

# Information paper

## Quality and Methodology Information

### General details

Title of output:	Birth statistics
Abbreviated title:	Births
Designation:	National Statistics
Geographic coverage:	England and Wales
Date of last SQR or QMI*:	July 2015
Contact details:	vsob@ons.gsi.gov.uk

### Executive summary

Birth statistics represent births that occur and are then registered in England and Wales. Figures are compiled from information supplied when births are registered as part of civil registration, a legal requirement.

Annual data are released in a series of themed packages, usually between July and December. Information on different packages is covered under the Relevance section.

Annual birth statistics for the UK and its constituent countries are published in the [Vital statistics: population and health reference tables](#).

Birth statistics are based on the number of births occurring in a given year. More information on processing is available in our [User Guide to Birth Statistics](#).

This document contains the following sections:

- Output quality
- About the output
- How the output is created
- Validation and quality assurance
- Concepts and definitions
- Other information, relating to quality trade-offs and user needs
- Sources for further information or advice

### Output quality

This document provides a range of information that describes the quality of the data and details any points that should be noted when using the output.

We have developed [Guidelines for measuring statistical quality](#); these are based upon the 5 European Statistical System (ESS) quality dimensions. This document addresses these quality dimensions and other important quality characteristics, which are:

- Relevance
- Timeliness and punctuality
- Coherence and comparability

---

\* “Quality and Methodology Information” (QMI) replaced “Summary Quality Reports” (SQR) from April 2011

- Accuracy
- Output quality trade-offs
- Assessment of user needs and perceptions
- Accessibility and clarity

More information is provided about these quality dimensions in the sections below.

## About the output

### Relevance

(The degree to which statistical outputs meet users' needs.)

Birth registration is a legal requirement under the Births and Deaths Registration Act 1836. The registration of births occurring in England and Wales is a service carried out by the Local Registration Service in partnership with the General Register Office (GRO). Information collected at birth registration is recorded on the Registration Online (RON) system by Registrars. Most of the information is usually supplied by the parent(s). For live births, details of the birthweight are passed to us from the NHS birth notification.

Annual birth outputs represent births occurring in England and Wales in a given year. A package containing summary tables is released in July, with supporting commentary in a statistical bulletin. More detailed figures are then released between August and December in a series of themed packages. Each package consists of a number of data tables; these are generally accompanied by a statistical bulletin. Our tables provide the latest year's figures with some also showing historical data for comparison, sometimes back to 1837.

There are 6 published packages.

[Birth summary tables](#): includes the number of live births and stillbirths, fertility rates, percentage of live births outside marriage/civil partnership, mean age of mother and percentage of live births to non-UK born mothers for England and Wales as a whole. Live births (number and rate) and the number of stillbirths are also provided down to local authority level.

[Parents' country of birth](#): includes births by country of birth of mother and total fertility rates for UK born and non-UK born women for England and Wales as a whole. Summary figures are also available down to local authority level. 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.

[Birth characteristics](#): contains statistics on stillbirths and maternities for England and Wales, birthweight data for live and stillbirths by mother's region of usual residence, and live births and stillbirths in hospitals and communal establishments by region of occurrence. These tables also provide figures on month and quarter of occurrence, place of birth, ethnicity and gestational age and multiple births for England and Wales as a whole. Prior to the 2014 data year, these figures were published in [Characteristics of Birth 1](#) and [Characteristics of Birth 2](#)).

[Births by area of usual residence](#): provides summary data for live births down to local authority level including figures by age of mother – figures are published using boundaries in place during the year the birth occurred.

[Births by parents' characteristics](#): provides live birth, stillbirth and maternity statistics by age of mother and type of registration (within marriage/civil partnership, joint, sole). It also provides data on previous live-born children, National Statistics Socio-Economic Classification (NS-SEC), median birth intervals, age-specific fertility rates for men and mean age of fathers. All tables are for England and Wales as a whole with no subnational breakdown. Prior to the 2014 data year, these figures were published in [Characteristics of mother 1](#), [Characteristics of mother 2](#) and [Further parental characteristics](#). Prior to the 2012 data year, live births by NS-SEC of father were found in [Births by socio-economic status of father](#).

[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.

To aid with user interpretation, we also publish [an interactive fertility mapping tool](#), which enables users to analyse trends in fertility by county district and unitary authority.

Prior to the 2009 data year, detailed birth figures for England and Wales were published in December in the annual reference volume [FM1: birth statistics](#). This volume has now been discontinued.

Birth statistics do not include births to women usually resident in England or Wales who give birth abroad. They do include births to women whose usual residence is outside England and Wales where the birth occurred in England or Wales (such births are included in total figures for England and Wales, but excluded from any sub-division of England and Wales).

Findings from our [consultation on statistical products](#) in 2013 resulted in provisional quarterly birth statistics for the UK and its constituent countries in the [Vital statistics: population and health reference tables](#) being discontinued from May 2012.

Local authorities and other government departments are important users of birth statistics and use the data 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 statistics to feed into statistical models they use for pensions and benefits. The Department of Health uses the data to plan maternity services and inform policy decisions.

Other users include academics, demographers and health researchers, who conduct research into trends and characteristics. Lobby groups use birth statistics for their cause, for example, campaigns against school closures or midwife shortages. 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 and work closely with health professionals. Charities, such as the Twins and Multiple Births Association provide advice and support to multiple birth parents and use the data to monitor trends. Organisations such as Eurostat and the UN use our birth statistics for international comparison purposes. The media also report on trends and statistics.

### **Timeliness and punctuality**

(Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the gap between planned and actual publication dates.)

Since 2010, we have published birth statistics in a series of themed packages to ensure the timely release of data. Annual summary figures are published in July, 7 months after the end of the reference year, following the full quality assurance of the data. These are laid before Parliament pursuant to Section 19 of the Registration Services Act 1953 as amended by the Statistics and Registration Service Act 2007. More detailed tables are then released in packages between August and November.

Prior to 2010, all detailed tables with the exception of parents' country of birth figures, were published on a single date in December as part of an annual reference volume [FM1: Birth statistics](#) which was required to be laid before Parliament. Figures by parents' country of birth were made available in August alongside the annual release of migration statistics.

For more details on related releases, the [GOV.UK release calendar](#) is available online and provides 12 months' advance notice of release dates. In the unlikely event of a change to the pre-announced release schedule, public attention will be drawn to the change and the reasons for the change will be explained fully at the same time, as set out in the [Code of Practice for Official Statistics](#).

### **How the output is created**

Birth statistics present data on births that occur and are then registered in England and Wales. For live births, details of the birthweight are passed to us from the NHS birth notification (completed by the midwife or doctor in attendance at the birth). For more detailed information on the production of birth statistics, see our [User Guide to Birth Statistics](#).

## Validation and quality assurance

### Accuracy

(The degree of closeness between an estimate and the true value.)

Our birth statistics are based on registrations provided by the General Register Office (GRO). These data represent the legal record, making it the best and most complete data source. These data are then supplemented by linking the birth registration to the NHS birth notification to obtain birthweight data.

As part of the birth registration process, before data are submitted through the Registration Online (RON) system, the registrar asks the informant to verify that all data entered are accurate. The registrar is then able to correct any errors. There are some validation checks built into RON to help the registrar with this process. Information supplied at birth registration is generally believed to be correct since wilfully supplying false information may render the informant liable to prosecution for perjury.

When we receive birth registrations, a number of checks are carried out on records to ensure that they are valid. Checks are more frequent on records with extreme values for main variables (such as age of mother and age of father) as these have a greater impact on published tables. When looking at multiple births, checks are carried out to ensure that the number of triplets is divisible by 3 and that there is one maternity recorded for each set of triplets. Any inconsistent birth records are queried with GRO on a monthly basis. This process ensures that when the annual subset is taken, the data are of the highest quality.

The annual subset used for publications is a static file of birth registration records available at the time the subset is taken. Revisions to records can still be made after the subset has been finalised but these will not be reflected in the file or used to compile statistics. Since 2001, the annual dataset has included:

- births occurring in the reference year which were registered by 25 February the following year (parents are allowed 42 days to register a birth)
- births occurring in the year before the reference year which were registered between 26 February in the reference year and 25 February the following year, that is, births in the previous year which had not been tabulated previously

Any proposed changes to the recording and collection of birth registration data are carefully managed and involve ourselves, GRO and other stakeholders. This ensures that any implications on birth statistics are taken into full consideration.

Before May 2012, missing data items collected under the Population (Statistics) Acts 1938 and 1960 required for the production of birth statistics were imputed (age of mother, age of father, number of previous children both live-born and stillborn, and duration of marriage/civil partnership). Since the introduction of RON, the proportion of missing data for age of mother and age of father has fallen below 1%. Details on the method and level of imputation for each year, is available in our [User Guide to Birth Statistics](#). Following changes to the Population (Statistics) Act 1938 (see Coherence and comparability section), data on previous children have not been imputed since May 2012 as only a small number of records are missing this information. Age of mother and father are still imputed.

Information on occupation of the father and the mother is coded for a 10% sample of births. Sample figures in tables providing birth statistics by National Statistics Socio-Economic Classification (NS-SEC) are weighted to known totals of all birth registrations by mother's age and previous live-born children. This ensures consistency with totals, and improves the quality of sample estimates. Tables for standard errors for selected numbers of births and percentages are published alongside the statistics by NS-SEC.

We investigated and identified problems with the recording of birthweight data in some hospitals in Wales between 2008 and 2010. The National Community Child Health Database, maintained by NHS Wales, provides improved birthweight data for children born, resident or treated in Wales. This database has been used to validate birthweights and correct figures entered incorrectly on the birth notification. There is no alternative source for birthweight data in England.

The [Population estimates by marital status](#) used in the calculation of birth rates within and outside marriage/civil partnership are the latest available when the statistics are published. In 2014, we

conducted a [consultation](#) on population estimates by marital status. This resulted in a change in the [methodology](#) used to produce the estimates. The new method involves using the marital status distribution from the Labour Force Survey (LFS) and applying this to published population estimates (by 5 year age group and sex) for England and Wales. Population estimates by marital status for 2002 to 2010 were revised and published in July 2015 alongside new population estimates by marital status for 2011 to 2014. Following these revisions to the population estimates by marital status, birth rates within and outside of marriage/civil partnership were revised back to 2002 in 2015.

All of our tables on birth statistics adhere to the [disclosure control guidance for birth and death statistics](#).

### **Coherence and comparability**

(Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain, for example, geographic level.)

The Births and Deaths Registration Act 1836 made it a legal requirement for all births to be registered from 1 July 1837. Registration requirements have changed over the years, for example, the introduction of the Population (Statistics) Acts 1938 and 1960 allowed for more detailed information to be requested from the informant. Historical data are available in each release with some tables providing data back to 1837, although more detailed tables have a shorter time series.

Over the years the format and content of tables has changed, the Relevance section contains more information. Our [‘Outcome of birth statistics review and lookup file for new tables’](#) details how the birth packages compared with the discontinued [FM1: Birth Statistics](#). Where possible, historical data are provided for comparison. Changes to methodology which mean that figures are not directly comparable are footnoted on the data tables.

The Stillbirth Definition Act 1992 changed the definition of a stillbirth from a child being born after 28 weeks to a child being born after 24 weeks (which did not breathe or show any other signs of life). This means that data for 1992 onwards are not directly comparable with data for stillbirths before the introduction of the Act.

The Human Fertilisation and Embryology Act 2008 contained provisions enabling 2 females in a same sex couple to register a birth from 1 September 2009 onwards. In addition, 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 to same sex couples who are married or in a civil partnership are included with marital births
- births to same sex couples who are not married or in a civil partnership are included with births outside marriage

The number of births to same sex couples is footnoted on relevant tables to assist users. Given the relatively small numbers of births registered to same sex couples, the impact on statistics is negligible.

In 2010, we changed the country groupings for the [Parents’ country of birth package](#). The new groupings are in line with the [National Statistics Country Classification](#).

From the 2012 data year, we changed the method used for reporting National Statistics Socio-Economic Classification (NS-SEC) for birth statistics. We now use the combined method which uses the most advantaged NS-SEC of either parent rather than just the father’s NS-SEC. These changes were detailed in [‘Proposed changes to birth statistics by Socio-Economic Classification’](#). The impact of switching to the combined approach assessed in [‘A combined approach to National Statistics Socio-Economic Classification’](#).

Following changes to the Population (Statistics) Act 1938 in 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, is also now collected at all birth registrations. Previously these data items were only collected from married women. The changes improve the accuracy of birth statistics by birth order

and feed into estimates for family size and measures of fertility. A number of published tables were changed; these changes were detailed in [‘How changes to the Population Statistics Act will affect birth statistics’](#).

The difference, between the old and new data, in the proportion of married women reporting previous births is larger than was expected purely from the question change. More information can be found in [‘Quality assurance of new data on birth registrations, as a result of changes to the Population Statistics Act – from May 2012 onwards’](#). This document also 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 following the improvements to the data collected on previous children and previous marriages at birth registration. The principal characteristics explored in the paper relate to whether a woman has been previously married, and whether the birth is the mother’s first child or subsequent child.

Revisions to birth statistics occur infrequently and generally only take place following revisions to the mid-year population estimates, resulting in revised fertility rates. Footnotes are added to tables where revisions have taken place and documented in supplementary information accompanying the release. Errors are rare but any identified are corrected and clearly marked on the release.

Births outputs are produced to geographic boundaries in place during the year the birth occurred. This approach means that changes in boundaries can affect the comparability of statistics over time.

There is a large degree of comparability in birth statistics between countries within the UK; all figures are based on the details collected when births are registered. We quality assure data for England and Wales enabling detailed birth statistics to be published. Similarly, National Records of Scotland (NRS) and Northern Ireland Statistics and Research Agency (NISRA) quality assure data for their own countries and subsequently publish detailed birth statistics.

For England and Wales, birth statistics are based on the number of births occurring in the reference period, while Scotland and Northern Ireland statistics relate to the number of births registered in the reference period. In England and Wales where a birth is registered too late to be included in the count for the year of occurrence, it will be included in the count for the following year. The differences between reporting occurrences and registrations are relatively minor and figures are broadly comparable (in 2015 and 2014 differences between registrations and occurrences of live births in England and Wales were less than 0.2%). We produce figures for the UK by compiling data for England and Wales, Scotland and Northern Ireland.

The definitions and classifications used across the UK in the production of birth statistics are consistent (for example, the definition of a stillbirth, and the use of the Standard Occupational Classification) but there are some differences in the methods used. For example, we code only 10% of job titles using our standard automatic coding tool whereas NRS and NISRA code 100% of job titles and use different coding tools. We impute missing values for some data items whereas NRS and NISRA do not impute. These differences are believed to have a negligible impact on the comparability of the statistics.

[NS-SEC](#) and [Standard Occupational Classification \(SOC\)](#) are used in our birth statistics. NISRA publish birth statistics by father’s NS-SEC. National Records of Scotland do not publish birth statistics by father’s NS-SEC but such information is available upon request.

To aid comparison across the UK and internationally, annual birth statistics for the UK and its constituent countries and the birth rate for international countries are published in the [Vital statistics: population and health reference tables](#).

Internationally, we provide data to [Eurostat](#) each year to allow publication of UK birth figures alongside those for other European countries.

We publish several internationally recognised indicators such as the crude birth rate, age-specific fertility rates and the total fertility rate (although there is some international variation in the age groupings used to derive this). We also publish a standardised average (mean) age of mother to enable comparisons to be made over time and between different areas.

## Concepts and definitions

(Concepts and definitions describe the legislation governing the output and a description of the classifications used in the output.)

For information on UK legislation relating to birth statistics and for definitions of terms please see our [User Guide to Birth Statistics](#).

Birthweight categories in our birth statistics conform to low birthweight definitions set by the World Health Organisation (WHO). The lowest category for our published birthweight statistics is under 1,500 grams. Figures are also published for 1,500 to 1,999 grams and 2,000 to 2,499 grams.

The WHO definitions of low birthweights are:

- low birthweight: less than 2,500 grams
- very low birthweight: less than 1,500 grams
- extremely low birthweight: less than 1,000 grams

We publish birth statistics by socio-economic classification which is derived using the [Standard Occupational Classification \(SOC\)](#) and employment status. SOC is revised every 10 years. The coding of employment status also changed in 2001 to be consistent with the 2001 Census and SOC2000. Since 2001, [NS-SEC](#) has categorised the socio-economic classification of people, replacing the Registrar General's Social Class and the Socio-economic Group. The NS-SEC classification is not used internationally, however, it is based on an internationally accepted classification. More information on how birth statistics by socio-economic classification are compiled can be found in our [User Guide to Birth Statistics](#).

## Other information

### Output quality trade-offs

(Trade-offs are the extent to which different dimensions of quality are balanced against each other.)

Any birth records which are still missing an age of mother, age of father, marital status or duration of marriage are imputed. The advantages of imputation are that all records can be published by these variables, while time and money is not spent trying to obtain missing information. The disadvantage is that the data are not exact. For more information on the method used for imputation and the level of imputation each year see our [User Guide to Birth Statistics](#).

The information on occupation of the mother and father is coded for a 10% sample of births. This has been shown to give a good approximation to the actual data while being cost effective. Combining occupation with employment status means that a code for socio-economic classification can be derived.

Each year a certain number of births are not included in the published figures because they have been registered later than the date on which the annual dataset is taken. A table published in our [User Guide to Birth Statistics](#) details the number of late records excluded each year. Although this means that some births are not included in the statistics, it is a compromise which must be taken in order to publish timely data.

### Assessment of user needs and perceptions

(The processes for finding out about uses and users, and their views on the statistical products.)

We welcome feedback from users on the content, format and relevance of our releases. User feedback is requested at the bottom of all emails sent by customer service teams within Vital Statistics Output Branch (VSOB). Feedback is also received through our regular attendance at user group meetings and conferences.

## Sources for further information or advice

### Accessibility and clarity

(Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the release details, illustrations and accompanying advice.)

Our recommended format for accessible content is a combination of HTML web pages for narrative, charts and graphs, with data being provided in usable formats such as CSV and Excel. Our website also offers users the option to download the narrative in PDF format. In some instances other software may be used, or may be available on request. Available formats for

content published on our website but not produced by us, or referenced on our website but stored elsewhere, may vary. For further information please refer to the contact details at the beginning of this document.

For information regarding conditions of access to data, please refer to the links below:

- [terms and conditions](#)
- [accessibility](#)

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

Births data is available in our [virtual microdata laboratory](#) 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](#).

### **Useful links**

For information on data quality, legislation and procedures relating to birth statistics please see our [User Guide to Birth Statistics](#).

Links to our birth statistics packages are included in the section titled 'About the output'.

For births data for other UK countries please see [the latest birth statistics for Northern Ireland](#) and [the latest birth statistics for Scotland](#).