



NATIONAL PERINATAL
EPIDEMIOLOGY CENTRE



**SEVERE
MATERNAL
MORBIDITY**
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

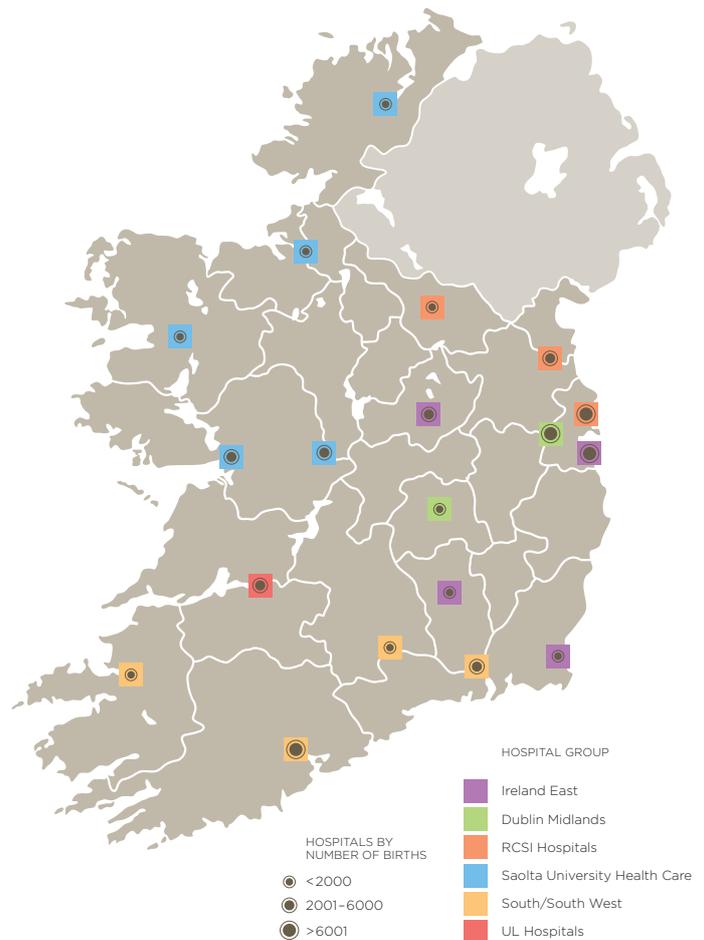
NPEC report on Severe Maternal Morbidity in 2016

This is the fifth report of the national clinical audit on severe maternal morbidity in Ireland published by the National Perinatal Epidemiology Centre (NPEC). The fundamental aim of the audit is to provide a national review of the data on women who experienced severe maternal morbidities, to identify quality improvement initiatives and make recommendations for the improvement of maternal care in Ireland. All 19 maternity units provide data to the NPEC on women attending their unit who experienced a severe maternal morbidity.

What is Severe Maternal Morbidity?

The World Health Organization (WHO) defines maternal morbidity as “any health condition attributed to and/or aggravated by pregnancy and childbirth that has a negative impact on the woman’s wellbeing”. There are a wide range of maternal morbidities and unfortunately there is a lack of international consensus in defining the severity of maternal morbidity.

In order to evaluate the incidence of severe maternal morbidity among women in Ireland and to make international comparisons, the NPEC adapted a validated international measurement tool using specific definitions.



62,871 MATERNITIES IN IRELAND IN 2016

406 WOMEN EXPERIENCED A SEVERE MATERNAL MORBIDITY DURING OR SHORTLY AFTER PREGNANCY IN 2016

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

Severe maternal morbidity

Severe maternal morbidity (SMM) was defined as a pregnant or recently-pregnant woman (i.e. up to 42 days following the pregnancy end) who experienced any of the following sixteen, clearly defined, maternal morbidities: major obstetric haemorrhage, uterine rupture, eclampsia, renal or liver dysfunction, pulmonary oedema, acute respiratory dysfunction, pulmonary embolism, cardiac arrest, coma, cerebrovascular event, status epilepticus, septicæmic shock, anaesthetic complications and maternities involving peripartum hysterectomy, admission to an intensive care unit (ICU) and interventional radiology. Definitions are available in the full report.

Major obstetric haemorrhage (MOH)

A women experiencing any of the following: a blood loss greater or equal to 2,500 mls; a transfusion of 5 or more units of blood; or received treatment to help the clotting process in order to stop bleeding. Bleeding may be vaginal or less commonly, internal, into the abdominal cavity.

Calculating rates

The incidence rate of SMM and of specific morbidities are calculated per 1,000 maternities.

Maternities

The number of women who delivered a live birth or stillbirth of a baby weighing at least 500g.

How many women experienced severe maternal morbidity?

The number of women experiencing one or more SMM was 6.46 per 1,000 maternities or one in 155 maternities in 2016. This represents a 68% increase in the number of women experiencing a SMM in Ireland since 2011.

Almost three quarters of the women (72.2%) who experienced SMM in 2016 were diagnosed with one morbidity; 21% were diagnosed with two morbidities; 6% (5.7%) with three SMMs; and 1% (1.2%) with four morbidities.

What severe morbidities were experienced by mothers in 2016?

Major obstetric haemorrhage (MOH) is the most frequently reported SMM event in 2016, accounting for just over half (52.5%) of SMM cases. The incidence of MOH cases has increased significantly (45%) since 2011. Increasing rates of MOH have also been reported in the UK and other EU countries.

Admission to an intensive or coronary care unit (ICU/CCU) was the second most common event, having been reported in over a third (39.4%) of SMM cases. This rate decreased by 15% compared to 2015.

The next most commonly reported morbidities were renal or liver dysfunction (8.4%), septicæmic shock (6.9%), peripartum hysterectomy (6.7%) and pulmonary embolism, i.e. a clot in the lung (5.9%).

While the incidence of peripartum hysterectomy, eclampsia and uterine rupture in Ireland compare favourably with international findings, the incidence of pulmonary embolism (clot in the lung) is higher than in the UK.

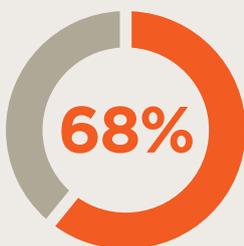
Maternal characteristics associated

The report explores a number of maternal characteristics associated with SMM. Severe maternal morbidity was more common in women aged 35 years and over. In terms of ethnicity, there was a slight overrepresentation of women experiencing severe maternal morbidity whose ethnicity was described as Black, Asian and Irish traveller.

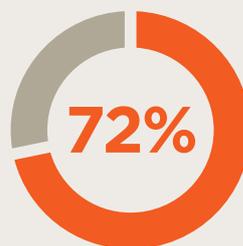
The report highlighted an association between increased body mass index (BMI) and SMM. The majority (60%) of women who experienced a morbidity had a high BMI (36.3% overweight and 23.1% obese).

Multiple pregnancy was associated with almost a fourfold increased risk of a woman experiencing a SMM as defined in this audit.

The perinatal mortality rate in women experiencing SMM was approximately seven times the perinatal mortality rate observed for all births in Ireland.



68% INCREASE IN NUMBER OF WOMEN WHO EXPERIENCED A SEVERE MATERNAL MORBIDITY IN IRELAND SINCE 2011



ALMOST THREE QUARTERS OF THE WOMEN (72.2%) WHO EXPERIENCED SMM IN 2016 WERE DIAGNOSED WITH ONE MORBIDITY

Women who required a higher level of care

In 2016, one in 109 maternities required a higher level of care than that provided at ward level. Levels of care are detailed in the table below. The report highlighted that the need for higher levels of maternal care is not predictable in approximately half of cases and thus has implications for resource planning.

| LEVEL OF CARE | DEFINITION |
|---|--|
| Level 0: Normal ward care | Care of low risk pregnant women |
| Level 1: Additional monitoring or intervention, or step down from higher level of care | Patients at risk of their condition deteriorating and needing a higher level of observation or those recently relocated from higher levels of care |
| Level 2: Single organ support | Patients requiring invasive monitoring/ intervention including support for a single failing organ system (incl. use of arterial and CVP lines, excl. advanced respiratory support) |
| Level 3: Advanced respiratory support alone, or support of two or more organ systems | Patients requiring advanced respiratory support (mechanical ventilation) alone or basic respiratory support along with support of at least one additional organ |

A message from our Patient Representative

The fundamental aim of the audit is to provide a national review of clearly defined severe maternal morbidities, to identify quality improvement initiatives and make recommendations to improve maternal care for women in Ireland. The NPEC have done excellent work in formulating the statistics in relation to maternal morbidity.

Behind every one of the statistics in this report is a woman; a mother, a wife, a partner, a sister, a daughter, a friend. She could be any one of us in pregnancy or post pregnancy (42 days). She may feel traumatised.

I never considered the maternity services in Ireland until 2013, then I needed my maternity care to be

the best it could be. I am a statistic, someone's wife, mother, daughter, sister, and friend. I feel traumatised. My journey to becoming the first patient representative on the Maternal Morbidity Group has been life changing for my family and I.

Today I am encouraged to know that all 19 Maternity Units in Ireland are now contributing to this audit. I am hopeful that this and subsequent audits will lead to change, and I trust that this change will continue to improve maternity care for women in Ireland.

Claire Jones

Patient Representative
NPEC Severe Maternal Morbidity Group

Recommendations

- Robust clinical audit on adverse maternal outcomes requires the protected time of clinical staff. Funding should be provided by the Health Service Executive (HSE) to facilitate same.
- The Robson Ten Group Classification System (TGCS) is a method providing a common starting point for further detailed analysis within which all perinatal outcomes can be measured and compared. The NPEC encourages all units to collect TGCS data in order to facilitate local and national audit.
- A public health education programme on maternal morbidity and modifiable risk factors should be developed
- Maternal Newborn Clinical Management System (MN_CMS) data from Irish maternity units should be collated to identify the influence of risk factors for SMM in Ireland including: ethnicity, maternal age, BMI, smoking and employment status.
- There is a need to review the SMM audit components and definitions with a view to enhancing the quality of data and lessons for care. This in keeping with best practice and will be actioned by the NPEC SMM group.
- To facilitate and enhance the scope of audit, a national standardised approach to obtaining consent for processing data from services users should be considered in light of the recent General Data Protection Regulation (GDPR) 2016.³

³ European Data Protection Law. General Data Protection Regulation 2016. Available at www.eu-gdpr.org

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