

# Publication Report



## **Teenage Pregnancy**

**Year ending 31<sup>st</sup> December 2009**

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## About ISD

Scotland has some of the best health service data in the world combining high quality, consistency, national coverage and the ability to link data to allow patient based analysis and follow up.

Information Services Division (ISD) is a business operating unit of NHS National Services Scotland and has been in existence for over 40 years. We are an essential support service to NHSScotland and the Scottish Government and others, responsive to the needs of NHSScotland as the delivery of health and social care evolves.

**Purpose:** To deliver effective national and specialist intelligence services to improve the health and wellbeing of people in Scotland.

**Mission:** Better Information, Better Decisions, Better Health

**Vision:** To be a valued partner in improving health and wellbeing in Scotland by providing a world class intelligence service.

## Official Statistics

Information Services Division (ISD) is the principal and authoritative source of statistics on health and care services in Scotland. ISD is designated by legislation as a producer of 'Official Statistics'. Our official statistics publications are produced to a high professional standard and comply with the Code of Practice for Official Statistics. The Code of Practice is produced and monitored by the UK Statistics Authority which is independent of Government. Under the Code of Practice, the format, content and timing of statistics publications are the responsibility of professional staff working within ISD.

ISD's statistical publications are currently classified as one of the following:

- National Statistics (ie assessed by the UK Statistics Authority as complying with the Code of Practice)
- National Statistics (ie legacy, still to be assessed by the UK Statistics Authority)
- Official Statistics (ie still to be assessed by the UK Statistics Authority)
- other (not Official Statistics)

Further information on ISD's statistics, including compliance with the Code of Practice for Official Statistics, and on the UK Statistics Authority, is available on the [ISD website](#).

## Introduction

A number of teenage girls experience unintended or unwanted pregnancies, although for some young people this is a positive life decision. With a higher rate of teenage pregnancy than most other western European countries, reducing unintended teenage pregnancy is a national target for the Scottish Government. Teenage pregnancy is also linked to deprivation with the rates of teenage pregnancy in deprived areas more than treble those of the least deprived areas.

### Teenage pregnancy targets

The national target for teenage pregnancy reduction is:

- Reduce by 20% the pregnancy rate (per 1000 population) in under 16 year olds from 8.5 in 1995 to 6.8 in 2010.

These web pages present data on teenage pregnancies, with the most recent information representing conceptions in 2009.

The main tables and charts show the number and rate of pregnancies in women under the age of twenty, based on data derived from birth and stillbirth registrations, and from the notifications of therapeutic abortions.

### Correction

A minor error has been discovered in the calculation of rates per 1000 women in the table 'teenage pregnancies by NHS Board of residence, year and age of mother at conception'. This applies only to the year 2009 and has now been corrected. The impact of this is that the Scotland rate for under 20s is 52.8 instead of 52.7, for under 18s is 37.2 instead of 36.6 and for under 16s 7.1 instead of 7.0. Rates for NHS Boards for 2009 show similar minor corrections.

## Key points

The teenage pregnancy rate has been fairly steady for the past decade with a small drop over the last 3 years. In 2009, in the under 16 age group there were 7.1 pregnancies per 1,000, down from 7.8 in 2008. The rates in the older age groups have also reduced, with the under 18s dropping from 40.2 per 1,000 in 2008 to 37.2 per 1,000 in 2009 and the under 20s from 55.6 per 1,000 to 52.8 per 1,000.

In mainland NHS boards in 2009, NHS Borders recorded the lowest rate of teenage pregnancy in all three age groups. The rate in the under 16 age group was 5.0 per 1,000, for the under 18 age group it was 27.6 per 1,000 and in the under 20 age group it was 39.6 per 1,000.

NHS Fife has the highest teenage pregnancy rate in 2009 for the under 16 age group at 10.5 per 1,000. In the under 18 and under 20 age groups the highest rates were seen in NHS Tayside with rates of 46.6 per 1,000 and 62.3 per 1,000 recorded respectively.

Over the years there has been a change in the balance between teenage conceptions which are aborted and those which continue to delivery. In the under 18 and under 20 age groups the rate of abortion has fallen slightly but still remains considerably lower than the delivery rate. The delivery rates in the under 18 and 20 age groups are the lowest since 1994. In the under 16 age group the abortion rate has been higher than the delivery rate since 2001.

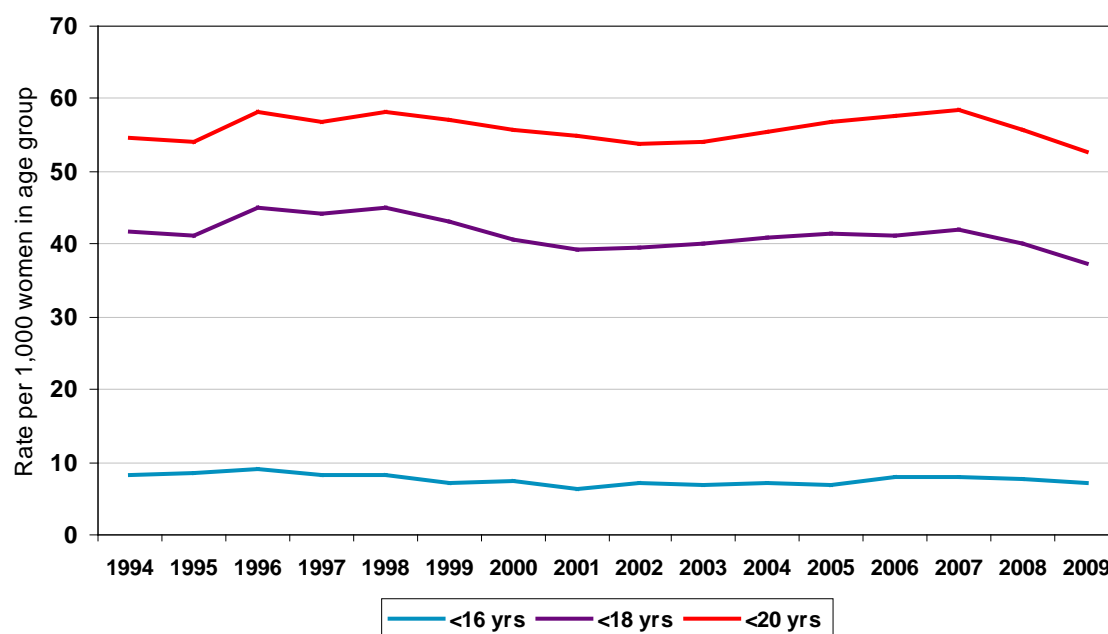
There is a strong deprivation gradient. In the under 20 age group, the most deprived areas have approximately ten times the rate of delivery as the least deprived (65.3 per 1,000 and 7.6 per 1,000) and nearly twice the rate of abortion (26.0 per 1,000 and 14.6 per 1,000). These proportions have not varied much over the most recently available ten years, and do not vary much with age.

## Results and Commentary

### Teenage Pregnancy Rates by Age Group at Conception

The teenage pregnancy rate has been fairly steady for the past decade with a small drop over the last 3 years. In 2009, in the under 16 age group there were 7.1 pregnancies per 1,000, down from 7.8 in 2008. The rates in the older age groups have also reduced, with the under 18 age group dropping from 40.2 per 1,000 in 2008 to 37.2 per 1,000 in 2009 and the under 20 age group from 55.6 per 1,000 to 52.8 per 1,000.

#### Teenage Pregnancy Rates, 1994 -2009, by Age Group at Conception



<16 yrs includes all pregnancies in women aged under 16. the rate is calculated using the female population aged 13-15.  
 <18 yrs includes all pregnancies in women aged under 18. the rate is calculated using the female population aged 15-17.  
 <20 yrs includes all pregnancies in women aged under 20. the rate is calculated using the female population aged 15-19.  
 Source: (NRS) registered births and stillbirths & Notifications (to the Chief Medical Officer for Scotland) of abortions performed under the Abortion Act 1967.

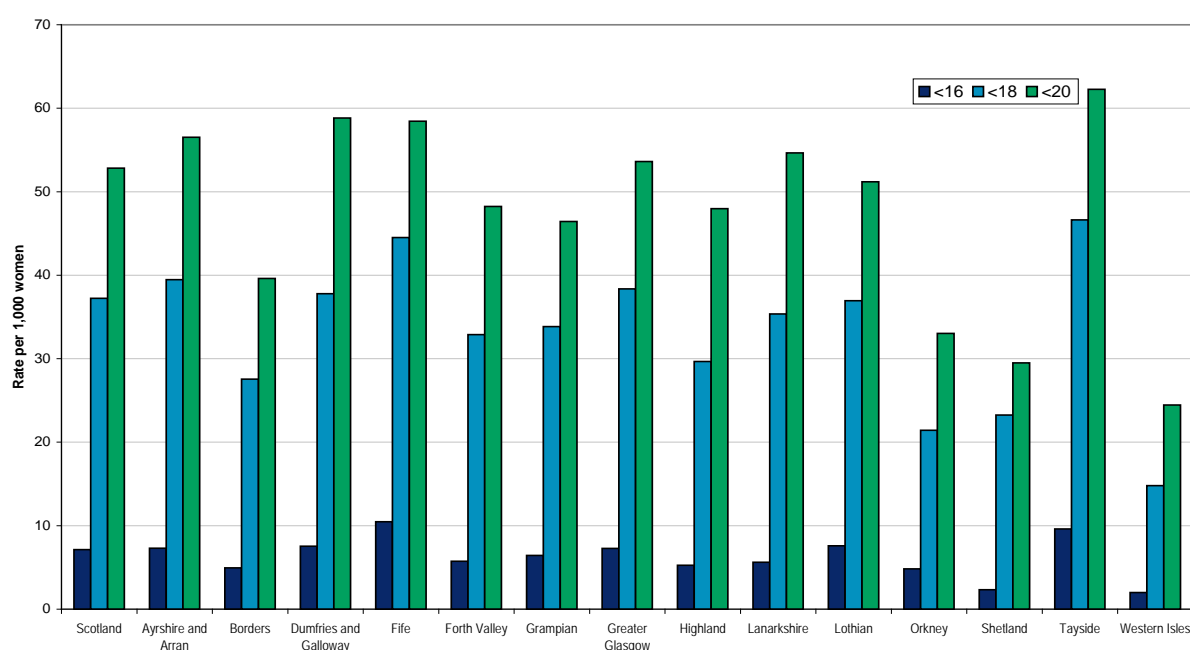
For further information see [Table 1](#).

## Teenage Pregnancies by NHS Board of Residence

In mainland NHS boards in 2009, NHS Borders recorded the lowest rate of teenage pregnancy in all three age groups. The rate in the under 16 age group was 5.0 per 1,000, for the under 18 age group it was 27.6 per 1,000 and in the under 20 age group it was 39.6 per 1,000.

NHS Fife has the highest teenage pregnancy rate in 2009 for under 16s age group at 10.5 per 1,000. In the under 18 and under 20 age groups the highest rates were seen in NHS Tayside with rates of 46.6 per 1,000 and 62.3 per 1,000 recorded respectively.

### Teenage Pregnancies in 2009 by NHS Board of Residence



<16 yrs includes all pregnancies in women aged under 16. the rate is calculated using the female population aged 13-15.  
 <18 yrs includes all pregnancies in women aged under 18. the rate is calculated using the female population aged 15-17.  
 <20 yrs includes all pregnancies in women aged under 20. the rate is calculated using the female population aged 15-19.  
 Rates for <16 yrs in Orkney, Shetland & Western Isles and for <18 in Orkney have been suppressed due to potential risk of disclosure.

Source: (NRS) registered births and stillbirths & Notifications (to the Chief Medical Officer for Scotland) of abortions performed under the Abortion Act 1967.

In mainland council areas, for the three year period 2007/09 the lowest rates of teenage pregnancy were recorded in East Renfrewshire Council (2.6 per 1,000) for the under 16 age group and under 18 age group (15.4 per 1,000). Dundee City Council had the highest teenage pregnancy rate in both these age groups, 18.5 per 1,000 in the under 16 age group and 73.7 per 1,000 in under 18 age group. In 2009, the lowest and highest rates in the under 20 age group in mainland council areas are 24.0 per 1,000 in East Renfrewshire and 73.8 per 1,000 in Dundee City Council, down from 77.9 per 1,000 in 2008.

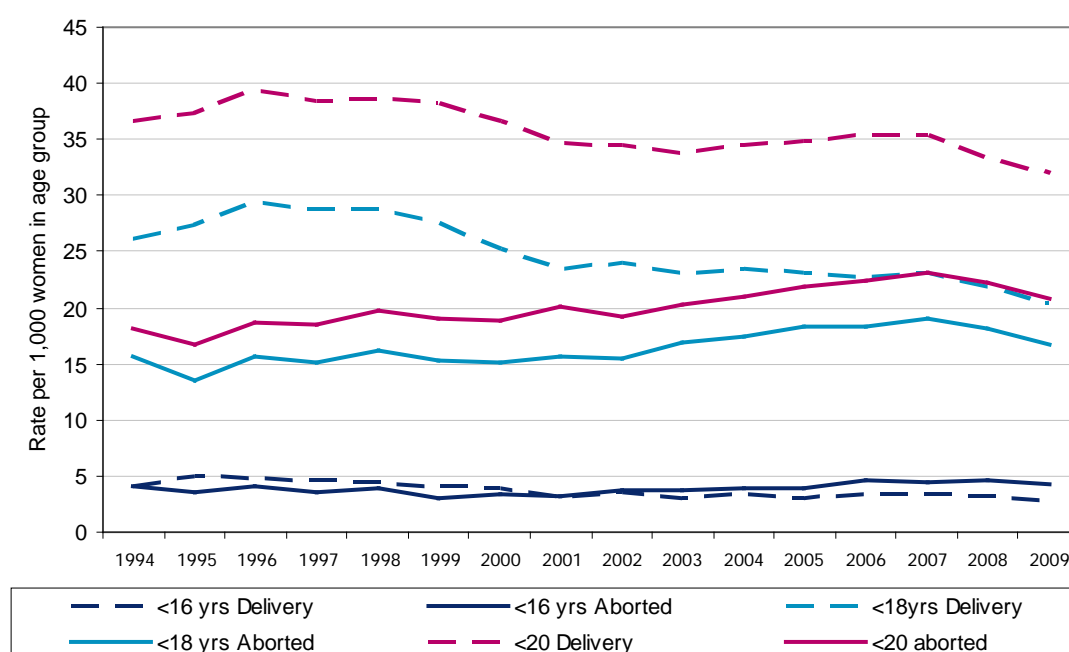
For further information see [Table 2](#) and [Table 3](#).

## Outcome of Teenage Pregnancy by Age Group at Conception

Over the years there has been a change in the balance between teenage conceptions which are aborted and those which continue to delivery. In the under 18 and under 20 age groups the rate of abortion has fallen slightly but still remains considerably lower than the delivery rate. The delivery rates in the under 18 and 20 groups are the lowest since 1994. In the under 16 year age group the abortion rate has been higher than the delivery rate since 2001.

In 2009, in mainland NHS board areas, the delivery rate in the under 20 age group was highest in Ayrshire and Arran and lowest in Grampian NHS board areas (39.5 and 26.2 per 1,000, respectively). The abortion rate was highest in Tayside and lowest in the Borders NHS board areas (27.6 and 13.0 per 1,000 respectively).

### Outcome of Teenage Pregnancy, 1994 - 2009, by Age Group at Conception



<16 yrs includes all pregnancies in women aged under 16. The rate is calculated using the female population aged 13-15. <18 yrs includes all pregnancies in women aged under 18. The rate is calculated using the female population aged 15-17. <20 yrs includes all pregnancies in women aged under 20. the rate is calculated using the female population aged 15-19.

Source: (NRS) registered births and stillbirths & Notifications (to the Chief Medical Officer for Scotland) of abortions performed under the Abortion Act 1967.

For further information see [Table 4](#) and [Table 5](#).

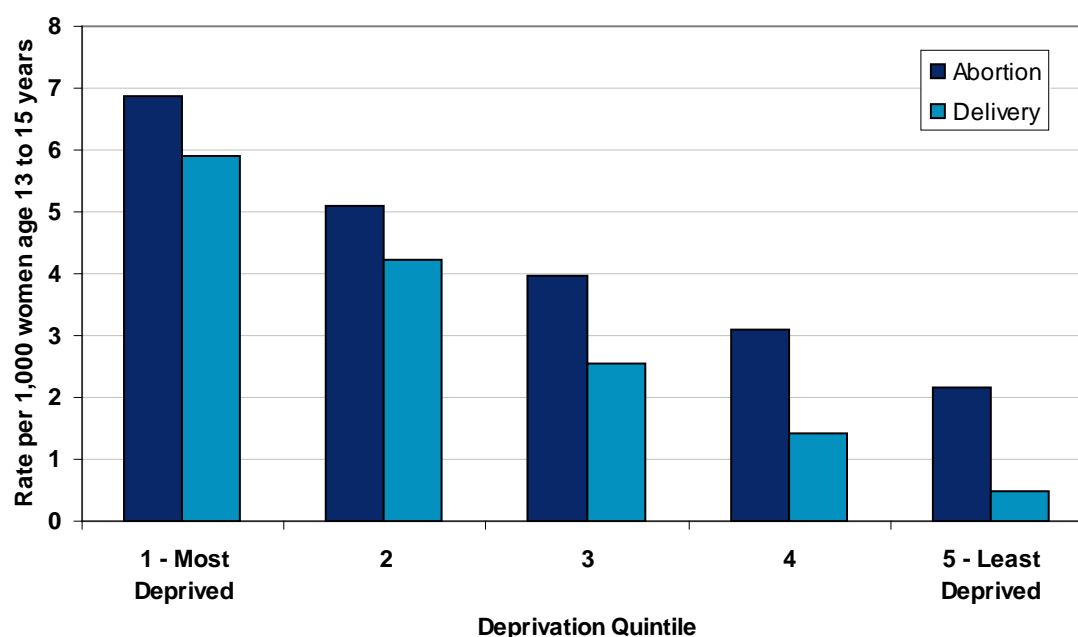


## Teenage pregnancies by Deprivation Quintile and Outcome

There is a strong deprivation gradient. In the under 20 age group, the most deprived areas have approximately ten times the rate of delivery as the least deprived (65.3 per 1,000 and 7.6 per 1,000) and nearly twice the rate of abortion (26.0 per 1,000 and 14.6 per 1,000). These proportions have not varied much over the most recently available ten years, and do not vary much with age.

In the most deprived areas in 2009 the rate of teenage pregnancies in the under 16 age group was nearly 5 times the rate in the least deprived areas (12.8 per 1,000 and 2.6 per 1,000 respectively). A similar pattern was also present in the under 18 age group, with 64.3 per 1,000 in the most deprived group and 15.7 per 1,000 in the least deprived. Within the under 20 age group the rates were 91.3 within the most deprived groups and 22.2 per 1,000 within the least deprived.

### Teenage pregnancies in 2009: by Deprivation Quintile and Outcome for < 16 years



Includes all pregnancies in women aged <16. The rate is calculated using the female population aged 13-15.

Source: (NRS) registered births and stillbirths & Notifications (to the Chief Medical Officer for Scotland) of abortions performed under the Abortion Act 1967.

For further information see [Table 6](#) and [Table 7](#).

## Revision

In light of a recent update to the abortion data input system an error in the calculation of age at conception (derived from mother's date of birth, the date of termination and the gestation at which the termination was performed) was identified. The method has now been corrected and retrospective data from 1998-2008 has been revised. This change has minimal impact on the teenage pregnancy rates overall. Please see [Revision table](#) for change in overall numbers and rates.

### List of Tables

Table No.	Name	Time period	File & size
1	<a href="#">Teenage Pregnancy by mothers age at conception: Scotland</a>	1994-2009	Excel [26kb]
2	<a href="#">Teenage Pregnancy by age group of mother at conception: NHS Board</a>	1994-2009	Excel [41kb]
3	<a href="#">Teenage Pregnancy by age group of mother at conception: Local Council area</a>	1994-2009	Excel [74kb]
4	<a href="#">Teenage Pregnancy by age group of mother at conception and outcome: Scotland</a>	1994-2009	Excel [20kb]
5	<a href="#">Teenage Pregnancy by age group of mother at conception and outcome: NHS Board</a>	1994-2009	Excel [61kb]
6	<a href="#">Teenage Pregnancy by age group of mother at conception, deprivation and outcome: Scotland</a>	2000-2009	Excel [32kb]
7	<a href="#">Teenage Pregnancy by age group of mother at conception, deprivation and outcome: NHS Board</a>	1998 - 2009	Excel [498kb]

### List of Charts

Chart No.	Name	Time period	File & size
1	<a href="#">Teenage Pregnancy by age of mother at conception</a>	1994-2009	Excel [19kb]
2	<a href="#">Teenage Pregnancy by age of mother at conception and outcome</a>	1994-2009	Excel [33kb]
3	<a href="#">Teenage Pregnancy by age of mother at conception and NHS board of Residence</a>	2009	Excel [47kb]
4	<a href="#">Teenage Pregnancy by age of mother at conception, deprivation and outcome</a>	2009	Excel [54kb]
5	<a href="#">Teenage Pregnancy by age of mother at conception, Scotland compared to England/Wales</a>	1994-2009	Excel [30kb]

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## Further Information

Further information can be found on the [ISD website](#)

## Appendix

### A1 – Background Information

The source data are registrations of live and still births from the National Records of Scotland (NRS) with multiple births counted as one event, and number of legal abortions notified in accordance with the Abortion Act 1967.

The data presented are based on year of conception and age at conception and is shown from 1994.

The date of conception for each pregnancy is calculated from the recorded gestation minus fourteen days for stillbirths and abortions. The correction is because the period of gestation is traditionally measured from the first day of the last menstrual period, and it is assumed that conception starts two weeks after this date. For live births, as gestation is not available, the date of conception is presumed to be 38 weeks before birth.

The data are presented as under 20, under 18 and under 16. For under 20 conception rates all conceptions under-20 are included in the calculation. However, the 15-19 age group is used as the denominator as less than 3% of under-20 conceptions are to girls aged under 15 and including the younger age groups in the base population may produce misleading results. The same principle applies for under 18 and under 16 rates, which use females aged 15-17 and 13-15 respectively. The denominators are NRS mid-year populations (based on updates of Census data).

Data are presented at Scotland, NHS Board and local council area. However, data for the under 16 and under 18 age groups at local council area have been aggregated (3 years) to increase the robustness of the data and lessen the possibility of small numbers. Suppression has been applied throughout these data in line with ISD's Statistical Disclosure Control Protocol.

This methodology was adopted in 2007 and applied retrospectively to older data to allow easier comparisons with data from the rest of the UK. See explanation to changes in methodology and data sources in A2.

## A2 – Teenage Pregnancy New Method

### Method of deriving information adopted from 2007

#### Introduction

Prior to the October 2007 update, there were substantial differences between Scotland and England & Wales in the ways in which teenage pregnancy rates are calculated. These differences meant that the data were not directly comparable; although there was often an assumption by some users that published data from the countries of the UK could be compared. In the past this has led to misreporting and misinterpretation.

#### Background

Description of the old method of calculation of teenage pregnancy rates used by ISD

- Scottish data usually included miscarriages derived from SMR01, although a table excluding miscarriages had been produced in recent years. Miscarriages increase the level of teenage pregnancies by approximately 6% for the 13-15 age group and approximately 8% for the 16-19 group (and the 13-19 group overall because the small proportion in the 13-15 group are swamped by the numbers in the older teenage group). In recent years the proportion of miscarriages has decreased slightly. This probably reflects an increasing preparedness to manage miscarriage without hospital admission.
- SMR02 (data returns from maternity hospitals) were used to derive the number of births and stillbirths. This allowed the actual gestation at birth to be used, which is important since more than 10% of babies are born either three weeks or more before their due date or more than one week after it. But this advantage is offset by the fact that approximately 2% of births are not recorded on SMR02 and there have recently been substantial delays and incompleteness of SMR02 returns from certain areas.
- The abortions data were derived from SMR01 and SMR02 returns rather than notifications of legal abortions.
- The data were usually presented in specific age bands (13-15; 16-19, and 13-19), with both numerator and denominator within these bands.
- The data were usually presented by financial year rather than calendar year.
- The Scottish data were presented by date of the measured event rather than the date of the conception. Thus a woman who conceived in 2003 and had her baby in 2004 would be included in the data for 2004 in Scotland, but 2003 in England & Wales.

Description of the method of calculation of teenage pregnancy rates used in England and Wales

- The source data are registrations of one or more live births and stillbirths (note that births of multiple babies should be counted as one event), and notifications of legal abortions.
- The date of conception for each pregnancy is calculated from the recorded gestation minus fourteen days for stillbirths and abortions. The correction is because the period of gestation is traditionally measured from the first day of the last menstrual period, and it is assumed that conception starts two weeks after this date. For live births, the date of conception is presumed to be 38 weeks before birth.
- The date of conception is used as the "event date" for the numerator.

- The geographical location of the woman at conception is approximated by using the postcode recorded at the time of the end of the pregnancy. For abortion data, missing postcodes are imputed with a random postcode from within the main Primary Care Trusts (PCTs) of other residents attending the same hospital or clinic.
- For abortion data, the method of abortion is checked against the recorded gestation for compatibility.
- Where the gestation is not recorded on the abortion form, either 7,8,9 or 10 weeks is randomly assigned. If the gestation is stated as three weeks, this is recoded to four weeks.
- If age is missing on the abortion forms, it is assigned to the 20-24 year group.
- If the gestation is more than 24 weeks, the "grounds" for abortion is checked.
- Confirmation of date of birth is sought for all women where the age is either under 15 or over 50.
- The data are usually presented as under 20, under 18 and under 16, but the denominators chosen for these rates are 15-19, 15-17 and 13-15 respectively.
- The denominators are ONS mid-year populations (based on updates of Census data).

## **The New Approach**

As far as possible, we have emulated the approach used in England & Wales. Registration data are obtained from the National Records of Scotland (NRS) for live and stillbirths. These are processed to ensure that multiple births were treated as a single conception. For all live births, the date of conception is calculated as being 38 weeks prior to the date of delivery. For stillbirths, the recorded gestation in weeks is used, and two weeks are subtracted from this number to produce the estimated time between conception and birth. This number is used to derive the likely conception date. For the very small numbers of stillbirths in which the gestation is not recorded, 32 weeks is assumed.

The completeness and accuracy of the abortion data is assessed, and the gestation is used to calculate the date of conception. For the small number of cases where gestation is missing, nine weeks is assumed. Although this approach is not absolutely identical to the approach used in England and Wales it is considered to be as close as practicable and satisfactory for direct comparisons.

The numerators and denominators are derived in the same way as those used in England and Wales.

## A2 – Publication Metadata (including revisions details)

Metadata Indicator	Description
Publication title	Teenage Pregnancy
Description	Update of annual statistical information on teenage pregnancies in Scotland. Includes data by age and year of conception.
Theme	Health and Social Care
Topic	Maternity and pregnancy services
Format	Excel workbooks
Data source (s)	National Records of Scotland (NRS) birth registrations and notifications (to the Chief Medical Officer for Scotland) of abortions performed under the Abortion Act 1967.
Date that data is acquired	Data extracted at end of April
Release date	28 <sup>th</sup> June 2011
Frequency	Annual
Timeframe of data and timeliness	Delays not expected. NRS birth registrations are finalised March/April and provided to ISD and abortion data is published in the month prior to the release of teenage pregnancy statistics.
Continuity of data	Reports data from 1994.
Revisions statement	Data are considered final. Receipt of late abortion notifications (generally <30) may be received after publication, with figures being revised at next update.
Revisions relevant to this publication	In light of a recent update to the abortion data input system an error in the calculation of age at conception (derived from mother's date of birth, the date of termination and the gestation at which the termination was performed) was identified. The method has now been corrected and retrospective data from 1998-2008 has been revised. This change has minimal impact on the teenage pregnancy rates overall.
Concepts and definitions	See A1 (Appendix 1)
Relevance and key uses of the statistics	Making information publicly available for planning, epidemiology, provision of services and the statistics provides comparative information.
Accuracy	Abortion notification information on forms is clerically checked and also validated at data entry and NRS birth registrations data are not supplied to ISD until considered final. Statistics are compared to previous year's figures.
Completeness	Considered complete. There may be a very small number of late abortion notification forms received (generally <30). Data are then revised at following year's update.
Comparability	Scottish data are directly comparable with data for England and Wales which are available online at <a href="http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15055">http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15055</a>
Accessibility	It is the policy of ISD Scotland to make its web sites and products accessible according to published guidelines. See attached link for further details: <a href="http://www.isdscotland.org/About-ISD/Accessibility/">http://www.isdscotland.org/About-ISD/Accessibility/</a>
Coherence and clarity	Teenage Pregnancy tables and charts are accessible via the ISD website at <a href="http://www.isdscotland.org/Health-Topics/Maternity-and-">http://www.isdscotland.org/Health-Topics/Maternity-and-</a>



	<a href="#">Births/Teenage-Pregnancy</a>
Value type and unit of measure	Numbers and crude rates are presented.
Disclosure	The ISD protocol on Statistical Disclosure Protocol is followed: <a href="http://www.isdscotland.org/Products-and-Services/Data-Protection-and-Confidentiality/">http://www.isdscotland.org/Products-and-Services/Data-Protection-and-Confidentiality/</a>
Official Statistics designation	National Statistics.
UK Statistics Authority Assessment	Awaiting assessment by UK Statistics Authority.
Help email	<a href="mailto:NSS.isdmaternity@nhs.net">NSS.isdmaternity@nhs.net</a>
Date form completed	June 2011

## **A3 – Early Access details (including Pre-Release Access)**

### **Pre-Release Access**

Under terms of the "Pre-Release Access to Official Statistics (Scotland) Order 2008", ISD are obliged to publish information on those receiving Pre-Release Access ("Pre-Release Access" refers to statistics in their final form prior to publication). The standard maximum Pre-Release Access is five working days. Shown below are details of those receiving standard Pre-Release Access and, separately, those receiving extended Pre-Release Access.

Standard Pre-Release Access:  
Scottish Government Health Department  
NHS Board Chief Executives  
NHS Board Communication leads

### **Extended Pre-Release Access**

Extended Pre-Release Access of 8 working days is given to a small number of named individuals in the Scottish Government Health Department (Analytical Services Division). This Pre-Release Access is for the sole purpose of enabling that department to gain an understanding of the statistics prior to briefing others in Scottish Government (during the period of standard Pre-Release Access).

Scottish Government Health Department (Analytical Services Division)