar

3 . Issues affecting the quality of birth registration data

registration data

The accuracy of information contained in the draft birth entry is the responsibility of the informant(s), usually the mother, or both parents where the registration is a joint one outside marriage. Wilfully supplying false information may render the informant(s) liable to prosecution for perjury. There are also validation checks carried out by the registrar. Therefore, it is believed that in general the information supplied by the informant(s) is correct.

3.1 Registration Online System

In November 2006, a pilot for a web-based Registration Online system for births and deaths (RON), commenced in five registration districts. This enabled registrars to record births, stillbirths and deaths online. Following the success of this pilot, RON was implemented in most register offices on 26 March 2007. However, due to significant performance problems, the system was suspended on 10 April 2007 resulting in around half of registrars reverting back to using the previous electronic system, Registration Service Software (RSS).

From 8 May 2007, almost all register offices were submitting data electronically using either RON or RSS. Any remaining birth registrations that were held only on paper at register offices were later entered onto the RON system at the ONS, or by the local registration service. Once all the birth records were available electronically, a rigorous statistical quality assurance process was completed by the ONS.

Work to improve the performance of RON continued throughout 2008. During this time, a further 15 registration districts moved back onto RON. By the end of 2008, the percentage of registration districts using RON for birth and death registrations had reached 56%. In 2009, this system was being used for 88% of births recorded by registrars.

The RON system was fully rolled out on 1 July 2009 with all register offices using it to record births from this date. With the introduction of RON, it became possible to carry out some additional validation checks at the point of registration, such as validation of address and postcode.

When RSS was used, then the registrar would complete a draft entry Form 309 (Annex A (PDF,117KB) for a live birth or Form 308 (Annex B (PDF,115KB) for a stillbirth. Using RON, registrars now complete a draft entry Form 309 (Annex C (PDF,115KB) for a live birth or Form 308 (Annex D (PDF,122KB) for a stillbirth.

3.2 Imputing missing data

Under the Population (Statistics) Acts (PSA), certain confidential data items are collected at the registration of a birth. Sometimes these data items are missing and how these missing data have been handled has varied over the years.

Prior to 2004, the missing values were imputed using donor values from the most recently processed complete record of similar characteristics to the incomplete record. Also, there was a particular problem in 1999.

In this year, the proportion of live birth registrations without PSA information received from one register office was higher than usual due to a combination of circumstances. The missing data on those records were imputed using a random sample of data for that area from the previous three years. This was a change from the usual method but was used to improve the quality of the imputations. Procedures were put in place, which means that such a problem is unlikely to recur. For further information about this see Section C.2 of the 1999 volume of FM1 Birth statistics.

From 2004 to 2006, all imputed values for PSA data items were re-imputed using the Canadian Census Edit and Imputation System (CANCEIS). CANCEIS selects the most appropriate donor record from the entire annual dataset. This improved the distribution of imputed mothers' ages (especially in small areas) and the distributions for each of the other PSA data items.

In 2007, a new process was introduced to link live birth registrations to their corresponding NHS birth notification record. Some data items appear on both sources and often when an item is missing from the birth registration, it will be on the birth notification, allowing us to use that value instead of imputation. From 2007, this method was used when mother's date of birth was missing from the registration record but appeared on the notification. However, some remaining missing PSA data items were still imputed using CANCEIS as in previous years.

From May 2012, imputation of missing data on the number of previous children was discontinued because the level of missing data was very low (the number of previous live-born children is missing on less than 0.9% of live births).

For 2013 to 2017 data, missing data items were no longer imputed using CANCEIS. If the mother's age was still missing after attempting to obtain the information from the birth notification, it was imputed using the most recently processed complete record of similar characteristics to the incomplete record. Similarly, if the second parent's age or the date of marriage or civil partnership was not given, a value for the duration of marriage was imputed from a similar record with completely stated and otherwise matching particulars.

However, with the number of missing values being so low, it is debatable whether imputation is necessary; it changes some records and makes the methodology more complex, with minimal gain statistical quality (in this case) because so few values are missing. As a result, all imputation was discontinued in March 2018. The small number of records, where mother's, father's or second parent's age is missing will now be included in the counts for "all ages" in our tables but excluded from any age breakdowns This affects 2018 births data onwards.

3.3 Changes to the Population (Statistics) Act

As well as expanding coverage of the previous children question to all women, the question changed slightly. Before May 2012, married women were asked only for births to current and previous husbands (even if they took place before the marriage), whereas after the change, all women are simply asked to provide information on all previous births.

The information provided by women on the number of previous live-born children they had when registering their most recent birth shows higher proportions of married women saying they have previous children than had been recorded prior to the change. More information can be found in this methodology article on Quality assurance of new data on birth registrations, as a result of changes to the Population (Statistics) Act – from May 2012 onwards.

3.4 Coronavirus pandemic

Birth registration services in England and Wales were temporarily suspended in March 2020 because of the coronavirus (COVID-19) pandemic. From June 2020, registration services restarted where it was safe to do so. Consequently, 2020 births registrations came in much later than in normal years with 42% arriving after 42 days (the usual legal limit). Delays in birth registrations continued in 2021 and 2022, with 26% and 13% respectively arriving after 42 days

To achieve a balance between timeliness and completeness, we have used the following cut-off dates for our datasets:

- 12 August 2021 for the 2020 annual birth registrations dataset
- 16 May 2022 for the 2021 annual birth registrations dataset
- 18 April 2023 for the 2022 annual birth registrations dataset
- 28 March 2024 for the 2023 annual birth registrations dataset

In 2024, our annual dataset included:

- births occurring in 2024 that were registered by 25 February 2025
- births occurring in the year before the reference year but that were registered late (after the previous 28 March 2024 cut-off date) and therefore did not make it into the previous year's statistics

We discuss registration delays and how they affect our statistics in more detail in Births in England and Wales explained: 2020. Subsequent releases that used 2020 to 2022 birth registration data were also delayed.

3.5 Stillbirths by cause of death

Before the 2020 data year, data on stillbirths by cause of death was published as part of our Child mortality (death cohort) tables in England and Wales. From the 2020 data year, this table was included in our Birth characteristics dataset, and for the 2023 data year it is now in our Births in England and Wales: linked births dataset. Full details of cause of death coding and the ONS cause of death group hierarchical classification for stillbirths and neonatal deaths are provided in our User guide to child and infant mortality statistics.

From the 2021 data year the hierarchical classification used to classify ONS cause of death groups for stillbirth and neonatal deaths has been updated to align with changes to the cause of death coding software. As such ONS cause groups from 2021 onwards are not directly comparable with 2014 to 2020 data.

Dual coding of the 2,371 stillbirths registered in 2020 in England and Wales enabled identification of the differences because of the reclassification. For stillbirths, 311 records (13.1%) changed cause group when reclassifying them into ONS cause groups. Of the eight ONS cause groups, three groups saw statistically significant changes in the number of records. These three cause groups were asphyxia, anoxia or trauma (antepartum/unknown), congenital anomalies and other conditions.

The asphyxia, anoxia or trauma (antepartum/unknown) cause group saw a net loss of 75 records because of the reclassification, a 16.8% decrease in the number of records. These records were reclassified mainly into the other specific conditions (86) and other conditions (25) cause groups. The largest number of new records entering the cause group came from the other conditions antepartum/unknown cause group (31).

The congenital anomalies cause group saw a 16.8% increase in the number of records, a net increase of 79 records. This increase was primarily because of reclassification from the other specific conditions (65) cause group, with a further 14 records being reclassified from several other cause groups.

In the other conditions cause group, the update resulted in a 4.3% decrease, a net loss of 51 records. A total of 89 records were reclassified into new cause groups, the largest being to the other specific conditions (45) and asphyxia, anoxia or trauma antepartum/unknown (31) cause groups.

4 . Notes and definitions

The Office for National Statistics (ONS) produces two births datasets. Totals in each dataset differ.

Firstly, the birth registrations dataset represents births that occurred in the calendar year, but includes a very small number of late registrations from the previous year. The cut-off dates and number of late registrations included in the birth registration dataset are reported in Section 4.2 and Table 1.

Secondly, the linked births dataset includes birth registrations linked to their corresponding NHS birth notification to enable analysis of further factors such as gestation of live births and ethnicity of the baby. Before 2019, the subset of birth registrations linked to their corresponding notification was based on a true birth cohort, and did not include any late registrations. Since 2020, our linked dataset is based on the same cohort as the registrations so contains very few late registrations. Section 4.3 provides more information and the linkage rates of birth registration to birth notifications each year are reported in Table 2.

4.1 Populations used to calculate rates

The population figures used to calculate rates are generally the ONS mid-year estimates of the resident population of England and Wales.

The population estimates used are the most up-to-date when rates are produced. The specific population estimates used are detailed alongside published tables. Sometimes it is necessary to revise fertility rates following revisions to the population estimates. Such revisions are footnoted on tables. Further information on population estimates and their methodology is available.

4.2 Occurrences date and registration date

From 2001, the cut-off date for inclusion in the reference year was extended to 25 February to allow increased capture of births registered late. This change means the annual statistics are prepared on as close to a true occurrences basis as possible without further delay to publication, which provides a purer denominator for calculating infant mortality rates. To avoid artificially inflating the 2001 dataset through the increased capture of late registrations, the start date for the carryover of late registrations from births occurring in 2000 was similarly moved by two weeks.

Since 2001, the following are included in annual statistics:

- births occurring in the reference year that were registered by 25 February the following year
- late registrations for births occurring in the year before the reference year, that were registered too late to be included in the previous year's dataset (after 25 February)

In the 2000 volume the total number of births included:

- births that occurred in 2000 registered by 11 February 2001
- births occurring in 1999 that were registered between 12 February 2000 and 11 February 2001, that is, births in the previous year that had not been tabulated previously

Total annual births from 1994 to 1999 were derived in a similar way, except that births for all earlier years were included in the annual totals, not just births in the previous year.

Up to 1993, the cut-off date was 31 January of the following year, but from 1994 this was then extended to the legal time limit by which a birth should be registered (42 days).

Since the dataset for the 2000 volume, a small number of very late registrations have been excluded each year from the official statistics. Inclusion of these very late registrations in the statistical dataset was found to have an adverse effect on the quality of infant mortality data when linked with the live birth data. The annual dataset now includes only those births occurring in the reference year and late registrations of births occurring in the year previous to the reference year.

Every registrar of births and deaths is required to secure the prompt registration of births occurring within the sub-district covered. The registrar will, if necessary, send a requisition to the person whose duty it is to register the birth. Between 2008 and 2019, the percentage of births registered later than 42 days (the usual legal limit) has ranged between 2% and 4%. In 2020, 42% of registrations were registered more than 42 days after birth; in 2021 and 2022, 26% and 13% of registrations, respectively were registered more than 42 days after birth. In 2023, the percentage had fallen to 8%, and in 2024 it has fallen again to 7%. We discuss registration delays and how they affect our statistics in more detail in Births in England and Wales explained: 2020.

From 2001 to 2020, the number of late registrations that miss the cut-off date and end up in the following year's statistics has been less than 400. From 2021 onwards, the number of late registrations from the previous year included in the dataset was higher than usual, but still accounted for less than 1% of all births and does not affect the headline trends discussed (Table 1). In 2024, there were a large number of late registrations – more than during the coronavirus (COVID-19) pandemic – though the reason for this is currently unknown. There are also some very late registrations that have still not been registered some 14 months after the end of the reference year. These records are not included in any birth statistic. Since 2001, there have been fewer than 70 of these each year.

Table 1: Number of late registrations of births occurring in the previous year, England and Wales

Year	Number of births occurring in previous year included in this year's birth registration dataset
2024	1,172
2023	580
2022	630
2021	1,009
2020	194
2019	235
2018	292
2017	311
2016	229
2015	269
2014	145
2013	207
2012	299
2011	173
2010	218
2009	201
2008	242
2007	326
2006	395
2005	307
2004	320
2003	207
2002	161
2001	195

Source: Births in England and Wales from the Office for National Statistics

Notes

1. The cut-off date for the birth registration dataset varied for the years 2020 to 2022 because of the coronavirus pandemic impact on registration delays.

4.3 Birth notification

The birth notification is a document completed by the doctor or midwife present at the birth. It includes information that is not on the birth registration like gestation length and ethnicity of baby. We link birth registrations and birth notifications to produce some of our statistics as it enables us to provide breakdowns by these factors. The registrar also receives birth notification information so they can check whether all births have been registered or not.

The National Health Service Act 2006 (amended in 2013) and National Health Service (Wales) Act 2006, require notification of a birth to the local authority and clinical commissioning group (local health board in Wales) where the birth occurred. This is carried out by the hospital where the birth took place, or by the midwife or doctor in attendance at the birth.

A list of the birth notifications for the sub-district is supplied to the registrar, who will then check whether every birth has been registered. The registrar will also verify each birth registered by checking it is on the health authority list.

Over 99% of birth registrations were successfully linked to the corresponding birth notification. The impact on quality of the statistics is negligible, given the small number of unlinked records. From 2021, a new, more efficient linkage method was implemented. Linkage rate for the new method is well above 99% (Table 2), similar to the previous method.

Table 2: Percentage of birth registration records linked to a notification, England and Wales

Year	Percentage of birth registration records linked to a notification
2024	99.96%
2023	99.95%
2022	99.93%
2021	99.89%
2020	99.91%
2019	99.96%
2018	99.96%
2017	99.95%
2016	99.86%
2015	99.79%
2014	99.90%
2013	99.97%
2012	99.98%
2011	99.39%
2010	99.36%
2009	99.94%
2008	99.98%
2007	99.91%

Source: Births in England and Wales from the Office for National Statistics

4.4 Visitors and overseas registrations

Births to residents of England and Wales that occur outside England and Wales are registered elsewhere and are excluded from our statistics. Births registered in England and Wales to mothers whose usual residence is outside of England and Wales are included in our statistics.

These births are included in total figures for England and Wales but are excluded from any sub-division of England and Wales. However, they are identified as a separate group in area tables (usual residence outside England and Wales).

In recent years, around 6,000 to 7,000 births occurring outside the UK to British nationals have been voluntarily registered annually with British Consulates, British High Commissioners, or HM Armed Forces registration centres. Most of these, however, are likely to be births to women who had emigrated from the UK: that is, had lived outside the UK for at least one year and were not residents of England and Wales. Such persons are not included in birth statistics or population estimates for England and Wales.

At any one time, some women of childbearing age (defined as age 15 to 44 years), usually resident in England and Wales, are temporarily absent overseas. Most of these women are absent for only a short period, so it is unlikely that a large number give birth while overseas. For example, we do know about the number of births to residents of England and Wales that were registered in Scotland and Northern Ireland. Since 2005, there have been about 200 such births each year in Scotland and less than 50 in Northern Ireland.

The number of births to residents of England and Wales occurring outside the country is likely to be similar to the number of births occurring in England and Wales to visitors resident elsewhere. The effect on fertility rates of the difference between the definitions used for birth event numerators and population denominators is assumed to be negligible.

4.5 Abandoned children

Few, if any, details are known about abandoned children and they are not included in birth statistics. However, since 1977, these infants have been included in the Abandoned Children Register maintained at the General Register Office (GRO) in Southport, England. Since 2005, the number of such cases have been extremely low.

4.6 Stillbirths

In Section 41 of the Births and Deaths Registration Act 1953, a stillbirth is defined as "a child which has issued forth from its mother after the 28th week of pregnancy and which did not at any time after being completely expelled from its mother breathe or show other signs of life". This definition was used up to 30 September 1992. On 1 October 1992, the Still-Birth (Definition) Act 1992 came into force, altering the previous definition of a stillbirth to 24 or more weeks completed gestation. Figures for stillbirths from 1993 are not fully comparable with those for previous years. The effect of this change on figures for 1992 is analysed in Birth statistics 1992, series FM1 number 21.

4.7 Births within marriage or civil partnership, and sole and joint registration

Following the implementation of the Human Fertilisation and Embryology Act 2008, same-sex female couples have been able to register the birth of a child as mother and second parent since 1 September 2009. The Act also made provision for two men to be officially recognised as the parents of a child through the provision of a parental order, obtainable through the courts; we do not hold the necessary information to be able to identify such births.

A birth within marriage or civil partnership is that of a child born to parents who were lawfully married or in a civil partnership either:

- at the date of the child's birth
- when the child was conceived, even if they later divorced or were granted a civil partnership dissolution or the second parent died before the child's birth

Births occurring outside marriage or civil partnership may be registered either jointly or solely. A joint registration records details of both parents and requires them both to be present. A sole registration records only the mother's details.

In a few cases a joint registration is made in the absence of the father or second parent if an affiliation order or statutory declaration is provided. Information from the birth registration is used to determine whether the mother and father or second parent jointly registering a birth outside marriage or civil partnership were usually resident at the same address at the time of registration.

Births with both parents at the same address are identified by a single entry for the informant's usual address, while different addresses are identified by two entries.

Because of the small numbers of births registered to same-sex couples, births to same-sex couples in a marriage or civil partnership are grouped with births within marriage or civil partnership, while births to same-sex couples outside of a marriage or civil partnership are included with births outside marriage or civil partnership. The Marriages (Same Sex Couples) Act 2013 enabled same-sex couples to get married in England and Wales from 29 March 2014.

Because of the small numbers of births registered to same-sex couples, births occurring inside or outside marriage or civil partnership are not separated in the tables by whether the parents are the same or opposite sex. The number of live births to same-sex couples is in Table 3.

Table 3: Live births registered to same-sex couples, England and Wales

Year	Live births registered to same-sex couples who are married or in a civil partnership	Live births registered to same-sex couples who are not married or in a civil partnership
2024	1,680	793
2023	1,602	734
2022	1,686	847
2021	1,395	654
2020	1,414	545
2019	1,353	523
2018	1,271	520
2017	1,137	450
2016	1,011	393
2015	881	339
2014	712	277
2013	655	259
2012	556	252
2011	417	191
2010	335	140
2009	22	2

Source: Births in England and Wales from the Office for National Statistics

4.8 Age of parents

The mother's or second parent's date of birth is recorded and translated into the age at the birthday preceding the date of the child's birth. This age is often termed "age last birthday". Detailed checks are carried out on those dates of birth that imply that the age of the mother is over 50 years or under 16 years.

For births registered under the Human Fertilisation and Embryology Act 2008, the age of second parent has been grouped with age of father. Given the relatively small number of births registered to same-sex couples, this has a negligible impact on the statistics.

The method by which missing values for mother's and father's or second parent's age have been imputed changed in 2004. From 2004 until the 2017 data year, if either the mother's date of birth or the father's or second parent's date of birth (where applicable) was not given, and mother's date of birth could not be gained from the birth notification (used from 2007 onwards), an age was imputed. This imputation was discontinued for 2018 data onwards. See Section 3: Issues affecting the quality of birth registration data for further details.

Table 4 shows the percentage of records where parents' dates of birth were not stated at registration. Figures from 2007 onwards show the percentage of records still with no date of birth following birth notification matching. The impact of missing dates of birth on quality of the statistics is negligible, given the small number of records this affects.

Table 4: Percentage of records where parents' dates of birth were not stated at registration (live births and stillbirths), England and Wales

Year	Percentage of records where mother's date of birth not stated, following birth notification matching	Percentage of records where father's or second parent's date of birth not stated (where father's or second parent's details present)
2024	0.01	1.3
2023	0.01	1.2
2022	[low]	1.0
2021	0.01	1.1
2020	0.02	0.6
2019	[low]	0.3
2018	[low]	0.3
2017	0.03	0.3
2016	0.09	1.0
2015	0.09	0.7
2014	0.11	0.9
2013	0.07	0.5
2012	0.04	0.4
2011	0.04	0.4
2010	0.03	0.4
2009	0.08	0.6
2008	0.18	1.1
2007	0.38	2.1
2006	[x]	1.5
2005	[x]	1.2

Source: Source: Births in England and Wales from the Office for National Statistics

Notes

1. [low] = a low figure but not a real zero.

2. [x] = not available.,Births to females in a same-sex couple registered under the Human Fertilisation and Embryology Act 2008 are only included from 2009. Figures prior to 2009 represent where father's date of birth was not stated.

4.9 Country of birth of each parent

The country of birth of each parent for children born in England and Wales has been recorded at birth registration since April 1969. This is coded to country of birth for statistical purposes. The details for country of birth groupings can be found in the Parents' country of birth dataset on the country code listings tab. Birthplace does not necessarily equate with ethnic group and does not imply that someone is a long-term international migrant. More information can be found in our Guidance on using country of birth, nationality, and passports held data methodology.

4.10 Place of birth and area of usual residence

Place of birth is categorised as follows:

- NHS establishments – generally hospitals, maternity units and maternity wings
- non-NHS establishments – including private maternity units, military hospitals and private hospitals
- at home – denoting the usual place of residence of the mother
- elsewhere – including all locations not covered in the other categories: most of these are at a private residence not that of the mother, or are on the way to a hospital

Area of usual residence

A birth is assigned to an area according to the usual residence of the mother at the time of birth, as stated at registration. However, a birth may take place in an area other than that of the mother's usual residence and so an area of occurrence is also assigned.

Births that take place at home or elsewhere are not allocated a health area of occurrence.

Until the 2010 data year, we assigned area of usual residence using a lookup product (the National Statistics Postcode Directory). This product associated postcodes with a number of geographical levels (for example, local authorities and regions). The postcode was allocated to each level of geography using a point-in-polygon methodology. Although this method is spatially accurate, it does not provide the stable building blocks needed for comparing geographies at different levels.

Since the 2011 data year, we have assigned area of usual residence by first linking each postcode to an output area using this same point-in-polygon methodology and then linking to all higher geographies by using a population-weighted, best-fit lookup to output area. This means that postcodes are allocated to a higher geography based on where the output area population weighted centroid lies. This is in line with the Geography Policy for National Statistics.

Switching to the new area allocation method had negligible impact on birth statistics down to local authority level. However, the new method improves comparability of birth statistics for subnational areas over time.

For more information about these methods, see National Statistics Postcode Products. An assessment of this change in methodology was also published in 2013: Assigning life events data to subnational areas: an assessment of a change to the methodology.

Numbers and birth rates by mother's usual area of residence or place of birth are based on boundaries in place when the area derivation was conducted (for example, boundaries for 2019 births are based on the May 2020 National Statistics Postcode Lookup (NSPL)). The postcode of the woman's address at the time of the birth is used to determine the local authority she was living in.

Until the 2016 data year, annual birth statistics by mother's usual area of residence were produced using the boundaries that were in place during the year the birth occurred. For 2017 data onwards, figures produced in annual publications are based on the latest boundaries available at the time of the first release of birth statistics for that year and the same boundaries are used throughout the annual releases, with the exception of the 2020 data year. For 2020 data the first release was delayed but we used the May 2021 NSPL for consistency with previous years and the deaths registration data. All future annual birth statistics and figures produced in ad-hoc publications will be based on the latest boundaries available.

4.11 Multiple births

Multiple births arising from a single pregnancy are counted as one maternity or paternity, although each child born is considered separately in analyses of birth statistics.

4.12 Previous live-born children, true birth order, registration birth order and marital birth order

Prior to May 2012, when a birth was within marriage, the informant was asked for the number of previous children, by the mother's husband and any former husband, for both live births and stillbirths. This allowed determination of the registration birth order. If the number of previous live-born children was not given, a value was imputed from a similar record with completely stated and otherwise matching particulars.

Between 2005 and 2011, the percentage of live births with information on the number of previous live born and stillborn children missing was 0.1% or less.

However, the wording of the question before 2012 meant the number of previous live births was deficient for fertility statistics in three respects:

- at registration, the question on previous live births and stillbirths was not asked where the birth occurred outside marriage or within or outside a civil partnership
- at the registration of births and stillbirths occurring within marriage, previous live births where the woman had never been married to the father were not counted
- because of the ambiguous nature of the question (see Annex A and C) it is possible that births that occurred outside marriage, where the woman subsequently married the father, were not always counted

The proportion of births occurring outside marriage has risen steadily in recent years. Therefore, to account for the problems caused by the way the question was asked up until May 2012, the information collected on birth order at registration was supplemented to give estimates of overall or true birth order (that is, a measure that includes births both within and outside marriage). The supplementary information was obtained from the General Lifestyle Survey (GLF), formerly the General Household Survey (GHS).

Prior to the 2004 volume of Birth statistics, information from the GHS surveys from 1986 to 1996, 1998 and 2000 was used to produce the estimates of true birth order. In the 2004, 2005 and 2006 volumes, additional information from the GHS for the years 2001 to 2003 was incorporated. For the 2007 and 2008 volumes and the 2009, 2010 and 2011 births releases, this information has been further supplemented by incorporating GHS or GLF data from the 2004 to 2006 surveys. The method of estimation is described in a Population Trends article.

Amendments to the Population (Statistics) Act (PSA) 1938 meant that from May 2012, information is now collected at all birth registrations on the total numbers of previous live births and previous stillbirths that the mother has had (not just those with the current or former husband). This has simplified the question asked by registrars and provides improved coverage. These changes mean that true birth order can now be obtained directly from the birth registration.

The differences between how a hypothetical mother might have answered the question before and after the amendments to the PSA are shown to illustrate.

Hypothetical birth history scenario to illustrate the problems that the question on previous children may have caused before the amendments to the Population (Statistics) Acts

- actual birth history: 1st birth while cohabiting with man A
- how birth order is likely to have been recorded since the amendments to the PSA: 1; the mother will say she's had no previous children, so this would be treated as the first birth
- how birth order may have been recorded in the data before the amendments to the PSA: the mother wouldn't have been asked about previous children as this birth did not occur within marriage
- actual birth history: 2nd birth while married to man B
- how birth order is likely to have been recorded since the amendments to the PSA: 2
- how birth order may have been recorded in the data before the amendments to the PSA: 1; the mother is likely to have answered that she's had no previous children to her current husband or a previous husband, so this would be treated as the first birth
- actual birth history: 3rd birth while cohabiting with man C
- how birth order is likely to have been recorded since the amendments to the PSA: 3
- how birth order may have been recorded in the data before the amendments to the PSA: the mother wouldn't have been asked about previous children as this birth did not occur within marriage
- actual birth history: 4th birth after marriage to man C
- how birth order is likely to have been recorded since the amendments to the PSA: 4
- how birth order may have been recorded in the data before the amendments to the PSA: the mother is most likely to have answered that she had two previous children with either her current husband or a previous husband (that is, her second and third children), so this would be treated as the third birth

We expect that the way the question has been asked since the amendments to the PSA captures "true birth order". The way the question was asked before the amendments to PSA captures what we call "registration birth order". For information, we also define "marital birth order" in some statistics – this is slightly different again; in the previous example there would have been two births while married, the first being birth two and the second being birth four.

An article describing the changes that have occurred to our birth statistics as a result of improvements to the Population (Statistics) Act is available. It provides background to the changes and provides high-level findings from the new data collected in 2012 and 2013.

An investigation of Childbearing by registration status in England and Wales, using birth registration data for 2012 and 2013 examines the patterns and characteristics in birth registrations following the improvements to the data collected at birth registration. The principal characteristics explored in the article relate to whether a woman has previously been married and whether the birth is the mother's first child or subsequent child.

4.13 Birth intervals

Figures showing median birth intervals are available in Birth characteristics. The median intervals between first, second, third and fourth births are derived by HM Revenue and Customs (HMRC) from a 100% extract (5% sample for estimates up to and including 2006) of new claims for Child Benefit from all births occurring in the UK, whether within or outside marriage. A zero interval is assumed for births resulting from a multiple maternity.

4.14 Gestation

Gestational age is measured in completed weeks. For stillbirths, gestation is recorded at birth registration and is therefore available on our annual birth registration datasets. For live births, gestation is recorded on the birth notification but not at birth registration. For this reason, gestation for live births is not available on our annual birth registration datasets but is available on our annual linked births dataset where birth registrations have been linked to birth notifications.

Gestational age is highly correlated with birthweight. For gestational age recorded as less than 22 weeks, this was considered as valid if there was a plausible birthweight (less than 1,000 grams); a separate category was created for gestational age less than 22 weeks and inconsistent birthweight (1,000 grams or more), which is reported separately. Gestational age is grouped as follows:

Notes

1. A stillbirth is a baby born after 24 or more weeks completed gestation and which did not, at any time, breathe or show signs of life.

4.15 Birthweight

Birthweight is measured in grams. For live birth registrations received on the Registration Online System (RON), birthweight is passed electronically to us from the notification by the midwife or doctor in attendance at the birth. These details are then supplied to the registrar. For stillbirths, details of the weight of the foetus are supplied on a certificate by a doctor or midwife. The certificate is then taken by an informant to the registrar. If the birthweight is missing, but the registration is linked to the birth notification then the birthweight from the notification is taken.

In cases where no birthweight is recorded, the birth is included in the total "all weights" but not distributed among the individual categories. In 2020, the methodology towards birthweights was adjusted. From the 2019 data year onwards, implausible birthweights have been removed from individual categories but are included in the total "all weights". Assessment of what was implausible was based on the recorded birthweight and gestational age. A birthweight was considered implausible when:

- a liveborn male weighed less than 230 grams or greater than 6,000 grams
- a liveborn female weighed less than 249 grams or greater than 6,000 grams
- a stillborn male or female weighed less than 230 grams or greater than 6,000 grams

The removal of implausible birthweights was to increase the accuracy of our birthweight statistics. The impact on quality of the statistics is negligible given the small number of records this affects. Table 5 provides figures for records where no birthweight was recorded.

Table 5: Percentage of births where birthweight was not recorded, England and Wales

Year	Percentage of all live births where birthweight was not recorded	Percentage of all stillbirths where birthweight was not recorded
2024	0.0	0.0
2023	0.1	0.0
2022	0.1	0.0
2021	0.1	0.0
2020	0.2	0.1
2019	0.1	0.0
2018	2.1	0.5
2017	1.8	0.3
2016	1.7	0.7
2015	1.5	0.7
2014	1.5	0.4
2013	1.0	0.5
2012	0.8	0.3
2011	0.9	0.5
2010	1.0	0.2
2009	0.7	1.1
2008	0.8	0.7
2007	1.1	2.6
2006	0.9	3.0
2005	0.4	1.6

Source: Births in England and Wales from the Office for National Statistics

Notes

1. Prior to the 2019 data year implausible birthweights were treated as birthweights that had not been recorded. From the 2019 data year onwards implausible birthweights are not included in the percentages.

4.16 Duration of marriage or civil partnership

At registration only the month and year of marriage or civil partnership are recorded, so the calculation relates to the interval in completed months between the middle of the month of marriage or civil partnership and the date of the child's birth.

Prior to March 2018, if the date of marriage or civil partnership was not given, a value for the duration was imputed from a similar record with completely stated and otherwise matching particulars. Imputation was discontinued in March 2018 to make processing more efficient but maintain accuracy. Since 2008, the percentage of all live births with a missing date of marriage or civil partnership has been around 1%.

For women who have been married or formed a civil partnership more than once, duration refers to the length of the current marriage or civil partnership.

4.17 Birth cohorts

Birth statistics analysed by year of occurrence and by age of mother have been available since 1938. The tables in the Childbearing for women born in different years package (formerly known as Cohort fertility) show these statistics in cohort form: by the year of birth of the mother rather than the year of birth of the child.

The year of birth of the mother is by necessity approximate because, prior to 1963, data are available only by calendar year of occurrence and age of mother at childbirth. For instance, women aged 32 years giving birth to children in 2012 could have been born in either 1979 or 1980; for convenience however, such women are regarded as belonging to the 1980 cohort. Tables refer to age in exact years.

4.18 Socio-economic classification as defined by occupation

Information on occupation of the mother or father is coded for only a sample of 1 in 10 live births. Combining this with the employment status, a code for socio-economic classification (or social class in previous volumes) may be derived.

From 1991 to 2000, occupation was coded using the Standard Occupational Classification (SOC): SOC 1990 and occupation codes were allocated to the Registrar General's Social Class. Since 2001, the National Statistics Socio-economic Classification (NS-SEC) has categorised the socio-economic classification of people.

The Standard Occupational Classification is revised every 10 years and in 2011 SOC 2010 replaced SOC 2000. A report outlining the impact of re-basing the NS-SEC on SOC 2010 is available. In 2021, SOC 2020 replaced SOC 2010 and a report outlining the impact of rebasing the NS-SEC on SOC 2020 is available.

NS-SEC has eight analytic classes:

1. higher managerial, administrative, and professional occupations
2. lower managerial, administrative, and professional occupations
3. intermediate occupations
4. small employers and own-account workers
5. lower supervisory and technical occupations
6. semi-routine occupations
7. routine occupations
8. never worked and long-term unemployed

Students, occupations not stated or inadequately described and occupations not classifiable for other reasons are added as "not classified".

The reduced method for deriving NS-SEC is used for reporting NS-SEC in birth statistics.

From the 2012 data year, we have used the combined method for reporting NS-SEC for birth statistics. This uses the most advantaged NS-SEC of either parent and creating a household level classification rather than just using the father's classification. The combined method means that sole-registered births where information on the father is not available are now included in published birth statistics by NS-SEC.

Following this change, the publication Births by socio-economic status of father was discontinued and a new set of NS-SEC tables were published in the Births by parents' characteristics dataset. Now that this dataset has been discontinued, this information can be found in our Births in England and Wales bulletin.

Up until the 2011 data year, live birth statistics by NS-SEC used the father's NS-SEC. Historically, the decision to use the father's NS-SEC was based on the premise that many mothers either do not have a paid occupation or choose not to state their occupational details at birth registration.

The sample figures in tables are weighted to agree with known totals derived from the 100% processing of birth registrations by mother's age and previous live-born children. This ensures consistency with sub-totals in the same table and improves the quality of sample estimates. Numbers of live births for each NS-SEC class and age group may differ between tables because of the method used to weight the 10% sample.

For example:

Appendix Tables 1 and 2 published alongside the NS-SEC tables show standard errors for selected numbers of births and percentages. If the estimated weighted number in a particular category was 50,000, then the standard error of that estimate would be approximately 640.

Based on statistical theory, this means that for the type of distribution being considered there is about a 95% chance that the "true" number in the population lies within two standard errors of the estimates. This true number is that which would have been obtained had all the information been collected, rather than a 1 in 10 sample.

In this example, the 95% confidence interval would be:

50,000 ± (plus or minus) 1,300, or 48,700 to 51,300.

In other words, we could say that we are 95% confident that the true value, if we had collected all the information instead of 10%, lies somewhere between 48,700 and 51,300.

4.19 Ethnicity

Up until 2019, ethnic groups were divided into nine categories:

- Bangladeshi
- Indian
- Pakistani
- Black African
- Black Caribbean
- White British
- White Other
- All Others
- Not Stated

In datasets for the year 2019 and earlier, those with "English", "Scottish", "Welsh" and "Northern Irish" ethnicity were included in the "White Other" category.

In datasets for the year 2020 and later, ethnic groups are divided into 12 categories:

- Bangladeshi
- Indian
- Pakistani
- Any other Asian background
- Black African
- Black Caribbean
- Any other Black background
- Mixed and multiple ethnic group
- Any Other ethnic group
- White British
- White Other
- Not Stated

Since the change, those with "English", "Scottish", "Welsh" and "Northern Irish" ethnicity are included in the "White British" category.

5 . Figures for UK countries and international comparisons

comparisons

Separate statistics for Scotland and Northern Ireland are published as follows:

- Scotland: in the Vital Events Reference Tables for Scotland
- Northern Ireland: in the Annual Report of the Registrar General for Northern Ireland

A summary of birth statistics for the UK and constituent countries is published in our Vital statistics in the UK: births, deaths and marriages. These contain annual data including the number of births, crude birth rate, total fertility rate and mean age of mother. The tables also provide an international comparison of the crude birth rate.

Following our consultation on statistical products in 2013, the provisional quarterly birth statistics for the UK and its constituent countries in the Vital Statistics: Population and Health Reference Tables were discontinued (last published February 2014).

Eurostat and the United Nations Statistics Division, among others, use our birth statistics; for example, to monitor progress towards global indicators as part of the UN's Sustainable Development Goals.

Statistics for Europe are published by Eurostat. Statistics for United Nations member countries appear in the United Nations monthly bulletin of statistics and the annual UN Demographic Yearbook.

6 . Calculating birth and fertility rates

Fertility rates are calculated using the most up-to-date consistent mid-year estimates of the female population, when the data are released.

The most commonly used rates are described in this section.

Crude birth rate

This is the simplest overall measure of fertility in the population, given by the number of live births in a year per 1,000 mid-year population. It takes no account of the composition of the population, in particular the age and sex distribution. It is given by:

$$(B/P) \times 1,000$$

$$\text{where B equals total live births in the year, and}$$

$$\text{P equals mid} - \text{year population}$$

General fertility rate (GFR)

This is an easily calculated measure of current fertility levels and denotes the number of live births per 1,000 women aged 15 to 44 years. However, it makes no allowance for different numbers of women at different childbearing ages. It is given by:

$$B/P^{f}_{15-44} \times 1,000$$

$$\text{where B equals total live births in the year, and}$$

$$P^{f}_{15-44} \text{ equals female population aged 15 to 44 years}$$

Age-specific fertility rates (ASFRs)

ASFRs are a measure of fertility specific to the age of the mother or father and are useful for comparing the reproductive behaviour of women or men at different ages. They are calculated by dividing the number of live births to mothers or fathers of each age group by the number of females or males in the population of that age and then expressed per 1,000 females or males in the age group.

ASFRs can be calculated for single ages but are usually calculated for five-year age groups in the reproductive age ranges, which are aged 15 to 44 years for mothers and aged 15 to 64 years for fathers. Live births for those younger or older than the reproductive age range are included with the youngest or oldest age groups, respectively. They provide the basis for a detailed analysis of fertility levels by age at the time of birth. The ASFR based on five-year age groups is given by:

$$F_a = (B_a / P_a) \times 1,000$$

$$\text{where :}$$

$$\mathrm{F_a} = \text{age} - \text{specific fertility rate for mothers (or fathers) in age } \textit{group}\ \mathrm{a},$$

$$\mathrm{B_a} = \text{live births for mothers (or fathers) in age group a},$$

$$\mathrm{P_a} = \text{female (or male) population in age group a},$$

$$\mathrm{a} = \text{age group for mothers : under } 20, 20 \text{ to } 24, \ldots, 35 \text{ to } 39, 40 \text{ years and over;}$$

$$\text{or age group for fathers : under } 20, 20 \text{ to } 24, \ldots, 55 \text{ to } 59, 60 \text{ years and over.}$$

For the mothers groups aged under 20 years, and 40 years and over, the female populations used are females aged 15 to 19 years and females aged 40 to 44 years, respectively. For the fathers groups aged under 20 years, and aged 60 years and over, the male populations used are males aged 15 to 19 years and males aged 60 to 64 years, respectively.

Standardised mean age (SMA)

The standardised mean (average) age for mother or father (for example, at birth or marriage) is a measure that eliminates the impact of any changes in the distribution of the population by age, allowing trends over time to be analysed.

The standardised mean age is calculated by multiplying the single year age-specific fertility rates (ASFR) by the single year of age, summing across all reproductive ages, and then dividing by the sum of the single year ASFR across all reproductive ages. It is given by:

$$\left(\sum_{A_R} (A \times F_A) / \sum_{A_R} F_A \right) + 0.5$$

$$\text{Where } \mathrm{A_R} \text{ is the age range for reproductive years defined as aged}$$

$$15 \text{ to } 44 \text{ years for mothers and aged } 15 \text{ to } 64 \text{ years for fathers, and}$$

$$\mathrm{F_A} \text{ is the age} - \text{specific ferility rate for single years of age A, given as :}$$

$$F_A = (B_A / P_A) \times 1,000$$

$$\text{where :}$$

$$\mathrm{B_A} = \text{live births for mothers (or fathers) at age A},$$

$$\mathrm{P_A} = \text{female (or male) population at age A},$$

$$\mathrm{A} = \text{single year of age of mother (or father)}$$

Since the ages used are discrete variables representing completed years and mean age is a continuous variable, an additional 0.5 year is added to derive the SMA. This final adjustment reflects the fact that the actual age for all individuals who have completed X years is actually X plus 0.5 years.

Live births for those younger or older than the reproductive age range are included with the youngest or oldest ages in the range. For example, live births to mothers aged under 15 years are grouped with those aged 15 years and, mothers aged over 44 years are grouped with those aged 44 years.

Estimating age of fathers for sole birth registrations

Age of father is collected at birth registration for all births within marriage and for births outside marriage which are jointly registered. To derive male fertility measures for all fathers, age of fathers for births outside marriage registered solely by the mother needs to be estimated. The proportion of sole registrations varies by age of mother, with the highest proportion of sole registrations occurring among those aged under 20 years.

To estimate the age of father for sole registrations, it is assumed that for each age of mother, a suitable distribution of father's age can be provided by births outside marriage which are jointly registered. A separate "father's age distribution" is therefore calculated for each age of mother (single years) for all births outside marriage which are jointly registered.

These distributions are then applied to the number of sole registered births by each age of mother. Applying a separate "father's age distribution" for each age of mother accounts for any differences between the age of mothers for sole and jointly registered births.

Total fertility rate (TFR)

National TFRs are derived by summing single-year ASFRs over all ages within the childbearing lifespan. TFRs at geographies below national level (that is, regions, counties, local authorities and health boards) have been calculated by summing five-year ASFRs for all ages and then multiplying by five (this method gives more robust TFRs for areas with small populations).

The TFR is a measure independent of variations in the age distribution of women of childbearing age. It may be interpreted as representing the completed fertility of a synthetic cohort of women, that is, the average number of live children that a group of women would have if they experienced the age-specific fertility rates for the calendar year in question throughout their childbearing lifespan.

The national level TFRs are given by:

TFRs at geographies below national level are given by:

For national TFRs the ages used are under 16 years, 16, 17, ... , 42, 43, 44 years and over. For the age groups under 16 years and 44 years and over the female populations used are women aged 15 years and 44 years, respectively.

For subnational TFRs the ages used are under 20 years, 20 to 24, ... , 35 to 39, 40 years and over. For the groups under 20 years and 40 years and over the female populations used are women aged 15 to 19 years and women aged 40 to 44 years, respectively.

Stillbirth rate

The stillbirth rate is defined as the number of stillbirths per 1,000 live births and stillbirths. It is given by:

Sex ratio

Expressed as males per 1,000 females, it is most often used for live births, but also for stillbirths.

Other rates

Other rates used include:

- live births within marriage or civil partnership per 1,000 married women, by age of mother
- live births within marriage or civil partnership per 1,000 married men, by age of father
- live births outside marriage or civil partnership per 1,000 single, widowed and divorced women, by age
- live births outside marriage or civil partnership per 1,000 live births
- maternities within marriage or civil partnership per 1,000 married men, by age
- stillbirths within marriage or civil partnership per 1,000 married men, by age
- maternities with multiple births per 1,000 total maternities, by age

7 . Historical information

The formal registration of live births commenced on 1 July 1837, while stillbirths have been registered only since 1 July 1927. Confidential particulars for statistical purposes have been collected since 1 July 1938, under the Population (Statistics) Act of that year. From the later date, it has also been possible to routinely distinguish multiple births.

The Population (Statistics) Act 1960, effective from 1 January 1961, added a question on father's date of birth to the confidential particulars requested in the case of births within marriage. This applied also to births outside marriage where the father's name is entered in the register.

In 1938, when the Population (Statistics) Act came into force, information on the number of previous children with a current or former husband and the mother's marital status history was only collected for birth occurring within marriage. However, in May 2012, amendments were made so the legislation reflected the reality of modern society. Information is now collected at all birth registrations on the total number of previous births that the mother has had (not just those with the current or former husband). Information is now also collected at all birth registrations on whether the mother has ever or has previously been married or in a civil partnership. These changes bring the birth registration process more in line with equality legislation.

Questions on father's and mother's place of birth were introduced on 1 April 1969 by the Registration of Births, Deaths and Marriages Regulations 1968.

When the Statistics and Registration Service Act 2007 came into force on 1 April 2008, the National Statistician was no longer the Registrar General for England and Wales and the General Register Office (GRO) separated from the Office for National Statistics (ONS). The Statistics Board is the legal successor to ONS and among other things undertakes the former statistical functions of the Registrar General. The responsibility for the production of birth statistics is now a function of the UK Statistics Authority (the preferred name for the Statistics Board), which is required to produce an annual abstract of birth statistics in order that the Minister for the Cabinet Office can lay it before Parliament.

8 . Legislation

The existing provisions for the registration of births and the processing, reporting and analysis of births data appear in different legislation that reflects the distinct and separate roles of the Registrar General for England and Wales and the UK Statistics Authority.

The Registrar General is guided by the following.

The Welfare and Reform Act 2009, which amends the Population (Statistics) Act 1938, enabling data to be collected for all women (not just married women) on the number of previous children and whether the mother had been previously married.

The Human Fertilisation and Embryology Act 2008, which gave provision for same-sex female couples to jointly register the birth of a child as mother and parent; it also allows for two men to obtain a parental order through the courts to be officially registered as the parents of a child post-registration.

The National Health Service Act 2006 (amended 2013) and National Health Service (Wales) Act 2006, which consolidate legislation relating to the health service and separate provision of the health service in Wales from that in England; the Acts require notification of a birth to the local authority and clinical commissioning group (local health board in Wales) where the birth occurred; both Acts include provisions both for the supply of information about birth notifications by the National Health Service (NHS) to the Registrar General and the supply of information on individual registered births by the Registrar General to the NHS.

The Still-Birth (Definition) Act 1992, which altered the definition of a stillbirth to 24 or more weeks completed gestation, instead of the previous definition of 28 or more weeks completed gestation.

The Population (Statistics) Act 1960, which makes further provision for collecting statistical detail at registration.

The Population (Statistics) Act 1938, which deals with the statistical information collected at registration.

The Births and Deaths Registration Act 1953, which covers all aspects of the registration of births and stillbirths.

The UK Statistics Authority is guided by the following.

The Statistics and Registration Service Act 2007, which transfers some of the statistical functions of the Registrar General including the production of an annual abstract to the UK Statistics Authority and the Office for National Statistics (ONS) becomes the executive office of the UK Statistics Authority; simultaneous changes resulted in the General Register Office, of which the Registrar General is the head, becoming part of the Identity and Passport Service (now Her Majesty's Passport Office) and the National Health Service Central Register (NHSCR) transferring to the NHS Information Centre for Health and Social Care (now NHS Digital).

The Act also provides the Registrar General with a power to allow the disclosure of any information about a birth or stillbirth to the UK Statistics Authority for statistical purposes; it also enables the UK Statistics Authority to produce and publish statistics relating to any matter.

The Registration Service Act 1953, which in section 19 requires the UK Statistics Authority to provide annual abstracts of live births and stillbirths.

9 . Release commentary and other relevant articles

We provide commentary for releases in statistical bulletins published on our website.

Between 1998 and 2009 (2008 data year for births), commentary appeared as reports issued in the quarterly journal Population Trends. Conceptions reports appeared in Health Statistics Quarterly.

Up to 1997 (1996 data year for births), we published annual reports summarising patterns and trends, in the annual reference volume Series FM1, for conceptions and live births. These contained basic commentary on annual conceptions and live birth registrations.

Some other relevant articles and publications are:

1. Office for National Statistics (ONS) (2016), Fertility Assumptions, 2014-based National Population Projections

2. ONS (2015), How do parental age differences vary for births registered in England and Wales, 2013?

3. ONS (2014), International comparisons of teenage births

4. ONS (2014), Childbearing by registration status in England and Wales, using birth registration data for 2012 and 2013

5. ONS (2014), Childbearing of UK and non-UK born women living in the UK, 2011 Census data

6. ONS (2013), Why has the fertility rate risen over the last decade in England and Wales

7. ONS (2012), Childbearing of UK and Non-UK Born Women Living in the UK, 2011

8. ONS (2012), National Population Projections 2010-based (series PP2), Chapter 3: Fertility

9. Messer J (2011), An analysis of the socio-demographic characteristics of sole registered births and infant deaths, Health Statistics Quarterly 50, pages 79 to 107

10. Ni Bhrolchain M, Beaujouan E and Berrington A (2010), Stability and change in fertility intentions in Britain, 1991-2007, Population Trends 141, pages 13 to 35, Autumn 2010

11. O'Leary L, Natamba E, Jefferies J and Wilson B (2010), Fertility and partnership status in the last two decades, Population Trends 140, pages 5 to 35, Summer 2010

12. Tromans N, Natamba E and Jefferies J (2009), Have women born outside the UK driven the rise in UK births since 2001? Population Trends 136, pages 28 to 42, Summer 2009

13. ONS (2009). Patterns of fatherhood in England and Wales, 1964 to 2007 (PDF, 1.69MB), Population Trends 136, pages 103 to 107, Summer 2009

14. Jefferies J (2008), Fertility assumptions for the 2006-based national population projections, Population Trends 131, pages 19 to 27, Spring 2008

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19. Chamberlain J and Gill B (2005), Chapter 5: Fertility and Mortality, Focus on People and Migration Palgrave Macmillan: Basingstoke, pages 71 to 90

20. Rendall M, Couet C, Lappegard T, Robert-Bobée I, Rønsen M and Smallwood S (2005), First births by age and education in Britain, France and Norway. Population Trends 121, pages 27 to 34, Autumn 2005

21. Smallwood S and Chamberlain J (2005), Replacement fertility, what has it been and what does it mean? Population Trends 119, pages 116 to 127, Spring 2005

22. Berrington A (2004), Perpetual postponers? Women's, men's and couple's fertility intentions and subsequent fertility behaviour. Population Trends 117, pages 9 to 19, Autumn 2004

23. Smallwood S (2004), Characteristics of sole registered births and the mothers who register them. Population Trends 117, pages 20 to 26, Autumn 2004

24. Smallwood S and Jefferies J (2003), Family building intentions in England and Wales: trends, outcomes and interpretations. Population Trends 112, pages 15 to 28, Summer 2003

25. Donkin A, Lee Y and Toson B (2002), Implications of changes in the UK social and occupational classifications in 2001 for vital statistics. Population Trends 107, pages 23 to 29, Spring 2002

10 . Further information

Special extracts and tabulations of births 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 via email to Health.Data@ons.gov.uk or by telephone on +44 1329 444110. User requested data will be published on our website.

Births data are available in our Secure Research Service (SRS) and the UK Data Service secure lab; this provides access to microdata and disclosive data, which have the potential to identify individuals. Access to such data requires Approved Researcher accreditation.

We welcome feedback on the content, format and relevance of releases. Please send feedback to Health.Data@ons.gov.uk.

11 . Glossary

Age-specific fertility rate (ASFR)

The number of live births to mothers or fathers of a particular age per 1,000 women or men of that age in the population. Useful for comparing fertility of women or men at different ages, or women or men of the same age in different populations.

Average family size

Average family size represents the number of births each woman has achieved by a specified age, for a cohort of women (such as, women born in a particular year).

Canadian Census Edit and Imputation System (CANCEIS)

A donor-based imputation system, developed by Statistics Canada, used to impute missing values for Population (Statistics) Act data items for birth records since 2004.

Civil partnership

A civil partnership is a legal relationship which can be registered by two people who are not related to each other. Civil partnerships are available to both same-sex couples and opposite-sex couples.

Code of Practice for Statistics

The principles and protocols followed and upheld by all those involved in producing National Statistics.

Cohort

A specific group of people, in this case, those born during a particular year. Analysis using cohorts considers the experience of that group of people over time.

Cohort fertility measures

Fertility measures based on women born in particular years.

Country of birth

The country in which a person was born.

Crude birth rate

The number of live births in a year per 1,000 mid-year population.

Dissolution

A dissolution is a legal end to a civil partnership obtained through the courts.

General fertility rate (GFR)

The number of live births in a year per 1,000 women aged 15 to 44 years. Measure of current fertility levels.

General Household Survey (GHS)

The GHS is a continuous survey carried out by the Office for National Statistics, collecting information on a range of topics from people living in private households in Great Britain. Now known as the General Lifestyle Survey (GLF).

General Lifestyle Survey (GLF)

Formerly known as the General Household Survey (GHS).

General Register Office (GRO)

The GRO is responsible for ensuring the registration of all births, deaths, marriages and civil partnerships that have occurred in England and Wales and for maintaining a central archive.

Informant

The person(s), normally one or both parents, who provide the registrar with the information required at the registration of a birth.

Imputation

A method used to add information to an incomplete birth record, using the details from another similar but complete record.

Joint registration

A birth outside marriage or civil partnership registered by both the mother and father or second parent of the child. Both parents' details are recorded and both must be present at the registration.

Live birth

A baby showing signs of life at birth.

Maternity

A pregnancy resulting in the birth of one or more live-born or stillborn children. Therefore, the number of maternities (and paternities) is less than the total number of live births and stillbirths.

Maternity rate

The number of maternities per 1,000 women aged 15 to 44 years.

Mean

A common measure of the average. The values are summed and then divided by the total number of observations.

Median

Statistical term for the value for which half the data are above and half are below. An alternative measure of the average to the mean.

Multiple birth

A single maternity resulting in two or more births.

Multiple maternity rate

The number of single maternities resulting in two or more births per 1000 maternities.

Notification

A document completed by the doctor or midwife present at the birth. The notification provides certain data items, such as the birthweight, to the birth record.

National Statistics Socio-economic Classification (NS-SEC)

Categorises the socio-economic classification of people and has replaced the Registrar General's Social Class and the Socio-economic Group (SEG).

Occurrences

Births that occur in a given period, for example, a calendar year.

ONS

Office for National Statistics (ONS). Since 1 April 2008, the ONS is the executive arm of the UK Statistics Authority.

OPCS

Office of Population Censuses and Surveys joined with Central Statistical Office in 1996 to become the ONS.

Parity

The number of live births a woman has had. A woman who has one child has a parity of one. See previous live-born children and true birth order.

Period fertility measures

Fertility measures relating to a particular time period, to provide a snapshot of fertility at that time.

Place of birth

Place where a birth occurs.

Population (Statistics) Act (PSA)

This Act makes provision for certain information to be collected at the registration of a birth for statistical use. This information is confidential and is not entered on the register.

Ratio

A measure of the relative size of two variables.

Registrar

Local authority employee responsible for the registration of births, deaths, marriages and civil partnerships.

Registrar General

Statutory appointment with responsibility for the administration of the Registration Acts in England and Wales and other related functions as specified by the relevant legislation.

Registration birth order

The number assigned to a birth based on the number of previous live births to that mother, not just those with the current or former husband.

Registration Officer

Generic term for registrar, superintendent registrar and additional registrars.

Registrations

Births that were registered in a particular period, even though some may have occurred in an earlier period.

Replacement level

Replacement fertility is the level of fertility required for the population to replace itself in size in the long term. In the UK, women would need to have, on average, 2.08 children to ensure long-term "natural" replacement of the population.

RON

Registration Online. A web-based system that enables registrars to record births, stillbirths, deaths, marriages and civil partnerships online. From July 2009, all birth registrations have been recorded on RON.

RSS

Registration Service Software. System of collecting data electronically at the registration of a birth or a death. Used prior to the introduction of RON. Since July 2009, this system has been obsolete.

Single men or women

Persons who have never been married or formed a civil partnership.

Singleton

Only birth born in a maternity.

Standard Occupational Classification 2010 (SOC 2010)

The current occupational classification. SOC 2010, details of employment status and size of organisation are required for the derivation of NS-SEC.

Sole registration

A birth outside of marriage or civil partnership registered only by the mother. No information on the father is recorded.

Standard error

A measure of the sampling variation occurring by chance when only part of the total population has been selected for analysis. For example, father's occupation is coded on only 10% of live birth records.

Standardised mean age

The standardised mean (average) age (for example, at birth or marriage) is a measure that eliminates the impact of any changes in the distribution of the population by age and therefore enables trends over time to be analysed. Standardised means are calculated using rates per 1,000 female population by single year of age of mother.

Stillbirth

A stillbirth is a baby born after 24 or more weeks completed gestation and which did not, at any time, breathe or show signs of life. On 1 October 1992 the Still-Birth (Definition) Act 1992 changed the legal definition of a stillbirth to 24 or more weeks completed gestation, instead of 28 or more weeks completed gestation.

Stillbirth rate

The stillbirth rate is defined as the number of stillbirths per 1,000 live births and stillbirths.

Superintendent Registrar

Local authority employee with responsibilities relating to marriage and other registration functions, as specified in the relevant legislation.

Total fertility rate (TFR)

The TFR is the average number of live children a group of women would have if they experienced the age-specific fertility rates for the calendar year in question throughout their childbearing lifespan.

True birth order

The number assigned to a birth based on the number of previous live births to that mother, counting all births inside or outside of marriage up to the fourth birth. Fifth births and higher are not included in the true birth order.

UK Statistics Authority

The UK Statistics Authority is an independent body operating at arm's length from government as a non-ministerial department, directly accountable to Parliament. It was established on 1 April 2008 by the Statistics and Registration Service Act 2007.

Unstandardised mean age

The average age (for example, at birth or marriage) of the population in question, calculated as the actual average for a particular year. Comparisons of unstandardised mean ages are affected by changes in the structure of the population by age, marital status and parity. This measure should only be used when requiring a mean for a particular year. Unstandardised means are calculated using only numbers of births by single year of age of mother.

12 . Cite this methodology

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