General details

Title of output: Conception statistics
Designation: National Statistics
Geographic Coverage: England and Wales
Date of last SQR or QMI*: February 2013
Contact details: vsob@ons.gov.uk

Executive summary

Conception statistics are estimates which bring together records of birth registrations collected under the Births and Deaths Registration Act (1953) and of abortions under the Abortion Act (1967), amended by the Human Fertilisation and Embryology Act (2008). They include all the pregnancies of women usually resident in England and Wales which lead to one of the following outcomes:

- a maternity at which one or more live births or stillbirths occur, which is registered in England and Wales; and
- a termination of a pregnancy by abortion under the 1967 Act, which takes place in England and Wales.

Miscarriages and illegal abortions are not included in the statistics. Maternities which result in one or more live births or stillbirths are counted once only.

The Annual Conception Statistics¹ publication consists of a number of data tables accompanied by a statistical bulletin. The tables released show the latest year’s figures with some tables also showing historical data for comparison. The ONS Conceptions Metadata² provides further information on data quality, legislation and procedures relating to conception statistics.

To meet user needs, timely but provisional quarterly conception statistics are published in the Vital Statistics: Population and Health Reference Tables³. The figures provided are the number of conceptions, the conception rate and the percentage of conceptions leading to abortion, by age, year and quarter for England, Wales and England and Wales. Provisional Quarterly Conceptions to Women aged under-18⁴ are also published by area of usual residence. Conception rates are also provided where area of usual residence is within England.

This document contains the following sections:

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

* Quality and Methodology Information’ (QMI) replaced ‘Summary Quality Reports’ (SQR) from 04/11
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.

ONS has developed Guidelines for Measuring Statistical Quality; these are based upon the five 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;
- Accuracy;
- Output quality trade-offs;
- Assessment of user needs and perceptions; and
- 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.)

Throughout the year provisional quarterly figures for conceptions are released on the ONS website. The quarterly releases are:

i) **Provisional Quarterly Conceptions to Women aged under-18** - provides numbers of conceptions and conception rates (English areas only) for women aged under-18 by area of usual residence (counties, unitary authorities and metropolitan county districts), England and Wales, by quarter of conception, and;

ii) conceptions by age of woman, year and quarter published as part of the Vital Statistics: Population and Health Reference Tables - provides numbers of conceptions, conception rates and the percentage of conceptions leading to abortion for England, Wales and England and Wales.

Provisional quarterly figures are updated to show final figures when annual data are released.

**Annual Conception Statistics** are published by age of woman at conception, marital/civil partnership status at time of conception and outcome (maternity or abortion). Conception statistics for local authorities are published for women aged under-16, under-18 and all ages.

An **animated map of conceptions in England and Wales** allows trends in under-18 conception rates since 1998 to be analysed more easily at the local area level. The map has been updated to include revised rates for 2002-10 calculated using revised mid-year population estimates which take account of the 2011 Census.

Conception statistics do not include:

- conceptions leading to a maternity for women usually resident in England and Wales who give birth abroad;
- conceptions leading to a maternity for women whose usual residence is outside England and Wales where the birth took place within England and Wales;
- abortions to women who are not usually resident in England and Wales; or
- miscarriages or illegal abortions (see the Accuracy section for more information).

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. Abortion notifications also contain information about whether the woman was in a civil partnership.

Due to the small numbers of conceptions to same sex couples, conceptions to same sex couples in a civil partnership are included with conceptions within marriage, while conceptions to same sex couples not in a civil partnership are included with conceptions outside marriage. The number of conceptions to same sex couples is footnoted on relevant tables to assist users. Given the relatively small numbers of conceptions to same sex couples the impact on statistics is negligible.
Data displaying conception statistics as counts and rates cannot be used to disclose information on abortions. Therefore, for conceptions leading to abortions, counts less than 10 and rates based on fewer than 10 events are suppressed. To protect the confidentiality of conceptions data, all counts lower than five, and all rates based on fewer than five events are also suppressed. Occasionally it is necessary to apply secondary suppression to avoid the possibility of disclosure by differencing.

The Department of Health (DH) leads for the Government on reducing under 18 conceptions and is a key user of conception statistics. DH monitors the rate of under 18 conceptions under the Public Health Outcomes Framework 2013–2016 as part of the measures of health improvement. DH uses the numbers of conceptions at all ages as a marker for the success of policies on access to contraception (and other sexual health services). DH uses conception statistics by age because they are of use to maternity service providers, particularly during the antenatal period, to allow them to plan for the level of demand for antenatal services.

Public Health England (PHE) is a key user of conception statistics. PHE have a role in providing information and evidence to local areas, as well providing more tailored advice and support. Conceptions data, information, tools and resources (including policy, practice and research) are brought together in a single knowledge hub for use by local decision makers.

In Wales, teenage conception rates are used widely as outcome indicators in Sexual Health and Well-being Action Plan for Wales, 2010-15, as well as being a general indicator of health and health inequality for example in Our Healthy Future. The conception rate for under 18 years is the most commonly used with the underage rate (under 16 years) being a key health indicator for children and young people.

Local authorities use the data, particularly the number and rate of under-18 conceptions to feed into their Joint Strategic Needs Assessments and to inform their commissioning decisions. They also use the statistics to make comparisons with other local areas, the county, region and also country.

Sexual health charities which provide the public with information, advice and support services use the statistics to promote services that contribute to the reduction in conceptions.

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.)

The release of each conceptions publication is announced on the UK National Statistics Publication Hub at least four weeks before publication.

Maternities are compiled using information collected at birth registration and therefore, births need to be registered before they can be used to compile conception statistics. Consequently, conceptions data cannot be processed until births that were conceived on the last applicable day of the quarter/year have had time to be legally registered (within 42 days of the birth). ONS then requires three months to quality assure the data and compile conception statistics. Provisional quarterly conception statistics are therefore published 14 months after the end of the data quarter in which the conception occurred.

Prior to the 2009 data year (published in 2011), annual data were released twice a year: provisional annual conception statistics were released in February (14 months after the end of the data year) followed by a final annual release in the Annual Reference Volume Conception statistics, published in the autumn (around 22 months after the end of the data year). The tables published in the provisional release differed from those published in the final release.

ONS consulted users of conception statistics between 22 February and 19 April 2011. This review of conception statistics sought the views of users on proposed changes to conception outputs.

One aim of these proposals was to reduce the cost of producing conception statistics by publishing figures once a year (around February), rather than twice a year. In addition, ONS proposed a core set of tables for future publications. Users were asked to comment on these and other proposed changes. ONS also consulted directly with key government customers on the proposals. The majority of users supported the proposal to move to one annual publication of conception statistics since there was no significant impact on data quality. Consequently, since 2011 (2009 data year)
only one release of ONS annual conception statistics has taken place with figures being published
14 months after the end of the data year.

Final annual conception statistics for 2000 and earlier years were included in Birth Statistics (Series
FM1)\textsuperscript{14}. Series FM1 has since been discontinued.

Publication of quarterly data has only been delayed on one occasion. Figures for June quarter 2002
figures were affected by the late supply of abortion data from the Department of Health following
the transfer of processing work to them by ONS.

For more details on related releases, the UK National Statistics Publication Hub\textsuperscript{11} 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\textsuperscript{15}.

How the output is created

Conceptions are maternities (the number of pregnant women who give birth) plus abortions and this
information is obtained from administrative sources. Maternities data are derived from information
recorded at birth registration, a service carried out by the General Register Office. Abortion data
comes from the Department of Health and is based on abortion notifications provided by abortion
clinics.

For more information detailing methodology of production please see ONS Conceptions Metadata\textsuperscript{2}.

Validation and quality assurance

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

Conception statistics are estimates derived by combining numbers of maternities and abortions.

Maternities data are derived from information recorded at birth registration, a service carried out by
the General Register Office. These data represent the legal record under the Births and Deaths
Registration Act (1953), making it the best and most complete data source. The information is
normally supplied by the parent(s). Birth registrations are then linked to the birth notification
(completed by the midwife or doctor in attendance at the birth) in order to obtain mother’s date of
birth when it has not been recorded at birth registration. Details on data processing for birth
registrations can be found in the Quality and Methodology Information for Births\textsuperscript{16} and ONS Births
Metadata\textsuperscript{17}.

Abortion data is supplied by the Department of Health and is based on abortion notifications
provided by abortion clinics. These data represent the legal record under the Abortion Act (1967),
making it the best and most complete data source.

Abortion notifications go through an agreed series of checks before being supplied to ONS to
ensure that they are of sufficient quality. Each quarter there are also updates on previous quarters
which have not been previously finalised; these updates will contain records where the Department
of Health raised queries which have been resolved.

Conception statistics do not include miscarriages or illegal abortions. It is estimated that one in five
confirmed pregnancies will end in miscarriage (NHS Choices)\textsuperscript{18}. It is impossible to determine the
extent of illegal abortions, for example, by women using drugs bought from the Internet. The only
statistics available are where complications arise from illegal abortions resulting in illness or death.
In 1965, before abortion was legalised, the number of women discharged from hospital with post-
abortion sepsis was 3,050; in 1982 it was 390 (Steel, 1990)\textsuperscript{19}. In the three years from 1961 to 1963,
139 women were recorded as dying as a result of abortions (Centre for Maternal and Child
Enquiries (CMACE), 2004)\textsuperscript{20}. For the three years from 2006 to 2008, the figure was zero (CMACE,
2011)\textsuperscript{21}. Given the steady rise in numbers of legal abortions since 1968, and the improvements in
access to abortion it can be assumed that the vast majority of abortions carried out in England and
Wales today are legal ones (Abortion Review, 2012)\textsuperscript{22}.
Information on the exact date of conception cannot be obtained from the birth registration or abortion notification, so formulae are used to estimate the date based on whether the conception resulted in a live birth, stillbirth or abortion. The formulae are published in ONS Conceptions Metadata.

In any year it is possible for a woman to appear more than once in conception statistics as it is possible for her to:

i) have multiple abortions;
ii) conceive twice where both conceptions lead to a maternity;
iii) have multiple conceptions which result in a maternity and one or more abortions; or
iv) have an abortion and a birth as part of her pregnancy when carrying more than one child that is, a conception can result in both a maternity and an abortion.

Following the review of conception statistics between February and April 2011, ONS publishes annual figures only once a year in February/March. This change reduces the cost of producing conception statistics and has negligible impact on data quality given the improved accuracy of provisional conception figures (in 2008 there was generally less than 0.1% difference in the number of conceptions within each age group in England and Wales). The main reasons for the improved accuracy were:

- reductions in the percentage of birth registrations where mother’s date of birth was not stated;
- moves within ONS to conduct more timely quality checks on birth registrations; and
- daily receipt of birth registrations through the Registration Online system (RON).

At the time that annual conception statistics are now compiled, only the births annual subset for the earlier year (relating to maternities which occurred in the same year as the conception) will have been finalised. However, the births quarterly subsets for the subsequent year which are required for the annual conceptions release will have gone through full quality assurance.

Prior to the 2010 data year for conception statistics, differences between provisional and final figures resulted from:

i) maternity records where mother’s date of birth was missing at registration had the age of mother at conception imputed for the final annual release. In the provisional release, age of mother had only been imputed for maternities occurring in the same calendar year as the conception. Hence in provisional conception figures, if the age of the mother was missing, for maternities occurring in the subsequent calendar year to the conception, the conception was included in the total count, but excluded from any age breakdown (imputation routines were only run on final annual births datasets and hence had not yet been applied to these maternities); and

ii) abortion records which needed to be clarified with clinics and were unresolved were excluded from the provisional annual releases but included in the finalised dataset following clarification.

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.)

Conception statistics are not directly comparable with birth statistics for the following reasons:

- conception statistics include abortions;
- conception statistics are published by date of conception while birth statistics are published by date of birth so the time periods are not comparable; and
- conception statistics do not count multiple births by the same woman as they are derived using maternities (the number of women giving birth rather than the number of babies born).

The Department of Health publishes annual Abortion Statistics by age of woman, number of previous abortions, length of gestation, source of funding, health area of usual residence of woman, method of abortion, ethnicity of woman and grounds for abortion.
Abortion data used in conception statistics are not directly comparable with abortion statistics published by the Department of Health (DH). This is because DH abortion statistics are published by date of abortion whereas ONS uses abortion data based on the date of conception. Some abortions will relate to conceptions which occurred in the previous calendar year.

Conception statistics in Scotland\textsuperscript{24} are available for women aged under 16, under-18 and under 20. They have been produced to a revised methodology since 2007 to become more comparable to those in England and Wales. Prior to this, they included therapeutic miscarriages which required a hospital stay and were based on financial years rather than calendar years. More information on Scottish conception figures and the differences in methodology can be found on the [ISD Scotland website] \textsuperscript{25}.

In Northern Ireland it is lawful to perform an operation for the termination of a pregnancy, where:

\begin{itemize}
  \item it is necessary to preserve the life of the woman; or
  \item there is a risk of real and serious adverse effect on her physical or mental health, which is either long term or permanent.
\end{itemize}

In any other circumstance it would be unlawful to perform such an operation. Due to the small numbers of abortions carried out in Northern Ireland each year, and in order to protect patient confidentiality, information on terminations of pregnancy is only released at Northern Ireland and Health and Social Care Trust level. Further information on the number of terminations of pregnancy carried out in Northern Ireland can be found on the [Department of Health, Social Services and Public Safety’s website]\textsuperscript{26}.

There are no comparable statistics internationally due to the lack of abortion statistics.

The conception rate provides a standard measure (that is the number of conceptions per thousand women in age group) which can be used to make comparisons over time and between different areas. This measure takes account of the size of the population. The overall rate for all ages is not standardised and so does not take into account the age structure of the population. Age specific rates enable easy comparisons between different age groups. Rates for areas with a low population should be treated with caution since a small change in the number of conceptions can lead to a large change in the rate. In these areas rates should be assessed alongside numbers of conceptions and statistics over several years should be taken into consideration.

Time series data are available going back to 1969. However, there are issues of comparability due to changes in the way ONS estimated the age at conception in 1999. A back series of data to 1987 was produced. Details of change are available in the 1998 [Birth Statistics (Series FM1)]\textsuperscript{14}. Changes in 1992 to the stillbirth definition (see below) will also affect comparability over time.

The Stillbirth Definition Act (1992) defines a stillbirth from being ‘any child that has issued forth from its mother after the twenty fourth week of pregnancy, and that did not at any time after being completely expelled from its mother breathe or show any signs of life’. Previously, the definition of a stillbirth was as above, but for twenty eight or more weeks of gestation. For this reason conception statistics from 1993 are therefore not fully comparable with those for previous years.

Conception rates for 2002-08 were revised in the 2010 annual conceptions release in time series tables following revisions to the mid-year population estimates for those years. The revisions were footnoted on tables and in the accompanying metadata.

Conception rates for 2002-10 for England and Wales were revised again in the 2011 annual conceptions release following further revisions to population estimates to take account of the 2011 Census. Conceptions rates for 2002-10 for subnational areas have been recalculated following the publication of revised subnational population estimates on 30 April 2013. The revisions are footnoted.

Conceptions outputs are produced to geographical boundaries in place during the year the conception occurred. This approach means that changes in boundary can affect the comparability of statistics over time.
Following the move to publish only one set of annual conception statistics from 2011 onwards (instead of publishing a provisional and then final release), several users expressed concerns over the comparability of pre-2008 figures (published 22 months after the end of the data year) and post 2008 figures (published 14 months after the end of the data year). ONS analysis shows that these figures do represent a comparable time series given the improvements in the accuracy of annual conception figures published 14 months after the end of the data year.

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 conception statistics and for definitions of terms please see ONS Conceptions Metadata and the ONS Births Metadata.

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

Following the review of conception statistics in 2011, it was agreed with users that there would be a single release of annual conceptions data (rather than a provisional and final release) as the difference between provisional and final conceptions estimates was relatively small. In 2008, there was generally less than 0.1% difference in the number of conceptions within each age group in England and Wales. This change has negligible impact on the accuracy of conception statistics but greatly reduces the cost to ONS for producing the statistics.

Maternities data included in ONS Conception Statistics have been derived from the ONS births database. Where the mother’s date of birth was not stated at registration it is obtained by ONS from the corresponding birth notification record. Where this is not possible and the birth is in a finalised births dataset (two partial years of births data are fed into the annual conceptions dataset), the age of mother is imputed using Canadian Census Edit and Imputation System (CANCEIS). This system works by selecting the most appropriate donor record from the entire annual dataset.

Conception statistics for 2009 onwards by age exclude maternities where the mother’s age was not recorded and the birth occurred in the subsequent calendar year to the conception. This is because CANCEIS imputation is only run once an annual births dataset is finalised. Since 2009, the final conception statistics have been released before the annual births dataset has been finalised for the subsequent calendar year to the date of conception. The impact on conception statistics is negligible since the percentage of records where age of mother remains missing following birth notification matching is very small. No statistical bias is introduced by excluding this small number of conceptions from the annual figures by age group as the records missing age of mother are distributed across all areas of England and Wales. The impact on the comparability of statistics over time and between areas is negligible.

Assessment of user needs and perceptions
(The processes for finding out about uses and users, and their views on the statistical products.)

A user feedback survey for conception statistics took place in February/March 2012. No responses were received.

All statistical bulletins for conceptions releases seek feedback from users with the inclusion of a standard statement within the background notes, ‘We welcome feedback from users on the content, format and relevance of our releases’.

User feedback is requested at the bottom of all e-mails sent by customer service teams within Vital Statistics Outputs Branch. The standard wording is outlined below: ‘We welcome feedback on the content, format and relevance of the data provided. Please provide any feedback and state whether you would like your contact details to be added to our list of users. All known users will be invited to participate in any consultations that are run.’

Feedback is also received through ONS' regular attendance at user group meetings and conferences. A list of known users is maintained, including which statistical outputs they use and the use made of them.
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.)

ONS’s recommended format for accessible content is a combination of HTML webpages for narrative, charts and graphs, with data being provided in usable formats such as CSV and Excel. The ONS 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 the ONS website but not produced by the ONS, or referenced on the ONS 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\(^{27}\) (for data on the website);
- Copyright and reuse of published data\(^{28}\);
- Pre-release access\(^{29}\) (including conditions of access); and
- Accessibility\(^{30}\).

In addition to this Quality and Methodology Information, Basic Quality Information relevant to each release is available in the background notes of the relevant Statistical Bulletin.

Further information

Special extracts and tabulations of conceptions data for England and Wales are available to order (subject to legal frameworks, disclosure control, resources and agreements of costs, where appropriate). Such enquiries should be made to:

Vital Statistics Outputs Branch
Office for National Statistics
Segensworth Road
Titchfield
Fareham
Hampshire
PO15 5RR
Tel: +44 (0)1329 444 110
E-mail: vsob@ons.gsi.gov.uk

The ONS charging policy\(^{31}\) is available on the ONS website.

Useful links

Provisional Quarterly Conceptions to Women aged under-18\(^{4}\) are published by area of usual residence. Conception rates are provided where area of usual residence is within England.

Vital Statistics: Population and Health Reference Tables\(^{3}\) provide the number of conceptions, the conception rate and the percentage of conceptions leading to abortion, by age, year and quarter for England, Wales and England and Wales. Figures for the latest quarters may be provisional.

Annual Conception Statistics\(^{1}\) are published by age of woman at conception, marital/civil partnership status at time of conception and outcome (maternity or abortion). Conception statistics for local authorities are published for women aged under-16, under-18 and all ages.

An animated map of conceptions in England and Wales\(^{6}\) allows trends in under-18 conception rates since 1998 to be analysed more easily at the local area level.

For information on data quality, legislation and procedures relating to conception statistics please see ONS Conceptions Metadata\(^{2}\).
<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Title of Reference</th>
<th>Website Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Child and Maternal Health Intelligence Network</td>
<td><a href="http://www.chimat.org.uk/teenconceptions">www.chimat.org.uk/teenconceptions</a></td>
</tr>
<tr>
<td></td>
<td>Resource</td>
<td>URL</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>27</td>
<td>Terms and conditions (for data on the website)</td>
<td><a href="http://www.ons.gov.uk/ons/site-information/information/terms-and-conditions/index.html">www.ons.gov.uk/ons/site-information/information/terms-and-conditions/index.html</a></td>
</tr>
<tr>
<td>28</td>
<td>Copyright and reuse of published data</td>
<td><a href="http://www.ons.gov.uk/ons/site-information/information/creative-commons-license/index.html">www.ons.gov.uk/ons/site-information/information/creative-commons-license/index.html</a></td>
</tr>
<tr>
<td>30</td>
<td>Accessibility</td>
<td><a href="http://www.ons.gov.uk/ons/site-information/information/accessibility/index.html">www.ons.gov.uk/ons/site-information/information/accessibility/index.html</a></td>
</tr>
</tbody>
</table>