

Statistical bulletin

Child and infant mortality in England and Wales: 2014

Stillbirths, infant and childhood deaths occurring annually in England and Wales, and associated risk factors.



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Correction

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A small error occurred in Section 4 of Child and infant mortality in England and Wales: 2014 bulletin due to a processing error; the percentage of infant deaths was incorrect. We have corrected this error. We apologise for any inconvenience.

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1 . Main points

There were 2,517 infant deaths (deaths under 1 year) in England and Wales in 2014, compared with 2,686 in 2013 and 6,037 in 1984

In 2014, the infant mortality rate was 3.6 deaths per 1,000 live births, the lowest ever recorded in England and Wales

In 2014, the infant mortality rates for very low birthweight babies (under 1,500 grams) and low birthweight babies (under 2,500 grams) were 156.0 and 30.9 deaths per 1,000 live births respectively

2 . Summary

This bulletin presents final statistics on infant deaths and childhood deaths that occurred in England and Wales in 2014. It also contains additional statistics on some of the main risk factors affecting infant deaths, including age of mother and birthweight. These characteristics are derived from linking the death registration to the corresponding birth registration record. Statistics are also available for babies born in 2013 who died before their first birthday: [the 2013 birth cohort for infant deaths](#). This is the first time that these statistics have been published.

3 . Infant and perinatal mortality rates

There were 2,517 infant deaths in England and Wales in 2014. The infant mortality rate was 3.6 deaths per 1,000 live births, the lowest rate ever recorded in England and Wales and a decrease from 3.8 in 2013.

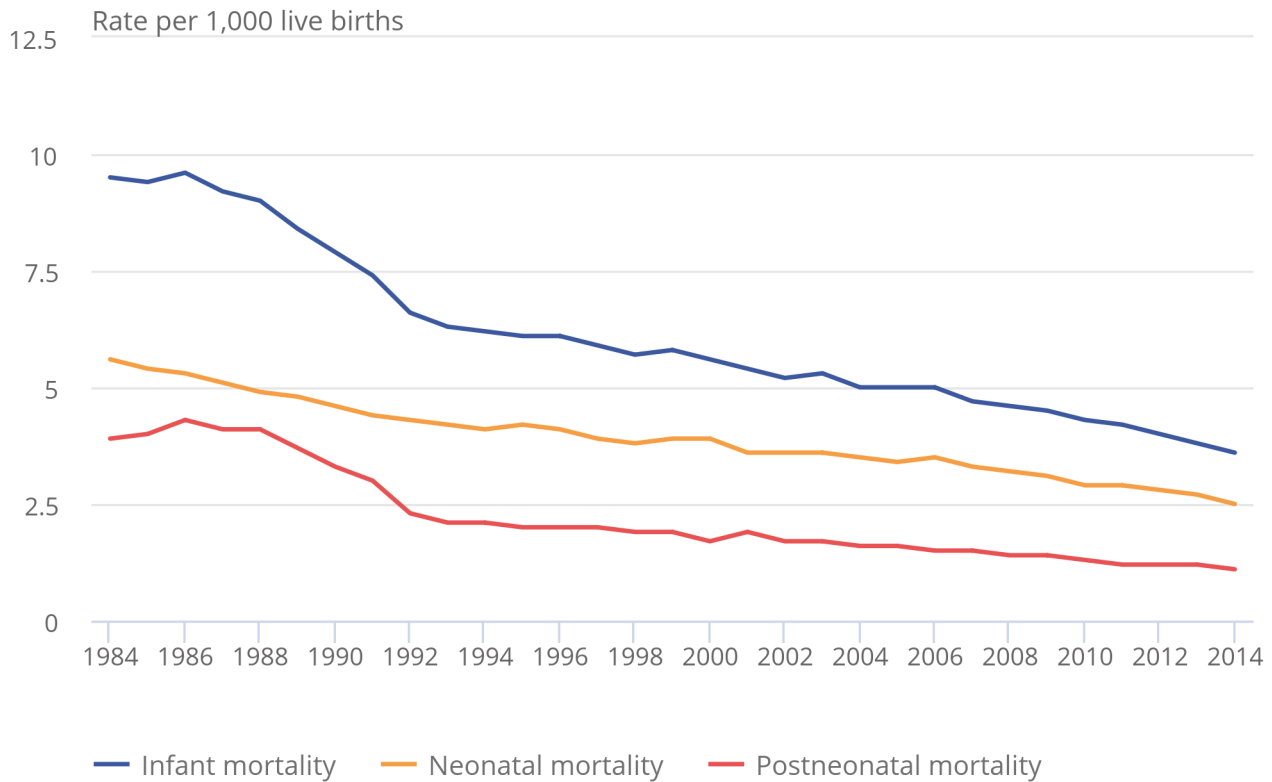
Infant mortality rates have decreased in England and Wales since the early 1900s. More recently, over the past 30 years, the rate of decline has varied; the decrease between 1984 and 1994 was more than double the decrease recorded in each of the latter 2 decades (Figure 1). Since 1984, when the rate was 9.5 deaths per 1,000 live births, there has been a 62% fall in the infant mortality rate in England and Wales. [General improvements in healthcare and more specific improvements in midwifery and neonatal intensive care](#) can partly explain the overall fall in mortality rates.

Figure 1: Infant, neonatal and postneonatal mortality rates, 1984 to 2014

England and Wales

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Source: Office for National Statistics

Notes:

1. Deaths occurring in a calendar year.
2. Neonatal – deaths under 28 days.
3. Postneonatal – deaths between 28 days and 1 year.
4. Infant – deaths under 1 year.

There has been a similar fall in neonatal mortality rates (deaths under 28 days) and postneonatal mortality rates (deaths between 28 days and 1 year) over the last 3 decades. The neonatal mortality rate and the postneonatal mortality rate have fallen by 55% and 72% respectively since 1984.

In 2014, there were 3,254 stillbirths and 1,376 deaths at age under 7 days, resulting in a perinatal mortality rate of 6.6 deaths per 1,000 total births. Since 1993 (following a change to the stillbirth definition), the rate has fallen by just over a quarter.

Several different factors are associated with increased risk of infant death and these vary according to age at death. For example, the effect of prematurity and low birthweight is greater in the first 28 days. Despite the downward trend in the infant mortality rate, evidence in the [Marmot Review: Fair Society, Healthy Lives](#) noted that factors, including births outside marriage, maternal age under 20 years and deprivation, were independently associated with an increased risk of infant mortality. The review went on to say that, “low birthweight in particular is associated with poorer long-term health outcomes and the evidence also suggests that maternal health is related to socio-economic status”.

4 . Cause of infant deaths

The ONS cause groups showed that immaturity-related conditions, for example, respiratory and cardiovascular disorders were the most common cause of infant deaths in 2014, with 40% due to these causes. Immaturity-related conditions accounted for 14% of all postneonatal deaths and 51% of all neonatal deaths.

Congenital anomalies were another major cause group, accounting for 30% of infant deaths, 31% of postneonatal deaths and 29% of neonatal deaths.

Further information on data quality, legislation and procedures relating to childhood, infant and perinatal mortality is available on our website in our [User guide to Child mortality statistics](#).

5 . Birthweight

Low birthweight, one of the known risk factors for infant deaths, can be caused by a number of factors including smoking. Babies born to women who smoke weigh, on average, [200 grams less than babies born to non-smokers](#).

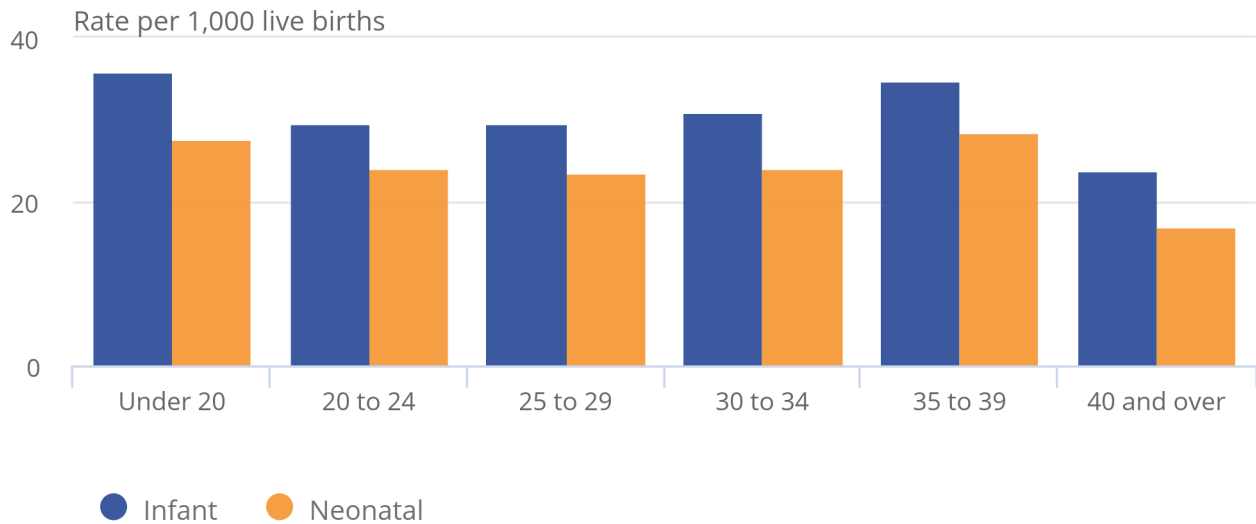
In 2014, the infant mortality rates for very low birthweight babies (under 1,500 grams) and low birthweight babies (under 2,500 grams) were 156.0 and 30.9 deaths per 1,000 live births respectively. This is much higher than the rate of 1.1 for babies of normal birthweight (over 2,500 grams).

Figure 2: Infant and neonatal mortality rates for low birthweight babies: by age of mother, 2014

England and Wales

Figure 2: Infant and neonatal mortality rates for low birthweight babies: by age of mother, 2014

England and Wales



Source: Office for National Statistics

Notes:

1. Linked infant deaths (occurred in 2014).
2. Babies weighing less than 2,500 grams.
3. Infant - deaths under 1 year.
4. Neonatal - deaths under 28 days.

For babies of low birthweight, the infant mortality rate was highest among mothers aged under 20 years and lowest among mothers aged 40 and over (35.9 and 23.8 deaths per 1,000 live births respectively) (Figure 2).

6 . Socio-economic classification

Significant [differences in infant mortality rates by socio-economic classification](#) persist in England and Wales.

Infant and perinatal mortality rates were highest for the National Statistics Socio-economic Classification (NS-SEC) groups describing routine and manual occupations (Table 1). Variations in infant and perinatal mortality by socio-economic classification may be the result of the link between increasing levels of deprivation and poorer maternal health, which can ultimately affect infant mortality.

Studies have also shown that [infant mortality rates are comparatively higher for low income families](#). Mothers from routine and manual occupation are [more likely to smoke before or during pregnancy](#) and are [less likely to breastfeed](#) which can result in poorer immunity and poorer digestive health for the baby.

Table 1: Infant mortality rates by National Statistics Socio-economic Classification (NS-SEC), 2014, England and Wales

National Statistics Socio-economic Classification (NS-SEC)	Infant mortality rate (deaths per 1,000 live births)	Perinatal mortality rate (deaths per 1,000 total births)
Higher managerial, administrative and professional occupations (Groups 1.1, 1.2 and 2)	2.1	5.1
Intermediate occupations (Groups 3 and 4)	3.0	6.0
Routine and manual occupations (Groups 5 to 7)	5.3	8.3

Source: Office for National Statistics

Notes

1. The 3 class version of NS-SEC has been used. Those who have never worked and the long-term unemployed have not been included as a separate group due to very small numbers.
2. We have used the combined method for reporting NS-SEC (using the most advantaged NS-SEC of either parent and creating a household level classification). Figures from 2012 onwards are not directly comparable with previous years when father's NS-SEC was used.

7 . Mother's country of birth

The infant mortality rate for babies of mothers born outside the UK was 3.8 deaths per 1,000 live births compared with 3.5 for mothers born inside the UK. The highest infant mortality rates were for babies of mothers born in Pakistan and Western Africa (7.4 and 6.7 deaths per 1,000 live births respectively).

Differences in infant mortality rates by mother's country of birth are likely to reflect underlying factors including mother's age, together with a range of other socio-demographic characteristics mentioned earlier in this bulletin.

8 . Child mortality rates

Between 1984 and 2014, the mortality rate for children aged 1 to 14 years fell by 64%, from 28 deaths per 100,000 population in 1984 to 10 in 2014. The mortality rate for children aged 1 to 4 years also fell by 67% over the same period, from 42 deaths per 100,000 population in 1984 to 14 in 2014.

Over the past 30 years, child death rates from respiratory and circulatory diseases in England and Wales have been falling, as they have for the whole population, reflecting advances in medical care and preventative measures as well as the [reduction in the emission of air pollutants](#). In 2014, cancers and diseases of the nervous system were the most common cause of death for children aged under 16 years.

9 . Singleton and multiple births using the 2013 birth cohort tables

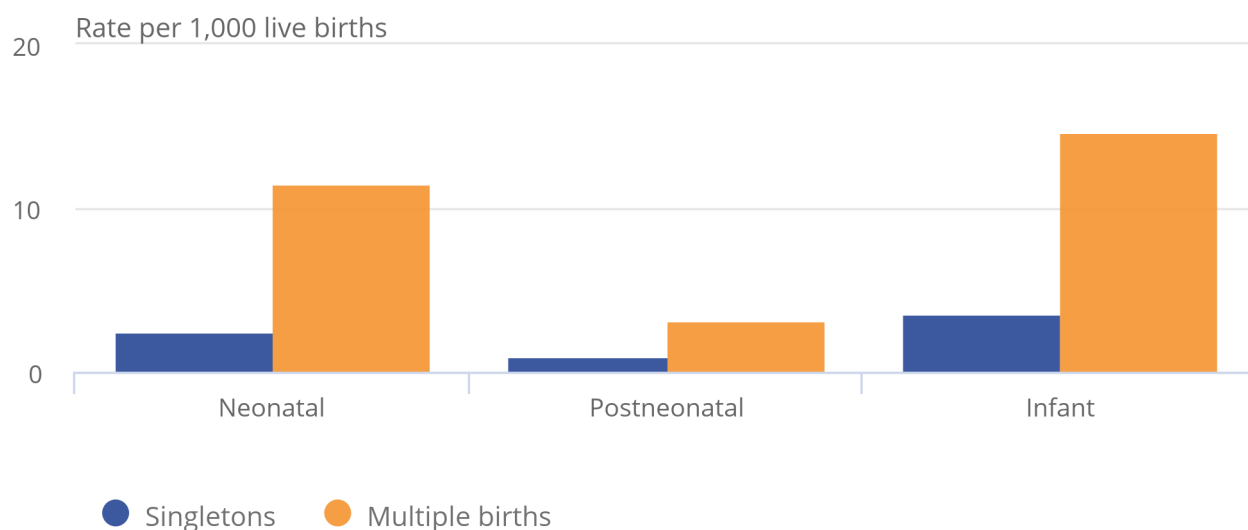
The infant mortality rate for multiple births in the 2013 birth cohort was just over 4 times higher than for singletons. This was most marked in the first 28 days of life (neonatal deaths) when the mortality rate for multiple births was nearly 5 times higher than for singletons. For those who survived beyond their first month but died before their first birthday (post-neonatal deaths), the mortality rate was over 3 times higher for multiple births compared with singleton births (Figure 3).

Figure 3: Infant, neonatal and postneonatal mortality rates for singleton and multiple births, babies born in 2013

England and Wales

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England and Wales



Source: Office for National Statistics

Notes:

1. Neonatal - deaths under 28 days.
2. Postneonatal - deaths between 28 days and 1 year.
3. Infant - deaths under 1 year.

On average multiple births tend to have lower birthweights than singletons (Table 2) as [many twins and triplets are born prematurely](#) which is 1 reason why the infant mortality rate is around 4 times higher for multiple births than for singleton births.

Table 2: Percentage of live births by birthweight for singleton and multiple births, 2014, England and Wales

	Live births under 1,500 grams	Live births under 2,500 grams	Live births 2,500 grams and over
Singleton	0.8%	5.4%	93.6%
Multiple births	8.4%	56.4%	40.9%

Source: Office for National Statistics

The highest infant mortality rates were for the extremely low birthweight babies (less than 1,000 grams) with 311.5 deaths per 1,000 live births for singletons and 299.1 for multiple births.

Although most multiple births occur naturally, many occur as a result of fertility treatment. On average, [1 in 6 of In Vitro Fertilisation \(IVF\) pregnancies result in multiple births compared with 1 in 80](#) for women who conceive naturally. With approximately 18,000 IVF babies born in the UK in 2013, this contributes considerably to the multiple birth rate. In 2009, the HFEA launched the elective single embryo transfer (eSET) policy (now called the multiple births minimisation policy). This allowed centres to develop their own eSET strategy, with the aim to reduce the UK [IVF multiple pregnancy](#) rate to 10% over a period of years.

Two-thirds (66%) of all multiple births in 2013 were to women aged 30 years or over compared with 50% of all singleton births. Mothers aged under 20 years have the highest infant mortality rate for singletons and multiple births (5.5 and 37.0 deaths per 1,000 live births respectively).

10 . Changes to child mortality outputs

[Proposed changes to child mortality publications](#) were outlined in an information note. These changes have been implemented.

11 . Further information

More data on [child mortality in England and Wales 2014](#) and [birth cohort tables for infant deaths, England and Wales, 2013](#), are available on our website.

The [Child mortality Quality and Methodology Information](#) document contains important information on:

- the strengths and limitations of the data
- the quality of the output: including the accuracy of the data, how it compares with related data
- uses and users
- how the output was created

Further information on data quality, legislation and procedures relating to childhood, infant and perinatal mortality is available on our website in our [User guide to Child mortality statistics](#).

[Pregnancy and ethnic factors influencing births and infant mortality \(previously called Gestation specific mortality\)](#) presents data on live births and infant deaths by gestational age, while [unexplained deaths in infancy](#) includes both sudden infant deaths and deaths for which the cause remained unknown or unascertained.

For infant mortality data for other UK countries (based on registrations) please see the [latest infant death statistics for Northern Ireland](#) and the [latest infant death statistics for Scotland](#).

For infant mortality data for the UK (based on registrations) please see the latest [Vital Statistics: Population and Health Reference Tables](#).

The [Births summary tables](#), England and Wales provide main summary statistics for live births in England and Wales.

More general information on the collection, production and quality of mortality data is available in [Mortality metadata](#).

12. Background notes

1. Infant and child mortality figures are based on deaths that occurred in the reference year. We also publish infant mortality statistics according to the year in which the death was registered which may differ to those based on the year the death occurred. The long history of infant mortality statistics as a main indicator of the health of the nation is based on date of occurrence ([as defined by WHO](#)). Figures based on date of registration provide more timely infant mortality statistics.
2. The live birth and stillbirth numbers are based on all births that occurred in the reference year, plus any late birth registrations from the previous year.
3. Definitions used in child mortality statistics:

Stillbirth – born after 24 or more weeks completed gestation and which did not, at any time, breathe or show signs of life.

Early neonatal – deaths under 7 days.

Perinatal – stillbirths and early neonatal deaths.

Neonatal – deaths under 28 days.

Postneonatal – deaths between 28 days and 1 year.

Infant – deaths under 1 year.

Childhood – deaths between 1 and 15 years of age.

Stillbirths and perinatal mortality rates are reported per 1,000 total births (live and stillbirths).

Early neonatal, neonatal, postneonatal and infant mortality rates are reported per 1,000 live births. Childhood mortality rates are reported per 100,000 population of the same age.

4. Linking infant deaths to their corresponding birth registration improves our understanding of the main characteristics of the baby and the baby's parents (these include the baby's birthweight; mother's age; mother's country of birth; parent's socio-economic classification; and the number of previous children). In 2014, 99% of infant deaths in England and Wales were successfully linked to their birth registration record. The linkage rate has remained consistent since the linking exercise began. The main reasons for an infant death not being linked are either; a birth registration record cannot be found, or the birth was registered outside England and Wales.
5. The 10th Revision of the [International Statistical Classification of Diseases and Related Health Problems \(ICD-10\)](#) has been used to classify cause of death at age 28 days and above. The Office for National Statistics (ONS) code cause of death using the World Health Organization's (WHO) International Classification of Diseases (ICD). Between January 2001 and December 2010, ONS used the Mortality Medical Data System (MMDS) ICD-10 version 2001.2 software provided by the United States National Center for Health Statistics (NCHS) to code cause of death. In January 2011, this was updated to version 2010, which incorporated most of the WHO amendments authorised up to 2009. There is further

information in the [results of the bridge coding study](#). On 1 January 2014, ONS changed the software used to code cause of death to a package called [IRIS](#) (version 2013), which incorporates all official updates to ICD-10 approved by WHO, timetabled for implementation before 2014. Dual coding studies have been published which detail the impact on [mortality statistics](#) and [infant mortality](#).

6. On 1 October 1992, the legal definition of a stillbirth was changed in England and Wales from a baby born dead after 28 or more weeks completed gestation to one born dead after 24 or more weeks completed gestation. This means that perinatal and stillbirth data for 2014 can only be compared with data from 1993 onwards.
7. The population estimates used for the calculation of mortality rates are the latest consistent estimates available at the time of production. Further information on [population estimates](#) and their methodology can be found on our website.
8. A list of the names of those given pre-publication access to the statistics and written commentary is available in [pre-release access - Child mortality in England and Wales](#). The rules and principles which govern pre-release access are featured within the [Pre-release Access to Official Statistics Order 2008](#).
9. Special extracts and tabulations of child mortality data for England and Wales are available to order (subject to legal frameworks, disclosure control, resources and our [charging policy](#), where appropriate). Such enquiries should be made to Vital Statistics Outputs Branch (vsob@ons.gsi.gov.uk or telephone: +44 (0)1329 444 110). All [user requested data](#) will be published onto the website.
10. We would welcome feedback on the content, format and relevance of this release. Please send feedback to the postal or email address above.
11. [National Statistics](#) are produced to high professional standards set out in the [Code of Practice for Official Statistics](#). They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.