

## Perinatal Optimisation for Preterm Births Less than 34 Weeks at OLOL, Drogheda, Ireland

**Authors :** Stephane Maingard, Babu Paturi, Maura Daly, Finnola Armstrong

**Abstract :** Background: Perinatal optimization involves the implementation of twelve intervention bundles of care at Our Lady of Lourdes Hospital, reliably delivering evidence-based interventions in the antenatal, intrapartum, and neonatal period to improve preterm outcomes. These key interventions (e.g. Antenatal steroids, Antenatal counselling, Optimal cord management, Respiratory management etc.) are based on WHO (World Health Organization, BAPM (British Association of Perinatal Medicine), and the latest 2022 European Consensus guidelines recommendations. Methodology: In February 2023, a quality improvement project team (pediatricians, neonatologists, obstetricians, clinical skills managers) was established, and a project implementation plan was developed. The Program Study Act implemented the following: 1. Antenatal consultation pathway, 2. Creation and implementation of a perinatal checklist for preterm births less than 34 weeks of gestation, 3. Process changes to ensure the checklist is completed, 4. Completion of parent and staff surveys, 5. Ongoing training. We collected and compared a range of data before and after implementation. Results: Preliminary analysis so far at 1 month demonstrates improvement in the following areas: 50% increase in antenatal counselling. Right place of birth increased from 85% to 100%. Magnesium sulphate increased from 56% to 100%. No change was observed in buccal colostrum administration (28%), delayed cord clamping (75%), caffeine administration (100%), blood glucose level at one hour of life > 2,6mmol (85%). There was also no change noted in respiratory support at resuscitation, CPAP only (47%), IPPV with CPAP (45%), IPPV with intubation (20%), and surfactant administration (28%). A slight decrease in figures was noted in the following: steroid administration from 80% to 75% and thermal care obtaining optimal temperature on admission (65% to 50%). Discussion: Even though the findings are preliminary, the directional improvement shows promise. Improved communication has been achieved between all stakeholders, including our patients, who are key team members. Adherence to the bundles of care will help to improve survival and neurodevelopmental outcomes as well as reduce the length of stay, thereby overall reducing the financial cost, considering the lifetime cost of cerebral palsy is estimated at €800,000 and reducing the length of stay can result in savings of up to €206,000. Conclusion: Preliminary results demonstrate improvements across a range of patient, process, staff, and financial outcomes. Our future goal is a seamless pathway of patient centered care for babies and their families. This project is an interdisciplinary collaboration to implement best practices for a vulnerable patient cohort. Our two main challenges are changing our organization's culture as well as ensuring the sustainability of the project.

**Keywords :** perinatal, optimization, antenatal, counselling, IPPV

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