

Perinatal Mortality Rate in Ireland

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The recently published data for 2023 reports that the perinatal mortality (PNM) rate for 2023 was 4.3 per 1000 births. This marks the lowest rate ever recorded for Ireland. There was a total of 235 perinatal deaths, consisting of 158 stillbirths (2.89 per 1000 births) and 77 early neonatal deaths (1.41 per 1000 births). The adjusted PNM rate, which excludes major congenital malformations, was 3 per 1000 births. The PNM rate has been decreasing over time. In 2014, it was 6.8 per 1000 births, and in 2018 it was 5.2 per 1000 births.

The audit goes into some detail about the interpretation of individual hospital rates. In particular, the rates are affected by the transfer of high-risk pregnancies and ill newborn infants from the smaller hospitals to the larger hospitals for specialist care. This operating model decreases the number of perinatal deaths at the smaller centres and increases the number at the larger centres. Examples of the impact of these referral patterns on the individual hospital rate are illustrated. The other factor that must be considered is that individual hospital rates can fluctuate from year-to-year following small changes in the number of deaths.

The background demographics have been individually examined. This helps to provide an insight into the specific groups that are at a greater risk of a perinatal death. The PNM rate was highest among mothers in less than 25 years, 6.36 per 1000 births. There were lower rates for the other age groups ranging from 3.8 – 4.77 per 1000 births. Parity has an impact on the PNM rate. In nulliparas the rate was 5.02, and in mothers with 3 or more children the rate was 5.55. The lowest rate was encountered in mothers with 1 previous child, 3.02. Multiple births increase the risk of a perinatal death due mainly to the higher rates of prematurity. The PNM rate for twins was 13.74 per 1000 births.

Small for gestational age is an important adverse factor for perinatal outcome. The PNM rate was 10 times higher in those with a birthweight less than the 3rd centile, and 4 times more likely in those less than the 10th centile. It was a more important cause of stillbirths rather than neonatal deaths.

An autopsy was performed in 54.7% of the perinatal deaths. The rate was considerably higher for stillbirths, 65.8% compared with 29.9% of early neonatal deaths. Placental histology was performed for almost all stillbirths and 98% of early neonatal deaths. Placental conditions were the most common cause of stillbirths (39%), with fetal and maternal malperfusion being the specific cause for 60% of cases. Major congenital malformations accounted for 20.9% of cases, with almost half 45.5% being due to chromosomal anomalies. The main causes of early

neonatal death were major congenital anomalies (49.9%), and severe respiratory complications due to pulmonary immaturity (22.1%).

Intrapartum stillbirth is now an uncommon cause of perinatal death. There were 5 cases, a rate of 0.09 per 1000 births. The causation was variable and included premature labour -2, congenital anomaly -1, chorioamnionitis -1, cord pathology -1.

The impact of prematurity on the PNM rate is highlighted. Early neonatal deaths are concentrated in births between 22-27 weeks gestation, the rates being over 150 per 1000 live births. At the other end of the spectrum, deaths at 37-41 weeks are rare. There is an additional section on extreme prematurity. There were 35 early neonatal deaths with a birthweight less than 500g and a gestational age less than 24 weeks. The majority 26 infants were less than 22 weeks with 9 deaths after 22 weeks. The majority of the deaths occurred in the labour ward with only 9% taking place in the neonatal unit.

The audit states that national data on the impact of social factors on the PNM rate has been difficult to collect. It urges that new methodologies should be explored in order to capture this relevant information.

A care bundle approach is advocated to further reduce perinatal mortality. The list of items includes reduction in smoking and substance use, weight management to lower BMI, attendance for antenatal care, awareness of the importance of reduced fetal movements, fetal growth restriction identification and management, prediction and management of preterm labour.

The PNM rate remains an important metric of the quality of obstetric and neonatal care. It highlights areas of perinatal care that require improvement strategies. It enables the planning of strategies to reduce modifiable risk factors. It is a vehicle for the benchmarking of the quality of care between countries.

In terms of benchmarking by international standards, the Irish NMR rate for 2023 at 4.3 per 1000 births was very similar to UK at 4.28 per 1000 births. The overall quoted PNM rate for the EU is 3.17 per 1000 births. The rates for low-income and middle-countries are considerably higher at 34 per 1000 births, the global every newborn action plan in 2014 set a target for stillbirths to be reduced to 12 per 1000 by 2030. The oft-quoted challenges posed by PNM observers are inadequate healthcare infrastructure, shortage of skilled staff, and persistent socio-economic and racial inequalities.

The National Perinatal Epidemiology Centre annual report provides a valuable source of information on the perinatal mortality rate and the important factors that contribute to it at the current time. It provides guidance on the next steps to its further reduction in the coming years.

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