

Neonatal Therapeutic Hypothermia in Ireland Annual Report 2016-2020

LAY SUMMARY



Who are the organisations involved in this Annual Report?

The National Perinatal Epidemiology Centre (NPEC) works with the maternity services in Ireland. The NPEC are a team of midwives, researchers, administrators, and clinicians. The NPEC produces annual reports on therapeutic hypothermia, perinatal mortality, maternal morbidity, home births and very low birth weight babies in Ireland.

The National Women and Infants Health Programme (NWIHP) was established in January 2017, to lead the management, organisation and delivery of

maternity, gynaecology and neonatal services. The Programme functions to strengthen the services currently delivered across primary, community and acute care settings.

The National Clinical Programme for Paediatrics and Neonatology (NCPNP) functions are evolving, however the objectives continue to focus on improving outcomes for children and young people's health and well-being through improvements in quality, access and value of healthcare services. The Pro-

gramme collaborates with a range of stakeholders including clinicians, acute services, primary and community healthcare providers, policy makers, commissioning teams and other clinical programmes, to address key priorities to support the delivery of high-quality care to ensure better health outcomes for children and young people.

The NCPNP in collaboration with NPEC and NWIHP presents its successive report on neonatal TH in the Republic of Ireland for 2020.

What is Therapeutic Hypothermia?

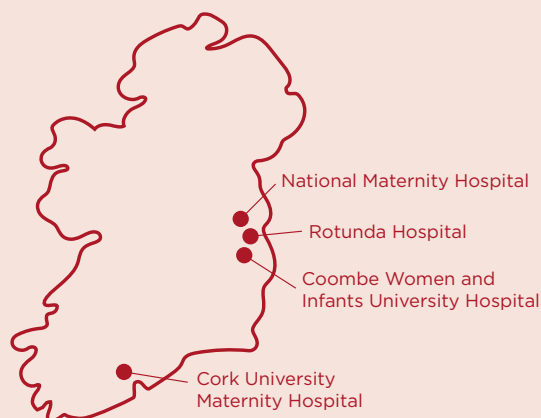
This is the fifth National Therapeutic Hypothermia in Ireland Annual Report, which covers the years 2016 to 2020.

Most babies have a safe delivery into the world at the time of their birth. However, a small number experience a loss of oxygen, potentially causing them harm. When this happens, the neurological function can be depressed or disturbed, and it is scientifically called "Neonatal Encephalopathy (NE)". While NE primarily affects the brain and nervous system, it can also affect other organs.

A treatment known as Therapeutic Hypothermia, commonly called '**cooling**' is the gold standard therapy of care for babies diagnosed with moderate or severe NE. Cooling means that shortly after birth, a special mattress or cap is placed around the baby to cool down their temperature to between 33°C to 34°C. Cooling takes 3 days: after that, the baby is warmed to a normal temperature. They are actively

monitored throughout their treatment by a team of nurses, doctors and team members working in the NICU.

Cooling happens in four hospitals in Ireland: National Maternity Hospital, Rotunda Hospital, Coombe Women and Infants University Hospital, and Cork University Maternity Hospital. The National Neonatal Transport Programme brings babies born in other hospitals to one of these four centres.



Cool baby temperature between 33°C to 34°C



Cooling happens in four hospitals in Ireland



Key Findings

- 76 babies received cooling in 2020, and a total of 357 babies received cooling from 2016 to 2020.
- 301,940 babies were born in the Republic of Ireland from 2016 to 2020.
- 1 in 900 infants in Ireland needed cooling after birth.
- 51 babies died, accounting for 14% of all the babies who were cooled from 2016 to 2020.
- Over the four-year period, 40% of babies who required cooling were born in a peripheral hospital and required transfer to one of the four tertiary centres that deliver Therapeutic Hypothermia (TH) intervention.
- The National Neonatal Transport Programme (NNTP) plays an important role in the retrieval of NE infants requiring TH intervention from peripheral hospitals. The NNTP transferred 83% of outborn infants in 2020.
- Peripheral sites assessed, diagnosed, and initiated referral for 70% of cases in 2020 within 2 hours of life.
- The data in this report reinforces that the Irish Health Service is providing TH in Ireland by way of continuum of care between referral hospital, NNTP and tertiary centres.
- Every mother & baby is unique but there are some important common factors in the babies who were cooled:
 - Mothers having their first baby,
 - Mothers who were overweight or obese,
 - Induction of labour (labour started by the medical team),
- Shoulder Dystocia - Where there was a delay in delivery because the baby's shoulders got stuck during birth.
- Shoulder dystocia occurs when a baby's head passes through the birth canal and their shoulders get stuck. This happened to 1 in 9 babies (11.8%) who were cooled according to the aggregated data 2016-2020. This was 18 times more common than for all mothers who gave birth in hospital.
- Baby's weight: some babies who were cooled had smaller than average birthweights.
- Almost 32% of babies in 2020 did not have a diagnosis of the severity of the NE by using a tool called "Sarnat assessment".



76 babies received cooling in 2020



357 babies received cooling from 2016 to 2020



1 in 900 infants in Ireland needed cooling after birth

Recommendations

1. **Not all cases of NE are avoidable but some could be. Comprehensive review of each case of TH is recommended.**
2. **Increased awareness of the factors that may put babies at risk of needing cooling.**
3. **Ensure all staff providing care to newborn babies have attained their certificate in Neonatal Resuscitation and comply with the re-certification process on a 2 yearly basis.**
4. **Pay special attention to assessments of baby before, during and after cooling: Use the tools - Cooling Candidacy Checklist; Sarnat assessments; daily aEEG report.**
5. **All infants receiving TH require a daily Sarnat assessment during the three days of cooling.**

