



# Perinatal Excellence in Reducing Injury in Premature birth:

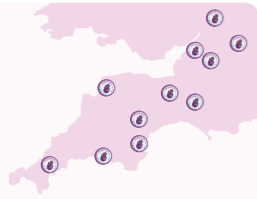
a bundle of perinatal interventions that will contribute to a reduction in brain injury and neonatal mortality across the South West of England by optimising;

Supporting compliance with the complete bundle for all eligible mothers and their babies born at less than 34 weeks gestation to improve the optimisation and stabilisation of the very preterm infant

## Place of Birth

Babies delivered at less than 27 weeks or with an expected birth weight of under 800 grams (less than 28 weeks for multiple births) should be born in a maternity service on the same site as a designated NICU.

[Ref: 1,2,3,4,]



## Antenatal Steroids

Mothers who give birth at less than 34 weeks gestational age should receive the correctly timed, full course of antenatal steroids.

[Ref: 2,4,5,6]



## Antenatal Magnesium Sulphate

Mothers who give birth at less than 30 weeks gestational age should receive antenatal Magnesium Sulphate.

[Ref: 2,4,5,6]



## Intrapartum Antibiotic Prophylaxis

95% of women in established preterm labour (less than 34 weeks gestation) to receive Intrapartum Antibiotic Prophylaxis at least 4 hours prior to birth.

[Ref: 12]



## Optimal Cord Management

Babies born at less than 34 weeks gestational age should have their cord clamped at or after one minute.

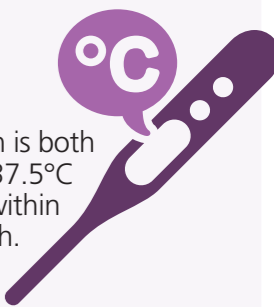
[Ref: 2,4,7]



## Normothermia

Babies born at less than 34 weeks gestational age should have a temperature on admission which is both between 36.5–37.5°C and measured within one hour of birth.

[Ref: 2,4]



## Early Maternal Breast Milk (MBM)

Babies born at less than 34 weeks gestational age should receive MBM within 6 hours of birth.

Units should monitor (and aim to increase) rates of first MBM within 6 hours of birth for babies born at less than 34 weeks gestational age.

MBM feeding at 14 days - Units should monitor (and aim to increase) rates of babies born at less than 34 weeks gestational age receiving MBM at 14 days of age.

[Ref: 2,8]



## Caffeine

Babies should be started on caffeine as soon as possible (aim within the first 6 hours... NICE says: "starting it as early as possible and ideally before 3 days of age") in all babies:

- Less than 30 weeks gestation (consider 32 - 34 weeks)
- Birth weight less than 1500g

[Ref 9,10]



## Probiotics

Babies (less than 32 weeks, less than 1500g birth weight) should be commenced on a multi strain probiotic of choice on the first day of life.

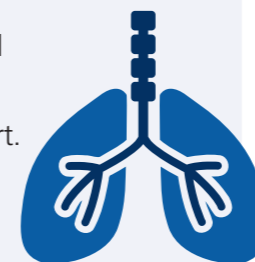
[Ref 11]



## Volume Guarantee (VG) or Volume Targeted Ventilation (VTV)

For babies who need invasive ventilation, use volume-targeted ventilation (VTV) in combination with synchronised ventilation as the primary mode of respiratory support.

[Ref 10]



## Prophylactic Hydrocortisone

Babies born <28 weeks gestation should receive prophylactic hydrocortisone from day 0 of life.

[Ref 10]



## Evaluating the impact

The Health Innovation South West was commissioned to evaluate the impact of PERIPrem with a quantitative evaluation, published in BMJ Open Quality, and an evaluation on the barriers and enablers to the implementation of PERIPrem published in Research Square. Explore the findings in a bite sized summary of the evaluation. [Ref 13-15]

The use of magnesium sulphate came from our earlier collaborative, PRECEPT. The national rollout of this by the AHSN Network (now known as the Health Innovation Network) using a QI approach has been found effective according to an evaluation by the National Institute for Health and Care Research (NIHR). The findings, led by researchers at the University of Bristol, are published in the Archives of Disease in Childhood. [Ref 16-17]

1. NHS England: Neonatal Critical Care Transformation Review (2019) <https://www.england.nhs.uk/publication/implementing-the-recommendations-of-the-neonatal-critical-care-transformation-review>
2. NNAP (RCPCH) 2020 Audit standards, set by NNAP Project Board. [https://www.rcpch.ac.uk/sites/default/files/2019-11/nnap\\_2020\\_audit\\_measures\\_guide\\_v1.0\\_191119\\_0.pdf](https://www.rcpch.ac.uk/sites/default/files/2019-11/nnap_2020_audit_measures_guide_v1.0_191119_0.pdf)
3. Helenius K, Longford N, Lehtonen L, Modi N, Gale C. Association of early postnatal transfer and birth outside a tertiary hospital with mortality and severe brain injury in extremely preterm infants: observational cohort study with propensity score matching. *bmj*. 2019 Oct 16;367:l5678.
4. BAPM: Perinatal Management of Extreme Preterm Birth Before 27 Weeks of Gestation (2019). Available at [www.bapm.org](http://www.bapm.org)
5. NICE Guidance for Preterm Birth (2019) <https://www.nice.org.uk/guidance/ng25>
6. Doyle LW, Crowther CA, Middleton P, et al. Magnesium sulphate for women at risk of preterm birth for neuroprotection of the fetus. *Cochrane Database Syst Rev* 2009;CD004661
7. Rabe H, Gyte GML, Diaz-Rossello JL, Duley L. Effect of timing of umbilical cord clamping and other strategies to influence placental transfusion at preterm birth on maternal and infant outcomes. *Cochrane Database of Systematic Reviews* 2019, Issue 9. Art. No.: CD003248. DOI: 10.1002/14651858.CD003248.pub4.

8. Parker MG, Melvin P, Graham DA et al. Timing of First Milk Expression to Maximize Breastfeeding Continuation Among Mothers of Very Low-Birth-Weight Infants. *Obstet Gynecol*. 2019b;133(6):1208-1215
9. <http://swneonatalnetwork.co.uk/media/107035/swnn-guideline-caffeine-use-in-preterm-infants-rs.pdf>
10. Specialist neonatal respiratory care for babies born preterm, NICE guideline [NG124] Published date: April 2019 <https://www.nice.org.uk/guidance/ng124/chapter/Recommendations>
11. <http://www.swneonatalnetwork.co.uk/media/89842/swnn-guideline-probiotics-in-preterm-babies-final-january-2016-version-02.pdf>
12. <https://www.bapm.org/resources/295-qi-publications-review-antenatal-optimisation-edition>
13. <https://healthinnovationsouthwest.com/news/new-evaluation-shows-quality-improvement-project-is-improving-care-for-premature-babies>
14. <https://www.researchsquare.com/article/rs-1550325/v1>
15. <https://swahsn.com/wp-content/uploads/2022/08/A4-PERIPrem-Bitesize-evaluation-V4.pdf>
16. <https://fn.bmj.com/content/early/2023/01/01/archdischild-2022-324579>
17. <https://www.healthinnwest.net/our-work/case-study/precept-preventing-cerebral-palsy-in-preterm-babies>