

European Perinatal Health Report, 2015-2019

Produced by the Euro-Peristat Network

The health of newborn babies and their mothers are key indicators of the health and wellbeing of populations. Although stillbirth and infant mortality rates have fallen substantially in recent decades, the burden of mortality and morbidity remains a public health priority in Europe and there is high variability in birth outcomes between countries.

Because the countries of Europe share comparable standards of living and generally well-developed healthcare systems, but are very diverse in their health policies and practices, examining differences in perinatal indicators can shed light on the policies and practices that counteract health risks and optimise the health of parents and babies. These indicators may also allow countries to benchmark their performance and identify areas where progress is needed.

One of the obstacles to comparing European countries is that they collect their national statistics in different ways, so it is difficult to make valid comparisons. The Euro-Peristat collaboration was established to deal with this problem. The network defined a set of 10 core and 20 recommended indicators and developed methods to produce high quality, comparable indicators using common inclusion criteria and categories with the help of experts from member countries.

In this report, the fifth by the network, participating members in 24 European Union member states and Iceland, Norway, Switzerland and the United Kingdom contributed data on nine Euro-Peristat core indicators for the five years from 2015 to 2019. Data collection was carried out as part of a larger European Horizon 2020 project, the Population Health Information Research Infrastructure (PHIRI) project, which aims to structure and to promote exchange of population data between European countries. Data were collected from national statistical systems using a new federated data collection protocol which improves harmonisation of indicators. This new approach requires that all data be available in one source, which was a limit for some countries. Further, the new data collection protocol is not readily adaptable for the recording of very rare events, such as maternal death, therefore maternal mortality (Euro-Peristat's Core Indicator 6) is not included in this report.

REPORT HIGHLIGHTS

Stillbirth and neonatal mortality rates continued to decline in Europe for the most part, but these decreases were less pronounced than in previous years and some countries had stable or increasing rates.

Stillbirths

Stillbirths are fetal deaths at or after 24 weeks of gestation

- In 2019, the median stillbirth rate at or after 24 weeks of gestation was 3.2 per 1000 total live and stillbirths with an interquartile range (IQR) from 2.8 to 3.8 per 1000 total births and a range from 1.8 to 4.7 per 1000 total births.
- While Euro-Peristat uses a 24 week threshold to more completely report on the burden of stillbirth, international comparisons generally utilise a 28 week threshold. In 2019, the median stillbirth rate with this threshold was 2.5 per 1000 total births, with a range from 1.4 to 3.7 per 1000 total births. Rankings of countries using these two thresholds were similar.
- Combining data from across European countries on annual changes over the years 2015 to 2019 finds a slight overall decline, estimated at 1% per year, but many countries showed no change or even slight increases in stillbirth, such as in Belgium and Germany. This is in contrast with previous Euro-Peristat reports where more marked and widespread reductions were observed

Neonatal mortality

Neonatal deaths are deaths of babies in the 27 days after a live birth. Babies born before 22 weeks of gestation were excluded in line with international definitions.

- Some countries could not provide data on neonatal mortality because these data are not linked to necessary birth records, including, for instance, France and Germany.
- Among countries providing data, the median neonatal mortality rate for birth at or after 22 weeks of gestation was 2.2 per 1000 live births.
- Rates ranged from 1.5 per 1000 live births or lower in Slovenia, Iceland, Finland, Norway, the Czech Republic, Estonia, and Sweden to over 3.5 per 1000 live births in Northern Ireland, Malta, Romania, and Bulgaria. Some of this variation in neonatal mortality rates is related to differences in national policies about termination of pregnancy for congenital conditions.
- There was a continued decline in neonatal mortality in many countries from 2015 to 2019, but the magnitude of decline was lower than in previous Euro-Peristat reports.

Infant mortality

Infant deaths are deaths of babies less than a year after live birth. Babies born before 22 weeks of pregnancy were excluded in line with international definitions

- Only two-thirds of participating European countries were able to provide this indicator, illustrating the lack of routine linkage between infant death data and birth data. The inability to associate this key indicator with other perinatal health data is a major limit for surveillance and developing policies and practices to reduce infant mortality.
- In the 19 countries providing data, infant mortality rates ranged from less than 2.0 per 1000 live births in Iceland, Estonia, Sweden and Norway to more than 3.5 per 1000 live births in Croatia, Belgium, Poland and Hungary.

Rates of preterm birth and low birth weight varied widely across Europe, but decreased over time in most countries.

Low birth weight

Low birth weight is defined as a birth weight under 2500 grams

- In 2019, the percentage of low birthweight babies ranged from 4.0% to 10.1% of live births. There were considerable geographic differences, with percentages tending to be lowest in the northern European countries (less than 4.5% in Finland, Sweden, Latvia, Estonia, Norway, Lithuania and Denmark) and highest in southern and eastern Europe (Cyprus, Portugal, Spain, Slovakia and Hungary).
- In most countries of Europe, the percentage of low birthweight babies decreased slightly from 2015 to 2019.

Preterm birth

Preterm birth is birth before 37 completed weeks of pregnancy

- In 2019, preterm birth among live births varied from 5.3% to 11.3%, with a median of 6.9% and IQR of 6.1% to 7.5%.
- Preterm birth rates decreased across Europe in all but four countries from 2015 to 2019, with an overall estimated annual decrease of 1%.
- Differences between countries in gestational age at delivery are evident across the entire gestational age distribution. Early term (37-38 weeks of gestation) births varied between 17.0% and 42.8% (median 22.6%, IQR 19.1% to 26.2%). Post-term (at or after 42 weeks) births were generally uncommon (less than 1% in most countries), with some exceptions (>4% in Sweden and Norway).

Population risk factors for perinatal mortality and morbidity changed over time: decreasing multiple birth rates were observed in most countries, while maternal age at childbirth continued to increase.

Multiple births

- There is a wide variation in twin pregnancy rates in the European countries, with a range from 11.9 to 23.6 per 1000 women having a live birth or stillbirth in 2019. The median rate was 15.8 per 1000 women, with an IQR of 13.2 to 17.5.
- Over the period covered in this report, the multiple birth rate decreased in almost all countries with a median change between 2015 and 2019 of -1.1 per 1000 women (IQR from -1.8 to 0.1).
- One reason for this decrease could be increasingly widespread adoption of single embryo transfer to limit multiple pregnancies from ART. These decreases in multiple pregnancy rates could contribute to better newborn and maternal outcomes.

Age at childbirth

- In Europe there are relatively few teenage mothers and this continues to decline; the median percentage of women aged under 20 years old giving birth in 2019 was 1.7%, with an IQR of 1.1% to 2.4%. The highest percentages of teen mothers (>3%) were observed in Malta, Wales and Slovakia.

- In contrast, the percentage of women in Europe giving birth at older ages continues to rise. Between 2015 and 2019, the median increase in the percentage of mothers aged 35 years and older was 2.6% (IQR 1.6% to 3.7%). In 2019, the median was 23.1% with an IQR from 21.8% to 25.8%. For the percentage of women aged 40 and over, the median was 4.5% with an IQR from 4.0% to 5.1%
- Countries with the higher percentages of childbearing women 35 years and older are Luxembourg (31.6%), Portugal (33.2%), Italy (34.4%), Ireland (39.4%) and Spain (40.0%). In these countries, over 5% of all deliveries occur among women 40 years of age and over, with highs over 7% in Italy, Portugal and Spain.
- Given the markedly higher risks of pregnancy complications among women aged over 35 and in particular among those aged over 40, these demographic changes are likely to require modification to healthcare provision to ensure safety and good maternal and neonatal outcomes.

There is a large variation in caesarean section rates and contrasting trends – in some countries caesarean section rates are stable or decreasing, whereas elsewhere they rose between 2015 and 2019.

- A few countries, notably Portugal and England, could not provide data on delivery mode due to their inability to link data on health services to routine databases that collect information on perinatal outcomes.
- In 2019, the median caesarean section rate in countries providing data was 26.0%, with an IQR of 20.7% to 32.1% and ranging widely from 16.4% to 53.1%.
- The median instrumental vaginal delivery rate was 6.1% (IQR 3.5% to 9.8%), with a range from 1.4% to 13.8%.
- Caesarean section varied geographically, with lower caesarean section rates in northern Europe and higher rates in southern and central Europe.
- Trends over time in caesarean section contrasted markedly. Twelve countries had decreasing caesarean section rates, whereas nine countries had increases and others were stable.

Yearly reporting of comparable indicators of maternal and newborn health in Europe is feasible and needed to support perinatal health policy

This report illustrates the feasibility and importance of compiling comparable data about perinatal health on an annual basis.

This new protocol for data collection also provides a clearly measurable quality benchmark for European perinatal health information systems. At a minimum, all countries should be able to provide data in accordance with the standards set out by the Euro-Peristat common data model. Nonetheless, not all countries are currently able to do so. The inability to associate certain key indicators – notably the neonatal and infant mortality and caesarean section rates – with other perinatal health data is a major limit for surveillance and evaluation of outcomes and for developing policies to improve maternal and infant outcomes.

Sustainable structures are needed on the European level to leverage the investment of the Euro-Peristat network in developing comparable methods and tools and to permit federated collection, analysis and reporting of perinatal health data on a regular basis.

NOTES:

- On November 15th 2022, Euro-Peristat published the European Perinatal Health Report "Core indicators of the health and care of pregnant women and babies in Europe from 2015 to 2019." It can be downloaded free of charge as a PDF from <http://www.europeristat.com>.
- Euro-Peristat is coordinated by the Institut national de la santé et de la recherche médicale (INSERM) in Paris
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- The names and affiliations of all the collaborators from each participating country are listed in Appendix A of the report and further information is available on the Euro-Peristat website.
- The common data model and data scripts used to produce the report are available at: <https://zenodo.org/record/6483177>.

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