



NATIONAL PERINATAL
EPIDEMIOLOGY CENTRE



Perinatal Mortality in Ireland

Lay Summary 2016

National Perinatal Epidemiology Centre

The National Perinatal Epidemiology Centre (NPEC) works with the maternity services in Ireland. The NPEC is directed by Professor Richard A Greene and are a team of midwives, researchers, epidemiologists, administrators and doctors. **Every time a mother gives birth in Ireland, the important interventions, the good outcomes and the complications are recorded and analysed at a national specialist centre.**¹ The NPEC produces annual audit reports on perinatal mortality (death of a baby around the time of birth), maternal morbidity (ill health during or following birth), home births and very low birth weight babies in Ireland. At local hospital level, the NPEC provides customised feedback to individual hospitals on how they compare against the national average. The NPEC is funded by the Health Service Executive (HSE) and is based at Cork University Maternity Hospital in the UCC Department of Obstetrics and Gynaecology. The Centre continues to build on its existing portfolio of audit and quality review.

What is clinical audit?

Clinical audit is a process that seeks to improve patient care and outcomes through systematic review and evaluation of current practice against research based standards.

What is Epidemiology?

Epidemiology is the study (scientific, systematic, and data-driven) of the distribution (frequency, pattern) and determinants (causes, risk factors) of health-related states and events (not just diseases) in specified populations (neighbourhood, school, city, state, country, global).²

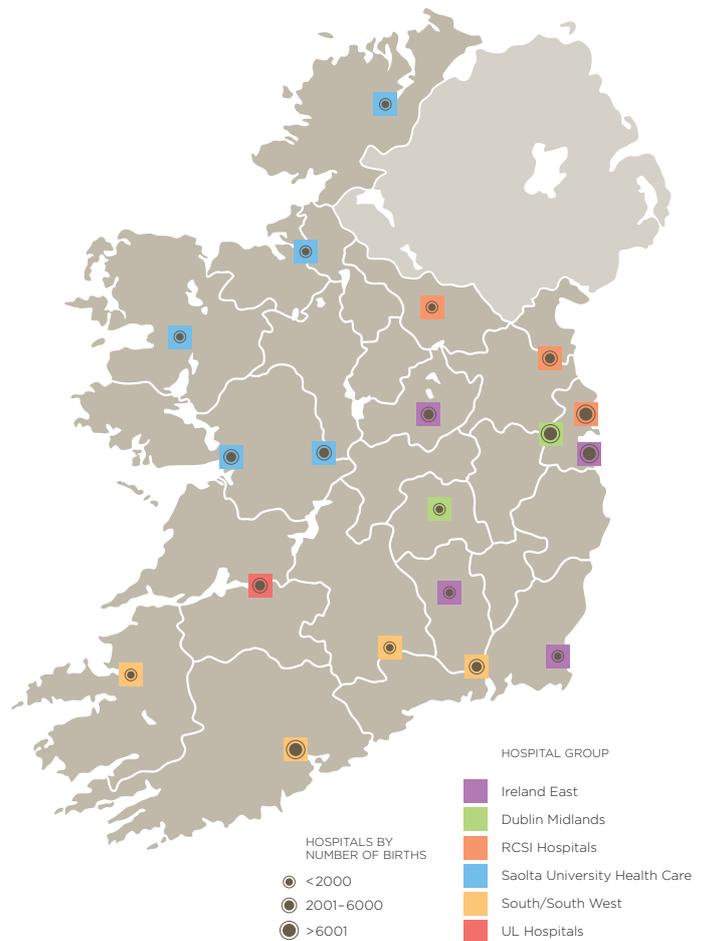
Baby Deaths in the Republic of Ireland in 2016

This is the ninth report of the national clinical audit on perinatal mortality in Ireland published by the NPEC.

In 2016 there were 407 perinatal deaths occurring during pregnancy or shortly after birth among 64,133 births with a birthweight of at least 500g or at least 24 weeks gestation at delivery.

Stillbirths, early neonatal and late neonatal deaths accounted for 250 (61.4%), 124 (30.5%) and 33 (8.1%) of the 407 deaths, respectively.

The perinatal mortality rate (PMR) was 5.8 deaths per 1,000 births or 1 in 172 births.



64,133 BABIES BORN IN IRELAND IN 2016

9th ANNUAL REPORT	407 PERINATAL DEATHS	250 STILL BIRTHS	124 EARLY NEONATAL	33 LATE NEONATAL	5.8 DEATHS PER 1,000 BIRTHS
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Full report available at: www.ucc.ie/en/npec/

¹ health.gov.ie/blog/press-release/tanaiste-announces-new-national-perinatal-epidemiology-centre-in-cork-university-hospital/

² www.cdc.gov/careerpaths/k12teacherroadmap/epidemiology.html

Definitions

Stillbirth: a child born weighing 500 grammes or more or having a gestational age of 24 weeks or more who shows no sign of life.

Early neonatal death: Death of a live born baby occurring within 7 completed days of birth.

Late neonatal death: Death of a live born baby occurring after the 7th day and within 28 completed days of birth.

Overall perinatal mortality rate (PMR): Number of stillbirths and early neonatal deaths per 1,000 births (live births and stillbirths from 24 weeks gestation or weighing >500g).

Corrected PMR: Perinatal mortality rate excluding perinatal deaths associated with or due to a major congenital malformation.

Major congenital abnormality: Any genetic or structural defect arising at conception or during embryogenesis incompatible with life or potentially treatable but causing death.

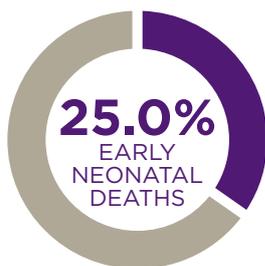
Fetal growth in pregnancy

A notable fact from the 2016 report is that low birthweight is associated with perinatal death. Almost half (47.2%) of all stillbirths and 25.0% of early neonatal deaths were classified as severely small for gestational age. This highlights the importance of close monitoring for fetal growth during pregnancy.

LOW BIRTHWEIGHT ASSOCIATED WITH PERINATAL DEATH



47.2% OF ALL STILLBIRTHS CLASSIFIED AS SEVERELY SMALL FOR GESTATIONAL AGE



25.0% OF EARLY NEONATAL DEATHS CLASSIFIED AS SEVERELY SMALL FOR GESTATIONAL AGE

Perinatal Mortality Rate: 5.8 /1,000 births or 1 in 172 births

A positive note from the 2016 report was the decrease in the perinatal mortality rate (PMR) by 15% since 2015. The decrease in the perinatal mortality rate was mainly due to a 23% decrease in the rate of early neonatal death. While this finding is just one for one year, hopefully this trend will continue in future years.

Why do babies die?

Major congenital abnormality was the primary cause of perinatal death in Ireland in 2016. Major congenital abnormality was the main cause of death in over thirty percent (31.2%) of stillbirth, over half of early neonatal deaths (54.8%) and 45.4% of late neonatal deaths.

The PMR rate was 3.6 per 1,000 births when deaths due to major congenital abnormality were excluded from the rate.

In the case of stillbirths, placental disease was the second most common cause of death (28.0%). As in recent years, the number of unexplained stillbirths was approximately fifteen percent (15.2%).

In the case of early neonatal death, respiratory disorder was the second most common cause of death, accounting for more than one in four (29%) of early neonatal deaths of which the majority (69.4%) were due to being born prematurely.

Stillbirth: Major congenital anomaly (31.2%), placental disease (28.0%), unexplained (15.2%).

Early neonatal deaths: Major congenital abnormality (54.8%), respiratory disorder secondary to prematurity (29%).

Late neonatal death: Major congenital anomaly (45.4%), respiratory disorder secondary to prematurity (30.3%).

Maternal characteristics

The report explores a number of maternal characteristics associated with perinatal loss. An association between maternal age and perinatal mortality was identified. Compared to mothers aged between 25-29 years, women aged less than twenty-five years and greater than forty years had at least twice the rate of perinatal mortality.

As in previous years, increased Body mass index (BMI) is associated with perinatal mortality. Over half (56.6%) of the mothers who experienced perinatal loss in 2016 were either overweight or obese.

Investigating perinatal deaths

Finding out why a baby dies is important not only for the bereaved family but is essential in learning lessons and thus help prevent such tragedies occurring in the future. An autopsy of the baby and a detailed examination of the placenta by a perinatal pathologist are essential in the thorough investigation of a perinatal death. Autopsy, but not a placental examination, requires parental consent.

Similar to recent years, a post-mortem examination was performed more often in stillbirths (54.2%)

than in early neonatal deaths (35.0%) in 2016. For the majority of the perinatal deaths where an autopsy was not performed, an autopsy was offered and presumably declined by parents (88.7% of the cases without autopsy).

It is encouraging to see that a high rate of placental histology examinations continues in 2016 (96.8% in stillbirths and in 93.4 % of early neonatal deaths).

A message from our Patient Representative

A patient's perspective is so important in our health services to get a deep understanding of how care and patient safety can be improved upon, of what worked well and what didn't.

Losing my son Conor to perinatal death has opened up a whole new world to my family and my need to learn more about why babies die. Can we learn from their deaths and try to reduce perinatal loss and devastation to families.

This journey has led me to the NPEC and the very important role they have undertaken over the last 10 years. With the support of all 19 maternity units contributing their perinatal mortality data to the NPEC, there is a learning opportunity to help reduce perinatal loss nationally.

I hope that the fundamental aims and recommendations made by NPEC are acted on by the joint collaboration of all respective working groups who carry responsibility for making our Maternity services safer and better. In particular, a standardised approach to monitoring all expectant mums and babies during pregnancy and intrapartum period would be welcome and a standardisation of a care package for those who have had a pregnancy loss. Saving precious little lives.

Siobhan Whelan

Patient Representative
NPEC Perinatal Mortality Group

Recommendations

- The establishment of a confidential enquiry for stillbirth and neonatal death should be considered in order to enhance the lessons which may improve care. An initial step would be the establishment of a standardised review of a case series of unexpected perinatal deaths associated with intrapartum events.
- As recommended by the Institute of Obstetrics and Gynaecology, a second trimester fetal anomaly ultrasound should be universally available for all pregnant women in Ireland.
- Improved antenatal detection of fetal growth restriction (FGR) with timely delivery is a preventative strategy to reduce perinatal mortality.
- Further research is needed exploring factors impacting on autopsy rates, particularly in the case of neonatal deaths.
- Funding should be provided by the Health Service Executive (HSE) to ensure that staffing levels allow protected time for clinical audit.
- A public health education programme on perinatal deaths and modifiable risk factors should be developed.

Full report available at: www.ucc.ie/en/npec/

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