British Association of Perinatal Medicine- Written evidence (PRT0042)

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This has been sent on behalf of the BAPM Executive Committee.

(BAPM President, Dr Eleri Adams, has not contributed to this statement due to her role as Specialist Advisor on this topic.)

Summary

1. **We, the British Association of Perinatal Medicine, wish to share our significant concerns about the extent of, and variation in, preterm mortality and brain injury rates in the United Kingdom. The overwhelming driver for infant mortality and long term disability in the UK is prematurity.**

2. **We believe that major improvements could and should be made in the care and support given to preterm babies and their parents, and that by making preterm care a national focus, with identified goals, the overall health and well being of the population will be improved. Such a national ambition should target specific rates of decrease in the overall rate of preterm mortality as well as in the variation in preterm mortality observed within the UK. Further, a national ambition should seek means to reduce preterm brain injury, and the observed variation, again identifying specific targets.**

3. **We submit that promising means for delivering such improvements in outcome already exist through quality improvement initiatives targeting perinatal optimisation, and through enhanced learning from case reviews, including those of mortality.**

Context - Mortality

4. **Newborn mortality** is rising in the UK[1], and is higher than many comparable countries in Western Europe. An overwhelming proportion (79% in 2023[2]) of neonatal deaths occur in babies born preterm. This impact is not confined to early life. The Population Attributable Risk Fraction (PAF) shows us that nearly half (46.2%) of deaths in the first decade of life are caused by prematurity[3]. For reference, and in contrast, the PAF for Hypoxic Ischaemic Encephalopathy (HIE) is 6.8%. HIE has seen extensive investment in funding for prevention. This investment should be (at least) matched for prematurity, in prevention of preterm birth and optimisation of outcomes – recognising that preterm birth is not yet entirely preventable.

5. There are worrying social and ethnic disparities in mortality, with babies from socially deprived backgrounds and black or Asian families being far more likely to die than babies from white families in less deprived areas[4].

Context – Brain Injury

6. Preterm birth is by far the biggest cause of perinatal brain injury[5] – preterm severe brain injury is seen in 26 per 1000 live preterm births, and in 3.5 per 1000 live term births. The available evidence shows there has been no decline in rates of preterm brain injury

since measurement began in 2012. There is concerning unwarranted regional variation in rates of babies experiencing severe preterm brain injury across the UK. For cystic periventricular leukomalacia (one of the most severe forms of preterm brain injury, frequently associated with cerebral palsy and lifelong disability) there is a 2 fold difference in incidence of this between regions: 6% (South West) and 13.3% (London South) of babies [6]. For severe Intraventricular Haemorrhage (IVH), incidence varies across regions, between 11.4% (Thames Valley Wessex) and 19.1% (London South) of babies[6]. More concerningly, among neonatal units, the interquartile range of hospitals' rates of severe IVH is 6.9 – 18.9%, and that of cystic periventricular leukomalacia is 3.3-13%.

7. Neonatal illness (predominantly prematurity) is the biggest contributor to life years burdened by disability (higher than heart disease, stroke, COPD etc.)[7]. Investment in simple low cost interventions to improve preterm outcomes will engender longitudinal cost savings within healthcare and education many times over.

How can we make this change

8. BAPM wish to point to two strands of under-deployed improvement activity which could contribute more to improvements in mortality and preterm brain injury.

Key Strand 1: Preterm Perinatal Optimisation

9. A significant body of research evidence describes interventions which can reduce the risk of death and brain injury, most notably in the time just before and after a preterm birth, the perinatal period.

These interventions, termed 'perinatal optimisation', are well defined and are described in national guidance[8,9]. These are simple low cost interventions shown to reduce death and brain injury and thus improve life expectancy and quality of life for babies born early. In Wales, preterm perinatal optimisation work is being fully supported in the form of funded national implementation programmes[10]. In Scotland, the Perinatal Change Package has been implemented by Healthcare Improvement Scotland[11]. Overall, just fewer than one preterm baby in five received every relevant component of the optimisation pathway in the last quarter of 2024. **The majority of babies across the UK are not getting the perinatal care they deserve, and this represents a major missed opportunity to reduce our newborn mortality and brain injury rates.** Overall temporal improvements mask seriously concerning regional and intrahospital variation, which is summarised in appendix 1.

10. There is evidence that funded support for structured improvement programmes in perinatal optimisation can result in better uptake of clinical interventions. The PReCePT programme[12] was a national quality improvement programme to increase the uptake of magnesium sulphate to reduce cerebral palsy. This demonstrated how a national programme of implementation can accelerate the pace of change, reduce unwarranted regional variation, and ensure that every baby receives key interventions every time. In SW England (Pop. 5 million; 12 Trusts) universal investment (c£250k) in preterm optimisation through the PERIPrem programme[13], resulted in a statistically significant 30% relative reduction in mortality in VLBW (<1500g) infants and a 17% relative reduction in one of the forms of severe preterm brain injury, IVH[14]. Over the same period, the UK mortality and brain injury rates remained static[14]. The methodology of both PReCePT and PERIPrem seems to

be effective[15] and was reviewed and commended in a widescale review of maternity quality improvement programmes[16].

11. Funding a universal national enhanced support programme for preterm optimisation would require a relatively small investment, but the return would be swift and significant, with additional longer term reduction in health care costs because of reduction in disability, reduction in special educational needs (SEN) support in schools, and reduction in NHS Litigation claims (50% of which are related to cerebral palsy, the majority of which is related to prematurity)

Key Strand 2: Learning from Case Review

12. Sadly, overall in the UK mortality among babies 24-31 weeks inclusive is around 6% and has remained static for some years[6]. Strikingly, there is evidence that mortality differs between regions of the UK in a way that is not explained by case mix, and that the mortality varies by region with some regions observing mortality almost twice that of others (range of regional mortality rates 4.8% to 8%, data from 2020-2022). Mortality is typically multifactorial with many cases having both potential antenatal and postnatal influences on the final outcome. Neonatal mortality is already subject to structured case review and data submission, but processes for learning from mortality cases are still developing, despite a number of national reports recommending components, such as external peer review contributing to local reviews. BAPM recognises the need to improve the generation of learning from mortality cases, and to improve ways to disseminate this learning effectively. BAPM plans to develop a toolkit to support healthcare providers to do this optimally in order to support ongoing clinical learning.

Appendix 1

The National Preterm Perinatal Optimisation Pathway – interventions and current status.

https://www.bapm.org/pages/perinatal-optimisation-pathway

Element	***Descriptor***	***Impact***	***Current status (England Wales Scotland (range) NNAP 2022 [6]***
Place of birth	Babies born below 27 weeks gestation (or multiple births below 28 weeks) should be born in a maternity centre with a co located NICU	2-3 fold higher risk of severe brain injury and 1.3 time higher risk of death if born outside of a centre with a NICU.	(Regional variation 42.2 – 72.2%)
Optimally timed antenatal steroids	Antenatal corticosteroids should be offered to women who give birth before 34 weeks gestation, optimally at 48 hours prior to birth.	Reduction in mortality by 30% & severe brain injury (IVH) by 45%	*Unit interquartile range 41.4 – 57.7%*
Magnesium	Magnesium should be given to women who give birth before 30 weeks gestation, optimally within	Reduction in cerebral palsy by a third.	*Unit interquartile range 75-93.3%*

	24 hours before birth.		
DCC	Babies born before 34 weeks gestation should have their umbilical cord clamped at or after one minute after birth	Reduction in mortality by a third.	*Unit interquartile range 48.8-70.8%*
Normothermia	Babies born before 34 weeks gestation should have a first temperature which is between 36.5–37.5°C	Keeping a baby warm (36.5C to 37.5C) is crucial. For every one degree outside of this range, a baby is 28% more likely to die	*Unit interquartile range 66.7 – 83.1%*
Early Maternal Breast Milk	Maternal breast milk (MBM) is a highly bespoke and life saving medicine for preterm babies. All babies should receive MBM within 24 hours and ideally within 6 hours.	MBM reduces the risk of NEC (Necrotising Enterocolitis) by 60% and ROP (Retinopathy of Prematurity, which can lead to blindness) by 70%. MBM improves long term neurodevelopmental outcome.	*Unit interquartile range 35 – 59.3%)*

**Core = whilst we present a core pathway of interventions which are well measured nationally, other interventions (intrapartum antibiotics, neonatal caffeine, mode of ventilation support, probiotic treatment and hydrocortisone) are all well evidenced parts of regional or nationally recognised optimisation care pathways.*

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