Office for National Statistics

Statistical bulletin

Unexplained deaths in infancy, England and Wales: 2021

Annual data on sudden infant deaths in England and Wales and infant deaths for which the cause remained unascertained after a full investigation.

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1 . Main points

- There were 166 unexplained deaths of infants (aged under one year) in England and Wales in 2021, accounting for 7.1% of all infant deaths.
- The provisional unexplained infant mortality rate was 0.27 deaths per 1,000 live births in 2021; this was higher than in 2020, but lower than in 2019 and consistent with the long-term trend.
- Sudden infant deaths accounted for 64% of unexplained deaths in 2021.
- Unexplained infant deaths remained more likely to occur in males, before the age of four months, and in low birthweight babies.
- In 2021, unexplained mortality was highest for infants born to mothers aged under 20 years (0.95 deaths per 1,000 live births), and lowest for infants born to mothers aged 35 to 39 years (0.14 deaths per 1,000 live births).
- The unexplained infant mortality rate had been generally decreasing since records began in 2004, but has remained stable since 2014.

2 . Trends in unexplained infant deaths

There were 166 unexplained infant deaths in England and Wales in 2021. The unexplained infant mortality rate is used to monitor change over time because it takes into account the number of live births each year. The unexplained infant mortality rate has generally decreased since 2004 (Figure 1), then remained more stable from 2014 onwards, at around 0.30 deaths per 1,000 live births.

A general declining trend is also seen for the overall infant mortality rate in England and Wales. For details, see Table 1 of the accompanying dataset in our Child and infant mortality in England and Wales: 2021 bulletin.

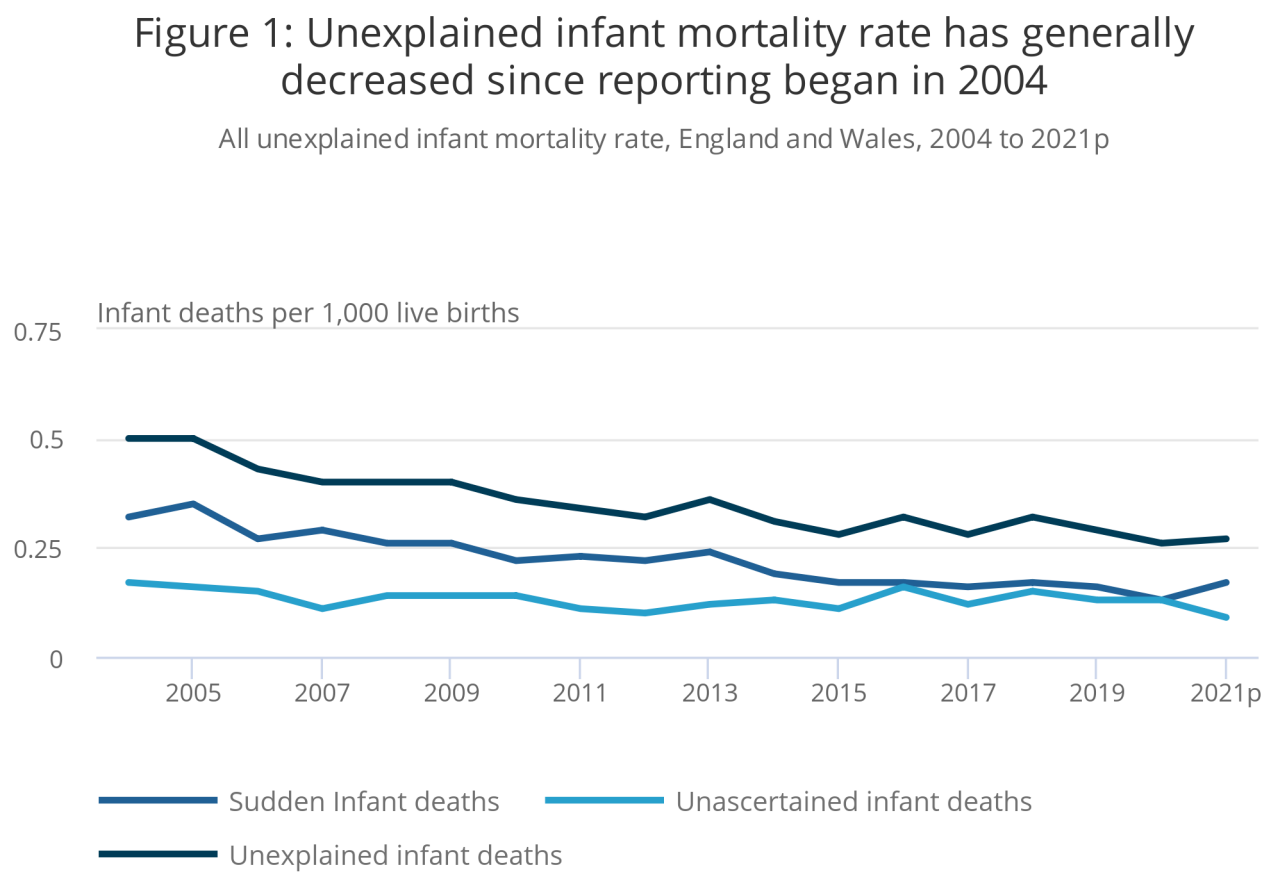
The unexplained nature of these deaths means that there can be a relatively long delay before investigations are completed and the death is registered. Numbers and rates for 2021 are therefore provisional (marked as “p”) and will be finalised when the 2022 provisional information is published.

For 2020, 12 additional deaths registrations were received in the year following the provisional analysis, causing the unexplained infant mortality rate to be revised from 0.24 to 0.26 deaths per 1,000 live births. Late registrations were higher in 2018 and 2019, at 15 and 17, respectively, but lower between 2013 and 2017, when there was an average of five late registrations received each year.

An unexplained infant death can be recorded as a sudden infant death, or as an unascertained death. In 2021, the rate of sudden infant deaths rose from 0.13 deaths per 1,000 live births to 0.17 deaths per 1,000 live births, while the rate of unascertained infant deaths fell from 0.13 deaths per 1,000 live births to 0.09 deaths per 1,000 live births. The overall unexplained infant mortality rate increased slightly because sudden infant deaths accounted for the majority (64%) of unexplained infant deaths (Table 1).

Figure 1: Unexplained infant mortality rate has generally decreased since reporting began in 2004

All unexplained infant mortality rate, England and Wales, 2004 to 2021p



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

Because of the small number of unexplained infant deaths recorded each year, the data tend to fluctuate over time, and therefore year on year changes in rates should be interpreted with caution.

Unexplained infant deaths include sudden infant deaths and unascertained infant deaths. Since 2004, sudden infant deaths have generally declined at a faster rate than unascertained deaths. This could be explained by:

- improved availability and awareness of guidance about safer infant sleep practices for parents
- a decrease in maternal smoking, as documented in official NHS statistics

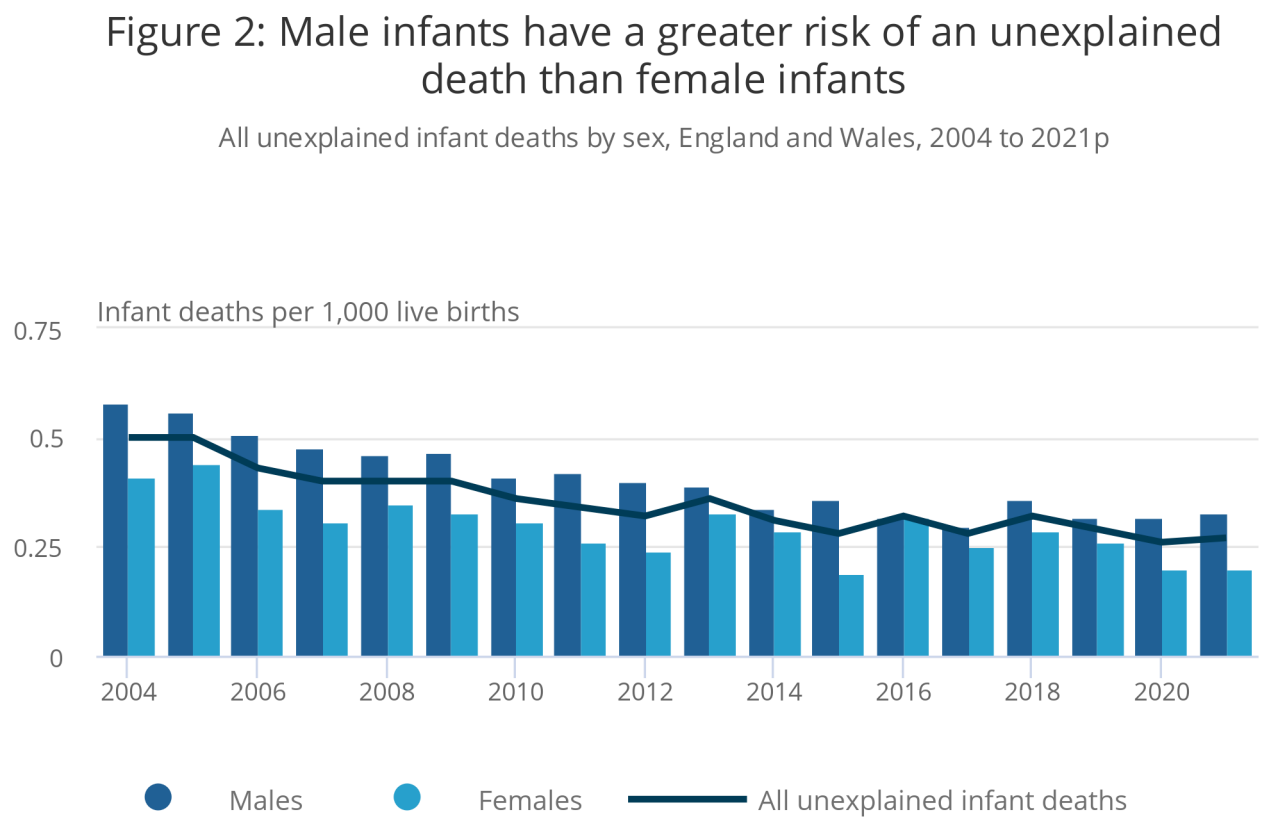
3 . Birth characteristics

Sex

In 2021, the unexplained mortality rate for male infants was 0.33 unexplained deaths per 1,000 live births, compared with 0.20 unexplained deaths per 1,000 live births for female infants. Male infants have generally been at higher risk of unexplained infant death than females (Figure 2). From 2004, the difference between males and females narrowed until 2016, when it began to widen again.

Figure 2: Male infants have a greater risk of an unexplained death than female infants

All unexplained infant deaths by sex, England and Wales, 2004 to 2021p



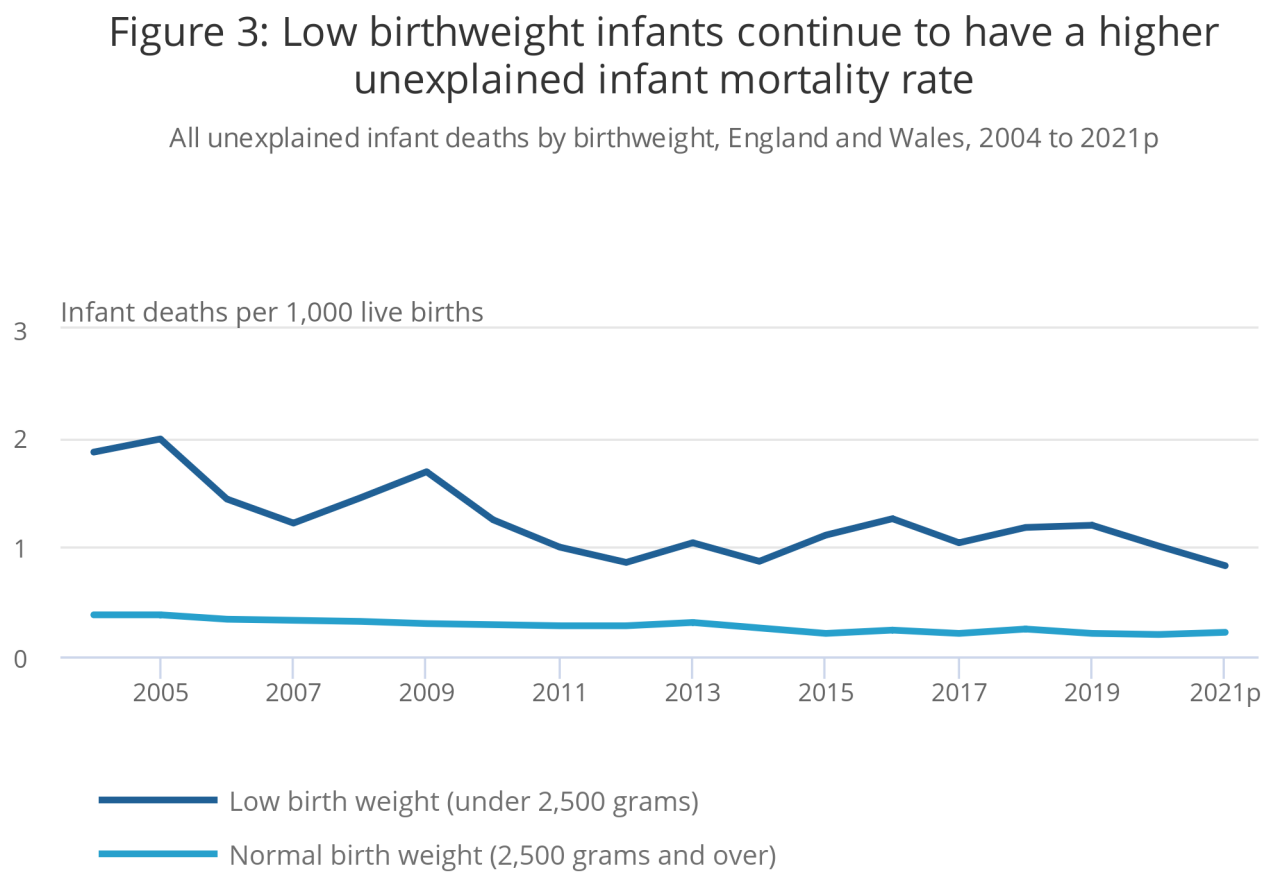
Source: Deaths in England and Wales from the Office for National Statistics

Birthweight

The World Health Organisation (WHO) defines a low birthweight infant as weighing under 2,500 grams at birth. Overall, the unexplained mortality rate for low birthweight infants has fallen at a faster rate than for normal birthweight infants since 2004 (Figure 3). However, in 2021, low birthweight infants were still 3.8 times more likely to die from an unexplained cause than normal birthweight infants.

Figure 3: Low birthweight infants continue to have a higher unexplained infant mortality rate

All unexplained infant deaths by birthweight, England and Wales, 2004 to 2021p



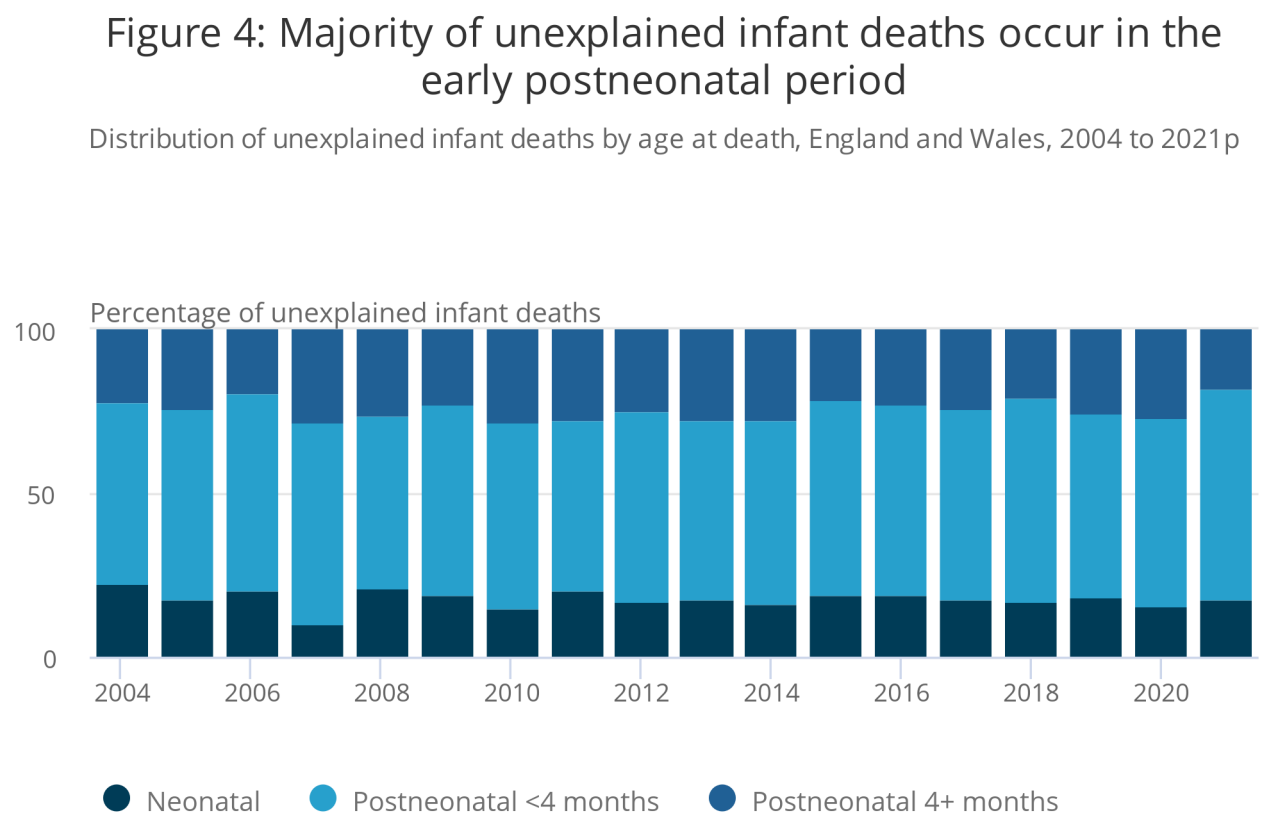
Source: Deaths in England and Wales from the Office for National Statistics

Age

Infant deaths of any cause are more likely to occur in the neonatal period. In contrast, unexplained infant deaths are more likely to occur among postneonatal infants. In 2021, the large majority (83%) of all unexplained infant deaths occurred in the postneonatal period, with almost two-thirds (65%) of all unexplained infant deaths being postneonatal infants aged under four months. These percentages have remained fairly consistent over time (Figure 4).

Figure 4: Majority of unexplained infant deaths occur in the early postneonatal period

Distribution of unexplained infant deaths by age at death, England and Wales, 2004 to 2021p



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

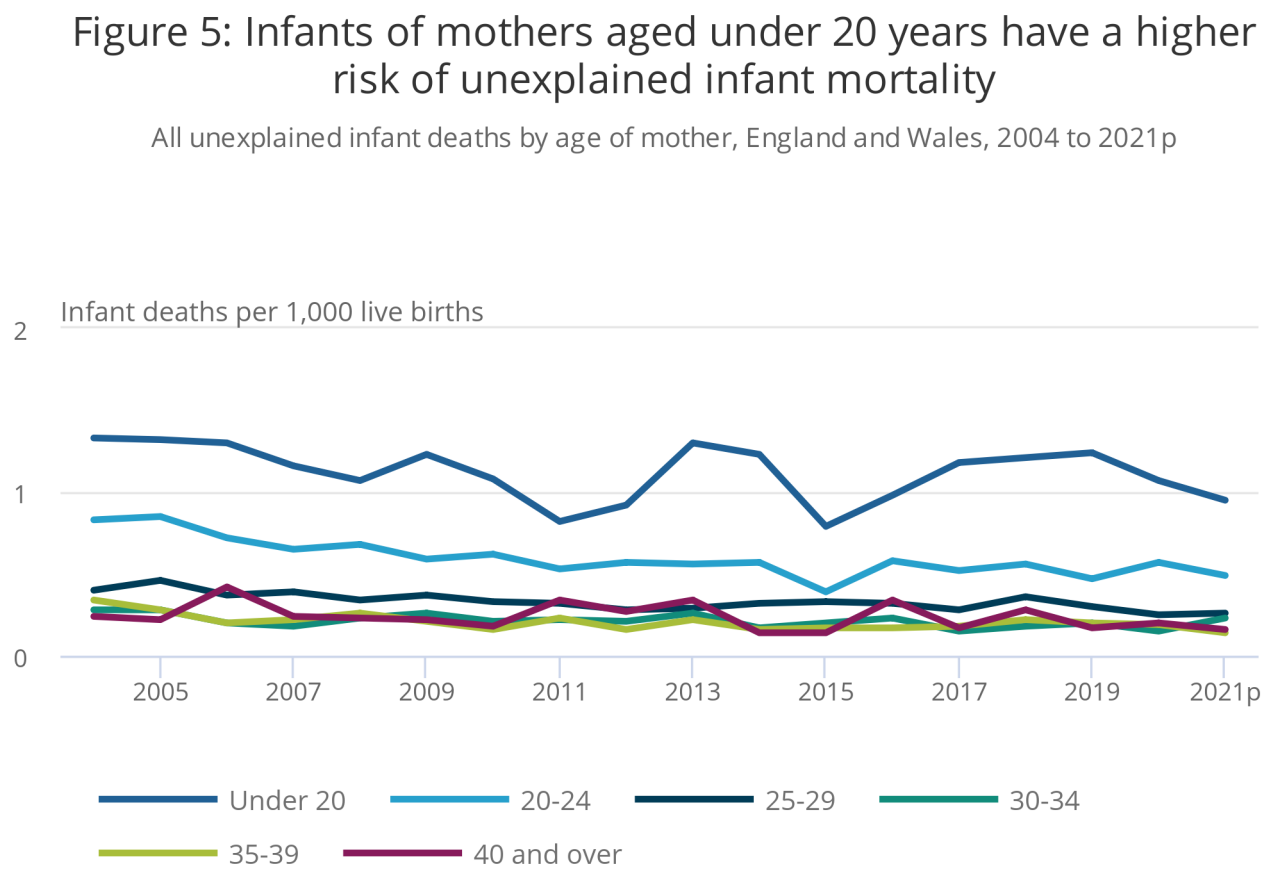
4 . Mother’s characteristics

Age

In 2021, the unexplained infant mortality rate was highest for mothers aged under 20 years, at 0.95 deaths per 1,000 live births (Figure 5). It was lowest for mothers aged 35 to 39 years (0.14 deaths per 1,000 live births) and aged 40 years and over (0.16 deaths per 1,000 live births).

Figure 5: Infants of mothers aged under 20 years have a higher risk of unexplained infant mortality

All unexplained infant deaths by age of mother, England and Wales, 2004 to 2021p



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

In general, the infant mortality rate is higher in babies of mothers born outside of the UK. For further details, see Table 11 of the accompanying dataset in our Child and infant mortality in England and Wales: 2021 bulletin.

Conversely, for unexplained infant deaths, the mortality rate for babies of mothers born in the UK was more than double the rate for babies of mothers born outside of the UK in 2021, at 0.31 deaths per 1,000 live births compared with 0.14 deaths per 1,000 live births. For further details, see Table 7 of our accompanying dataset.

For further data on unexplained infant deaths by month of occurrence, region, marital status, National Statistics Socio-economic classification (NS-SEC), and number of previous children, see our Main tables: Unexplained deaths in infancy, England and Wales dataset.

Data on infant deaths that were referred to a coroner for investigation, regardless of the cause of death, are not commented on within this statistical bulletin, but can be found in our Unexpected deaths in infancy, England and Wales dataset.

5 . Unexplained infant mortality data

Main tables: Unexplained deaths in infancy, England and Wales
Dataset | Released 29 November 2023
Annual data on sudden infant deaths in England and Wales and deaths for which the cause remained unascertained after a full investigation.

Unexpected deaths in infancy in England and Wales
Dataset | Released 29 November 2023
Annual data on unexpected deaths (certified by a coroner) and infant deaths by selected causes in England and Wales.

Unexplained deaths in infancy, England and Wales
Dataset | Released 2006 to 2013
Historical reports on unexplained infant deaths in England and Wales from the Office for National Statistics' (ONS) National Archives, which includes sudden infant deaths and deaths for which the cause remained unknown or unascertained.

Unexpected deaths in infancy, England and Wales: historical data
Dataset | Released 19 August 2015
Historical annual data on unexpected deaths (certified by a coroner) and infant deaths by selected causes in England and Wales for the period 2004 to 2013.

6 . Glossary

2021p

2021 provisional unexplained infant mortality data.

Infant death

The death of those aged under one year.

Infant mortality rate

The number of infant deaths, per 1,000 live births.

Neonatal

The death of an infant aged under 28 days.

Postneonatal death

The death of an infant aged between 28 days and one year.

Sudden infant deaths

Coded to the International Classification of Diseases Tenth Revision (ICD-10) code R95 "sudden infant death syndrome (SIDS)", which includes any mention of "sudden infant death", "cot death", "SIDS", "crib death", or another similar term anywhere on the death certificate.

Unascertained deaths

Coded to the ICD-10 code R99 "other ill-defined and unspecified causes of mortality", which includes cases where the only mention on the death certificate is unascertained death.

Unexplained infant deaths

Unexplained infant death includes both sudden infant death (ICD-10 code R95) and unascertained (ICD-10 code R99) deaths. Figures are based on death occurrences.

7 . Measuring the data

The unexplained infant mortality release is compiled from information supplied when births and deaths are certified and registered as part of civil registration.

Live birth data are supplied to the Office for National Statistics (ONS) by the General Register Office. Births in England and Wales are required to be registered within 42 days of the birth, along with information on characteristics of both the mother and the infant.

Figures in our Main tables: Unexplained deaths in infancy, England and Wales dataset are based on deaths which occurred between 2004 and 2021. The 2020 and 2021 data include deaths for which ONS received the registration by 28 June 2023. These figures will not match those published in the Child and Infant mortality in England and Wales: 2021 bulletin, as this was published on 1 March 2023.

Unexplained infant deaths are referred to a coroner who may order a post-mortem or full inquest to ascertain the reasons for the death. The time taken to investigate the circumstances of the death often result in a delay in the coroner registering the death. Therefore, we publish provisional figures to allow for late death registrations. Figures for 2020 have been finalised and figures for 2021 are provisional. The 2021 figures will be finalised in the next annual release.

Important information for interpreting unexplained deaths in infancy statistics

- Figures represent infant deaths (deaths of those aged under one year) that occurred in England and Wales in the calendar year shown; these include infant deaths whose mother's usual residence was outside England and Wales.
- Unexplained infant deaths include sudden infant deaths ("cot deaths") coded to the International Classification of Diseases Tenth Revision (ICD-10) code R95, and unascertained deaths (ICD-10 code R99); the latter are infant deaths where no medical cause was recorded.
- Infant deaths are linked to their corresponding birth registration by NHS number, name and date of birth, to enable analysis of risk factors and demographic characteristics such as birthweight and maternal age.

For more information, see our User guide to mortality statistics methodology.

8 . Strengths and limitations

Quality

For further information on data quality, legislation and procedures, see our User guide to child and infant mortality statistics methodology. For details about the strengths and limitations of the data, methods used, and data uses and users, see our Unexplained deaths in infancy: England and Wales Quality and Methodology Information (QMI) .

Coronavirus (COVID-19) and infant mortality statistics

Since 2016, there has been a progressive increase in registration delay for unexplained infant deaths. The coronavirus (COVID-19) pandemic is likely to have lengthened existing registration delays because of delays in coroner's proceeding during this time. This was reflected in the larger-than-average differences between the provisional and final data for both 2019 and 2020. Next year, we will have a more accurate picture of late death registrations for deaths that occurred in 2021.

National Statistics status for infant mortality

National Statistics status means our statistics meet the highest standards of trustworthiness, quality and public value, and it is our responsibility to maintain compliance with these standards.

You can view our most recent Assessment of compliance with the Code of Practice for Official Statistics (PDF, 152KB), which was completed in May 2012. This document confirms National Statistics status.

We have made improvements since the last review, including:

- a user consultation, which was conducted in 2017 to improve presentation and to meet our user needs; for details, see the response to the consultation in the Infant mortality outputs review
- analysis on the Impact of registration delays on mortality statistics
- updating our Policy for protecting confidentiality in tables of births and deaths statistics

9 . Related links

Vital Events Reference Tables 2021 for Scotland
Publication | Updated 20 July 2023
Data for Scotland from the National Records of Scotland on stillbirths and infant deaths based on registrations.

Deaths registered in England and Wales: 2021 (refreshed populations)
Bulletin | Released 27 January 2023
Registered deaths by age, sex, selected underlying causes of death and the leading causes of death. Contains mortality rates and death registrations by area of residence and single year of age.

Child and infant mortality in England and Wales: 2021
Bulletin | Released 1 March 2023
Stillbirths, infant and childhood deaths occurring annually in England and Wales, and associated risk factors.

Stillbirths and Infant Deaths Section of the 2022 Registrar General Annual Report
Publication | Released 26 October 2023
Data for Northern Ireland from the Northern Ireland Statistics and Research Agency (NISRA) on stillbirths and infant deaths based on registrations.

Births in England and Wales: 2022
Bulletin | Released 17 August 2023
Live births, stillbirths and the intensity of childbearing, measured by the total fertility rate.

Health Statistics Quarterly, No. 39, Autumn 2008
Report | Released 28 August 2008
Data covering trends in UK health, and containing commentary on health findings, topical articles illustrated with colour charts and diagrams, statistical graphs and tables up to 2008.

10 . Cite this statistical bulletin

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