

# VERY LOW BIRTH WEIGHT INFANTS IN THE REPUBLIC OF IRELAND, 2018

## A LAY SUMMARY

### National Perinatal Epidemiology Centre

The National Perinatal Epidemiology Centre (NPEC) collaborates with the Irish maternity services to translate clinical audit and epidemiological data into improved maternity care for families in Ireland. The NPEC is directed by Professor Richard A Greene and is composed of a team of midwives, researchers, epidemiologists, administrators and doctors. Established in 2007, on foot of recommendations from the Lourdes Hospital Report, the NPEC was founded so 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.<sup>1</sup>

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?

A clinically led, quality improvement process that seeks to improve patient care and outcomes through the systematic review of care against explicit criteria. Where standards are not met, changes are implemented and re-auditing is used to confirm improvement in patient care.

### 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.<sup>2</sup>

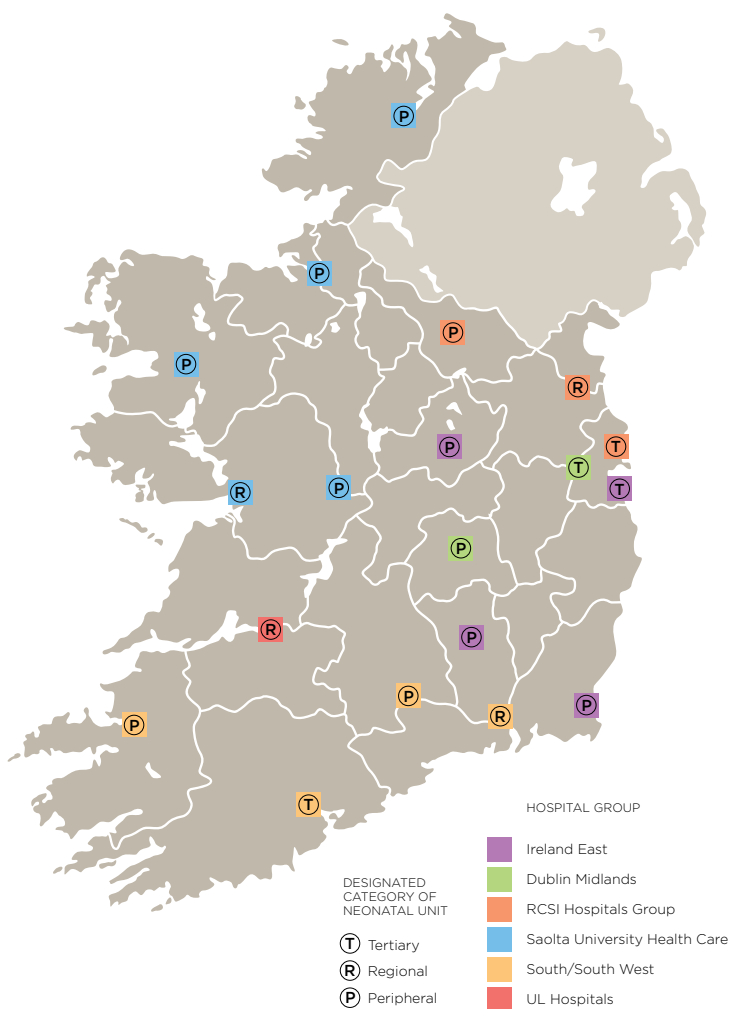
### What is a very low birth weight (VLBW) infant?

A very low birth weight (VLBW) infant is an infant who is born alive, but is very small (401-1,500 grams) or very premature (after 22 but before 30 weeks of pregnancy).

By virtue of their small size and/or prematurity, these are a high risk group of infants, at greater risk of dying and experiencing ill health than infants born after 30 weeks gestation or with a birth weight greater than 1,500g. Some of the most common complications for VLBW babies include low oxygen levels at birth, infection and problems of the respiratory, digestive and nervous systems.

### National Clinical Audit: Neonatal Care of VLBW Infants in Ireland

Since 2014, the National Perinatal Epidemiology Centre, working with NICORE (Neonatal Intensive Care Outcomes Research and Evaluation), a national group of neonatologists and paediatricians, has been auditing the outcomes of VLBW babies in the Republic of Ireland (ROI). The aim is to review the care provided to these babies and to recommend specific improvements in care.



### The Vermont Oxford Network (VON)

- The Vermont Oxford Network (VON) is a non-profit international voluntary collaboration of health care professionals dedicated to improving the quality and safety of medical care for newborn infants and their families.
- Today, the VON is comprised of over 1300 Neonatal Intensive Care Units around the world. Participating centres use the most comprehensive and up-to-date confidential data on high-risk infants to benchmark their practices and outcomes and identify areas for improvement.

Full report available at: [www.ucc.ie/en/npec/](http://www.ucc.ie/en/npec/)

<sup>1</sup> [health.gov.ie/blog/press-release/tanaiste-announces-new-national-perinatal-epidemiology-centre-in-cork-university-hospital/](http://health.gov.ie/blog/press-release/tanaiste-announces-new-national-perinatal-epidemiology-centre-in-cork-university-hospital/)

<sup>2</sup> [www.cdc.gov/careerpaths/k12teacherroadmap/epidemiology.html](http://www.cdc.gov/careerpaths/k12teacherroadmap/epidemiology.html)

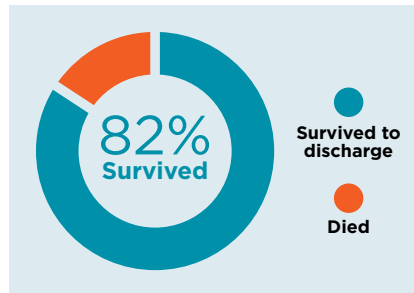


NATIONAL PERINATAL  
EPIDEMIOLOGY CENTRE

NOCA National Office of  
Clinical Audit



**537**  
VLBW INFANTS  
BORN IN ROI  
IN 2018



**Tertiary centres** provide 24 hour consultant neonatology cover.

**Regional centres** have < 8,000 births annually, have dedicated neonatal intensive care units (NICUs) but do not have 24-hour consultant neonatology cover.

**Peripheral centres** do not have dedicated NICUs nor dedicated consultant neonatology cover but they do have designated areas for newborn infants namely Special Care Baby Units (SCBUs).

## Care in designated categories of Neonatal Centre

The current Model of Care for Neonatal Services in Ireland recommends that infants born before reaching a gestational age of 28 weeks should ideally be delivered at one of the four tertiary neonatal centres.

**In 2018, 78% of ROI infants <28 weeks gestation were born in tertiary neonatal centres.**

This is an improvement compared to 2015 and 2014 (76% for each year) but a lower value than in 2016 (83%).

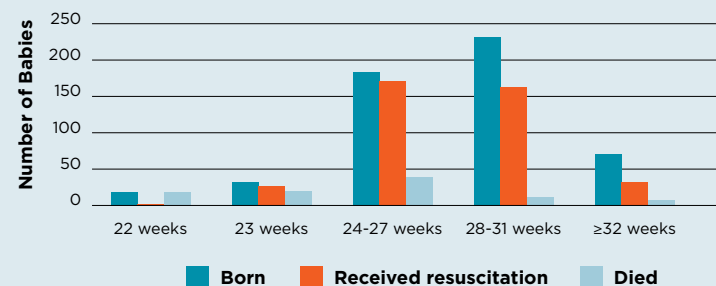
## Mortality of Very Low Birth Weight Babies

In 2018, 102 (approximately one in five) VLBW infants born in Ireland died before they were discharged from hospital or before they reached their first birthday. Risk of dying was especially high for those born at 22 and 23 weeks of gestation (Table 1).

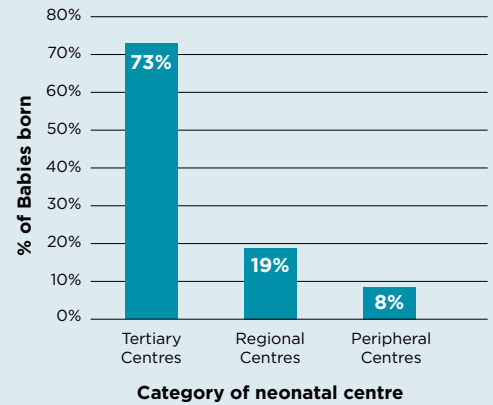
## Resuscitation of Very Low Birth Weight Babies

Similar to previous years (2015-2017), in 2018 approximately 6% of ROI infants died in the delivery room (n=30). At least 3 quarters of the VON units (Median 0%, Q1= 0%, Q3= 5%) had lower percentage of deaths in the Delivery room than reported in ROI. Seven (23%) of the 30 ROI infants had a major congenital anomaly and 21 (70%) were born at less than 24 weeks gestation.

It has been recommended that resuscitation should be administered to all infants born at 23 weeks who present in favourable condition. Since 2014, there has been a **steady increase in the number of infants born at 23 weeks who are resuscitated in the delivery room (from 42% to 89%)** and this had been associated with an increase in the number of these infants who survive to discharge (from 19% to 33%).



**Figure 1:** Number of VLBW babies born, who received resuscitation and who died in 2018, according to the gestational age group.



**Figure 2:** Percentage of VLBW born in each type of Neonatal Centre.

**Table 1:** Number of VLBW babies born and who died in 2018, according to gestational age.

	Number of babies born	Number (%) who died
<b>All</b>	537	95 (18%)
<b>22 weeks</b>	17	17 (100%)
<b>23 weeks</b>	27	18 (67%)
<b>24-27 weeks</b>	191	38 (20%)
<b>28-31 weeks</b>	232	14 (6%)
<b>≥32 weeks</b>	70	8 (11%)

(Note: Survival outcome unknown for 7 babies)

## Key Baby Outcomes

Adjusting for the risk profile of the VLBW infants born in the ROI showed that:

- ROI infants had a higher risk of Pneumothorax than expected (a serious lung disease), similarly to previous years
- ROI had lower rates of retinopathy of prematurity (ROP, a potentially blinding eye disorder), than expected.
- Death and serious health conditions were more common among the most premature babies.

**National Perinatal Epidemiology Centre**  
Department of Obstetrics and Gynaecology,  
5th Floor, Cork University Maternity Hospital,  
Wilton, Cork

[www.ucc.ie/en/npec/](http://www.ucc.ie/en/npec/)  
[npec@ucc.ie](mailto:npec@ucc.ie)  
+353 (0)21 420 5053  
Follow us on twitter @NPEC\_UCC

