

# Maternal Breast Milk Toolkit

Optimising Early Maternal Breast Milk for Preterm  
Infants: A Quality Improvement Toolkit

## Dr Sarah Bates

- Neonatal Consultant, Swindon
- BAPM LNU/SCU Representative
- Operational Clinical Lead for PERIPrem



British Association of  
Perinatal Medicine

# Overview



- **Why MBM support matters - parental perspectives**  
Genevieve Howell and Heather Johnson, Parents
- **Introduction to the MBM Toolkit**  
Sarah Bates, Chair of MBM Toolkit group
- **The Science behind MBM for preterm babies**  
Minesh Khashu, Consultant Neonatologist & Professor of Perinatal Health, University Hospitals Dorset
- **The role of Family Care in MBM optimisation**  
Aniko Deierl, Consultant Neonatologist, Imperial College Healthcare NHS Trust
- **Working Together to optimise MBM – the AHP perspective**  
Sara Clarke, Senior Specialist Neonatal Network Dietitian, West Midlands Neonatal ODN
- **Perinatal Team working & MBM**  
Gillian Gardiner, Midwife, Edinburgh
- **Global & national drivers – UNICEF BFI**  
Karen Read, Professional Lead for Neonatal Baby Friendly Initiative

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Optimising Early Maternal Breast Milk for Preterm Infants: A Quality Improvement Toolkit

## Parental Perspective

- Genevieve Howell
- Heather Johnson



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# The Preterm Journey...and Goals



Set your goals high, and don't stop till you get there.

Bo Jackson

# The National Context...



National maternal and neonatal safety collaborative

@MatNeoQI  
improvement.nhs.uk



Next Steps on the NHS Five Year Forward View



easy read



British Association of Perinatal Medicine

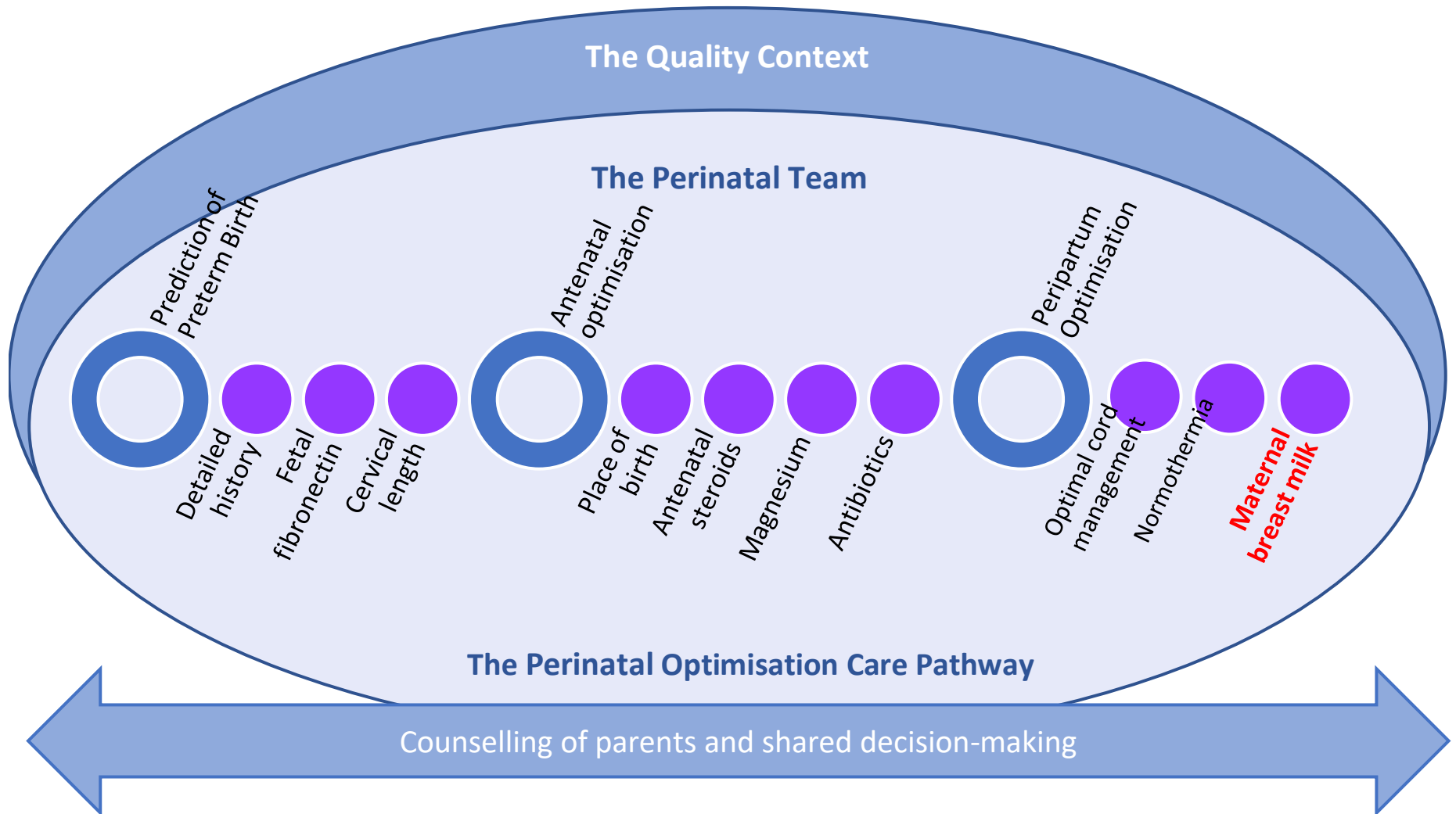


Improve the optimisation and stabilisation of the very preterm infant

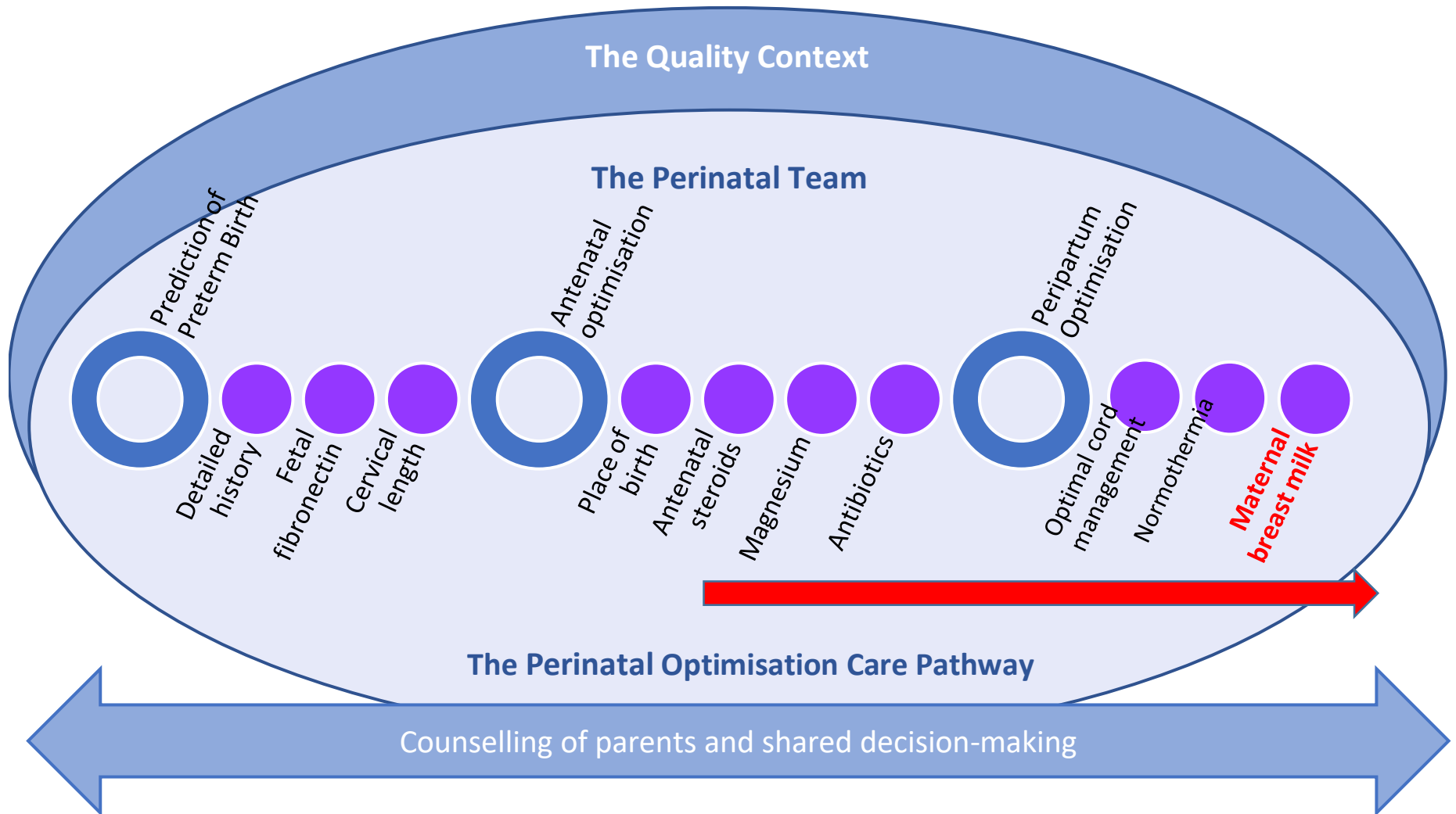


**NNAP**  
National Neonatal Audit Programme

# The Perinatal Optimisation Care Pathway



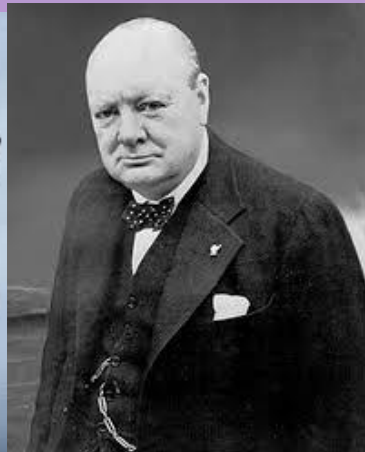
# The Perinatal Optimisation Care Pathway



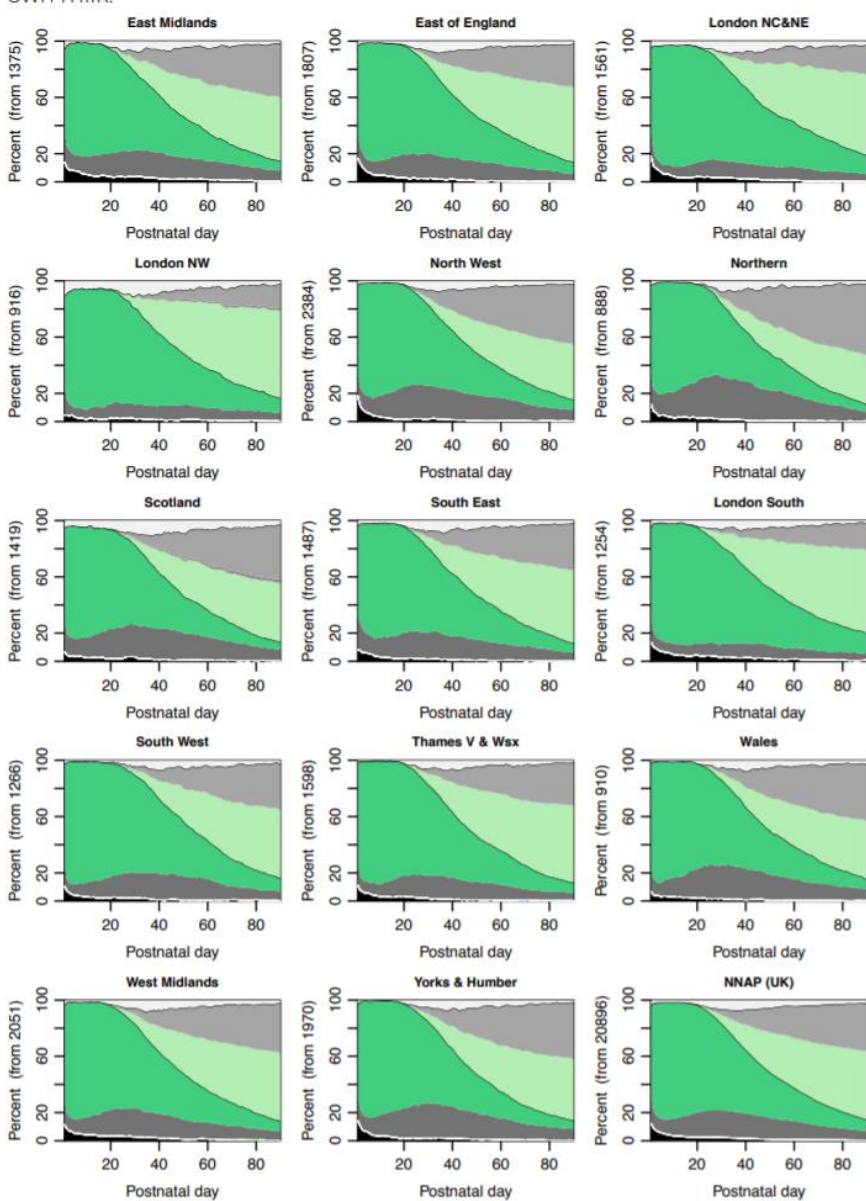


Maternal Breast Milk for preterm babies is an exceptional example of both personalised and precision medicine

MBM for preterm babies –  
Where are we now?

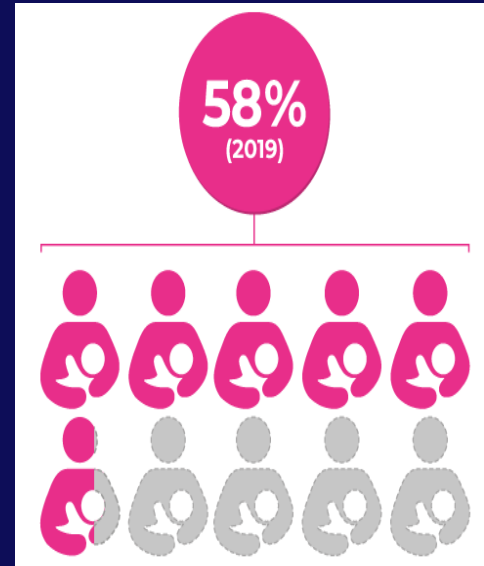


# NNAP 2019 Report



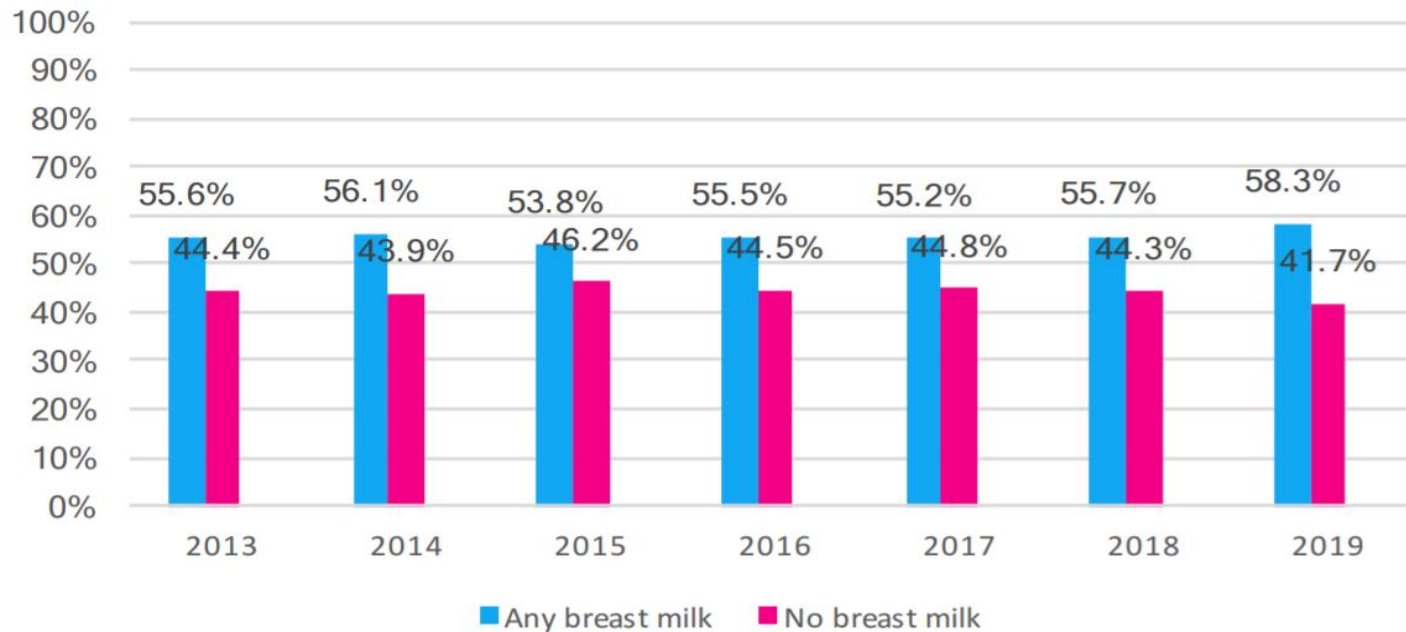
Does a baby born at less than 32 weeks gestational age receive any of their own mother's milk at discharge to home from a neonatal unit?

**National result:**



# NNAP 2019: National key messages

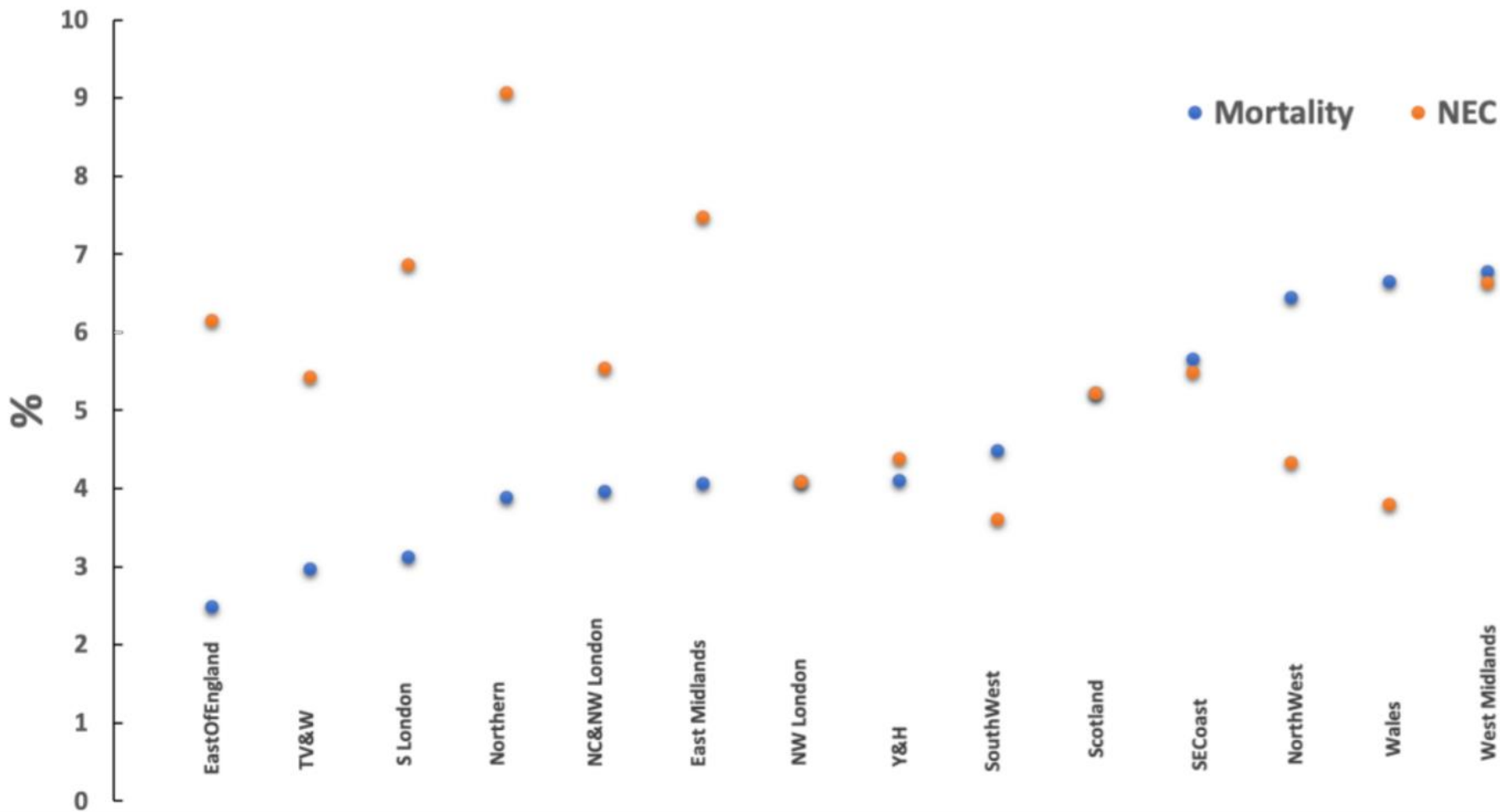
Figure 20. Breastmilk feeding at discharge home, by NNAP reporting year (2013 to 2019), for very preterm babies



- **Rates of breastmilk feeding**

The proportion of very preterm infants fed with some of their mother's own milk at the time of discharge has remained persistently low over 5 years, with marked geographical variation.

## Mortality Vs NEC Rates (%)



# NNAP 2019 recommendations

- Focus on both the **early initiation** and sustainment of breastmilk feeding in conjunction with parents by:
  - Reviewing data and processes in order to undertake selected **quality improvement** activities suited to the local context
  - **Removing barriers** to successful breastmilk feeding by ensuring that appropriate and comfortable areas are provided with adequate, regularly cleaned expressing equipment
  - Seeking and acting on feedback from local parents on their experience of starting and sustaining breast feeding
  - Working to achieve and sustain both UNICEF UK Baby Friendly Initiative Neonatal Unit accreditation and Bliss Baby Charter accreditation
  - **Implementing the guidance and evidence-based care practices set out in the BAPM Maternal Breastmilk Toolkit**
  - Working with local parents to review and improve local practices around the **early communication of the benefits of breastmilk, ideally prior to birth** wherever possible

# Purpose of MBM toolkit

- To improve the proportion of preterm babies (<34 weeks) receiving maternal breast milk.
- To support clinicians leading and participating in QI in maternity units by providing practical resources in the form of a toolkit and supporting materials:
  - Providing the evidence base for effective interventions
  - Facilitate units in interrogating their own data and processes in order to undertake selected quality improvement activities suited to the local context
  - Assist units in interpreting and monitoring the results of their QI activity
  - Provide and signpost resources to facilitate QI in the area of optimising MBM for the preterm infant



## Core elements that support the optimisation of early MBM

- |    |  |
|----|--|
| 1  | <b>Parents as equal partners in their baby's care:</b> Parents are empowered to take part in all elements of their baby's care, facilitating strong close and loving attachments |
| 2  | <b>Antenatal education:</b> Educating families about the value of MBM in prematurity, importance and process of early expressing   |
| 3  | <b>Initiation of expressing soon after birth (aim within 2 hours):</b> With easy access to support, training and equipment   |
| 4  | <b>Early Colostrum (ideally within 6 hours of birth and always within 24 hours):</b> MBM to be the first enteral feed given to baby  |
| 5  | <b>Early and regular parental physical contact with their baby:</b> Delivery room contact, skin-to-skin early and often  |
| 6  | <b>Positive oral touch and non-nutritive sucking</b>   |
| 7  | <b>Establishing a good milk supply:</b> Regular expressing assessments and an understanding of optimal expressing  |
| 8  | <b>Responding to challenges around lactation and breastfeeding:</b> Recognition of complex situations, specialist lactation support available                                    |
| 9  | <b>An infant led approach to the transition to responsive feeding:</b> Recognition of feeding cues and a structured approach   |
| 10 | <b>Successful breastfeeding after discharge:</b> Supporting parental confidence and knowledge  |

The  
perinatal  
toolkit

Toolkit  
Part 2,  
due  
2021

**1** **Parents as equal partners in their baby’s care:** Parents are empowered to take part in all elements of their baby's care, facilitating strong close and loving attachments

Evidence	Reference source
FIC increased any breastfeeding at discharge from 46% to 82% (pilot RCT)	O’Brien 2013 <sup>42</sup>
FIC increased “high frequency breastfeeding” (≥6 times a day) at hospital discharge from 63% to 70% (cluster RCT)	O’Brien 2018 <sup>43</sup>
Policies promoting early involvement of parents in feeding support were associated with increased MBM feeding at discharge for moderately preterm babies, with an adjusted odds ratio (OR) of 1.9 (multicentre cohort study)	Mitha 2019 <sup>44</sup>



## Antenatal education: Educating families about the value of MBM in prematurity, importance and process of early expressing

### The benefits of Breast Milk for premature babies



**Evidence suggests that for premature babies, their mother's fresh breast milk is the most important and effective nutrition that is available.**

Your breast milk has a vital role in protecting your premature baby's gut from necrotising enterocolitis, a devastating gut condition. It also helps their brain, immune system, eyes and lungs. For premature babies, breast milk is associated with improved development as the baby grows up (development includes skills like walking, coordination, speech).



#### Every drop counts

Each millilitre of their mother's breast milk has a positive influence on outcomes for premature babies.

All babies, no matter how early or unwell, can receive their mother's colostrum (special early breast milk) into their mouths.

Your breast milk is specifically designed for your baby in terms of nutrition, optimum gut health and immunity.

### Making the decision to provide breast milk for your baby

**You may not have decided yet how to feed long term, but if your baby is born prematurely you will be encouraged to express milk for them very soon after birth.**

Whilst this can be overwhelming and a lot for you to process, the midwives, nurses and feeding specialists will be on hand to talk to you and help you with expressing, storing and delivering your breast milk to your baby. This leaflet is designed to share some of the science behind the benefits of breast milk for preterm babies.

#### When can I start expressing breast milk for my baby?

Although you may give birth early, your body will still be able to make breast milk, but your breasts will need the stimulation of regular expressing to start and maintain breast milk production.

#### Expressing before your baby is born

You can start expressing breast milk for your baby even before they are born. You must discuss this with your doctor or midwife before you start as **antenatal expressing should only be done once it is certain that you will give birth to your baby in the next few hours.**

You can discuss this with the obstetric and midwifery team to support your decision.

- Antenatal expressing can be done by hand or by using the special 'Premature Breast Pump'. Expressing by hand or pump encourages your breasts to have milk available at birth. This would mean your breast milk can be one of the first (and most important) treatments your baby receives.

#### Expressing after your baby is born

- Evidence shows that if you can **express within the first 1 – 2 hours after giving birth**, your milk volumes will be over double by 7 days (compared to if you wait until later than 2 hours after giving birth), and this difference continues until at least 4 weeks.

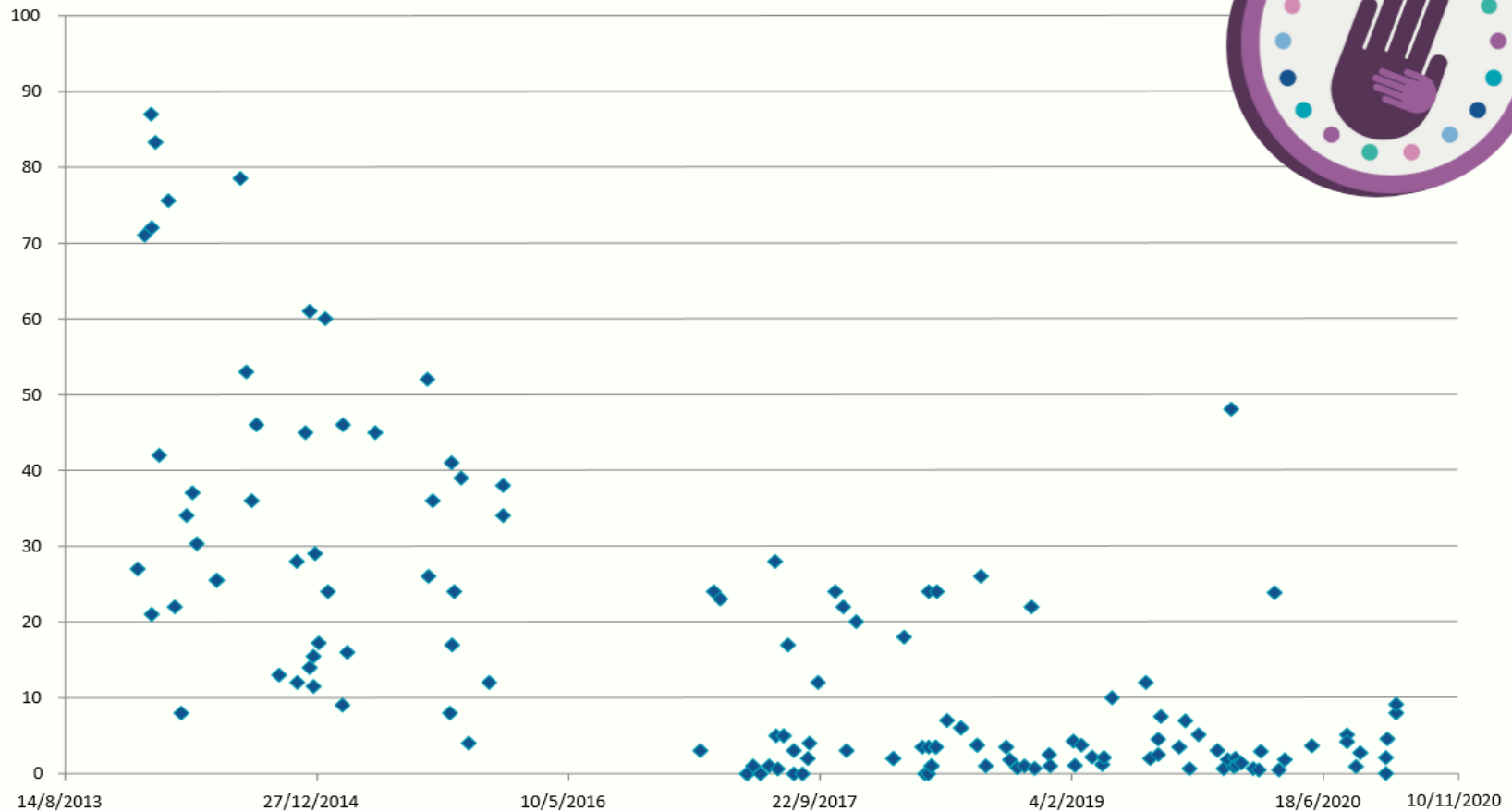


**3 Initiation of expressing soon after birth (aim within 2 hours): With easy access to support, training and equipment**

Evidence on initiation of expressing	Reference source
Expressing within 1h of birth (compared to 1-6h) increased expressed milk yield from 267ml/d to 613ml/d at week three of life (pilot RCT)	Parker 2012 <sup>48</sup>
Expressing 1-3h after birth (compared to 3-6h) increased any breastfeeding at discharge from 35% to 62% (RCT)	Parker 2017 <sup>49</sup>
Adjusted odds ratio of exclusive formula feeding at discharge was 1.06 for each hour of delay to first expression (cohort study)	Maruyama 2016 <sup>50</sup>
Policies promoting initiation of expression within 6h of birth were associated with increased MBM feeding at discharge for very preterm babies, with an adjusted OR 2.2 (multicentre cohort study)	Mitha 2019 <sup>51</sup>

**4 Early Colostrum (ideally within 6 hours of birth and always within 24 hours): MBM to be the first enteral feed given to baby**

**Time to first MBM (hours after birth) for babies born <32 weeks**



## 5 Early and regular parental physical contact with their baby: Delivery room contact, skin-to-skin early and often

Evidence	Reference source
Volumes expressed immediately after SSC are higher than expressing in a room away from baby (adjusted mean of 118ml/session compared to 87ml/session) (cohort study)	Acuna-Muga 2014 <sup>70</sup>
The number of times the baby is put to the breast without feeding (licking/nuzzling) is predictive of milk weight in the first 10d (observational data reported as part of RCT)	Fewtrell 2016 <sup>71</sup>
SSC increases exclusive breastfeeding at discharge or 40 to 41w (RR 1.16) and at 1-3mo follow-up (RR 1.20) (Cochrane review)	Conde-Agudelo 2016 <sup>72</sup>
Policies promoting kangaroo care were associated with increased MBM feeding at discharge for very preterm babies (adjusted OR 2.3) and moderately preterm babies (adjusted OR 2.0) (multicentre cohort study)	Mitha 2019 <sup>44,51</sup>
60mins of SSC in the delivery suite increased exclusive breastfeeding at discharge from 69% to 86% (non significant trend; study underpowered). Note, infants had received “less invasive surfactant administration” if appropriate before SSC, had intravenous dextrose running and SSC was performed in a room with ambient temperature of 24°C	Mehler 2019 <sup>69</sup>



# Thank you to the toolkit working group.

- **Julie-Clare Becher**, Consultant Neonatologist, NHS Lothian, Edinburgh, BAPM Quality Collaborative Lead
- **Gillian Bowker**, Infant Feeding Advisor, NHS Greater Glasgow and Clyde
- **Cathy Budd**, Infant feeding Specialist Nurse, North Bristol NHS Trust, Bristol
- **Sara Clarke**, Senior Specialist Neonatal Network Dietitian, West Midlands Neonatal ODN
- **Lindsay Cracknell**, Parent Representative
- **Aniko Deierl**, Consultant Neonatologist, Imperial College NHS Healthcare Trust, London
- **Kate Dinwiddy**, Chief Executive, BAPM
- **Cora Doherty**, Consultant Neonatologist, University Hospital of Wales, Cardiff
- **Kelly Harvey**, Quality Improvement Lead Nurse, North West Neonatal ODN
- **Marcus Hook**, Membership and Finance Coordinator, BAPM
- **Genevieve Howell**, Parent Representative
- **Minesh Khashu**, Consultant Neonatologist and Professor of Perinatal Health, Poole Hospital NHS Foundation Trust
- **Ilana Levene**, Paediatric Trainee, Thames Valley and DPhil Student, University of Oxford
- **Jo Marks**, Professional Lead for Speech and Language Therapy, Manchester
- **Tanya Miles**, Midwife, Great Western Hospitals NHS Foundation Trust, Swindon
- **Nicola Williamson**, Parent Representative
- *Parent Representatives were recruited with generous assistance from Bliss.*