Sustaining breastfeeding post-discharge home among infants born very preterm or very low birth weight

Success of our PRIME-B multidisciplinary quality improvement initiative

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Background

- **Breastmilk (BM) -** multiple short- and long-term benefits for infants born preterm, with greater improvements associated with greater exposure[1,2].
- **Breastfeeding (BF)** - additional benefits, including improved oral-feeding experience and skills, and longer breastmilk exposure[3].
- **PRIME** Quality Improvement Initiative (QII) introduced in 2017 ⇨ To support early maternal BM supply and BM over formula milk as the infant feed type.
- **PRIME-B** QII expanded in 2019 ⇨ To support BF over bottle-feeding as the oral feeding method.

PRIME-B QII was associated with a positive impact on maternal BM and BF rates weight in the neonatal unit among infants born very preterm or very low birth[4].

In the neonatal unit

- **Breastmilk feeding - increased** ⇧ [from 2016 to 2023]
  - Any BM: 95% ⇨ 99%
  - Exclusive BM: 43% ⇨ 66%
  (of infants who received feeds: 2016 n=146; 2023 n=119)
- **Breastfeeding - doubled** ⇧⇧ [from 2018 to 2023]
  - Any BF: 37% ⇨ 73% (exclusive BF: 0% in 2018 and 2023)
  (of infants who received oral feeds: 2018 n=110; 2023 n= 82)

Q. Was the positive impact of our PRIME-B QII sustained post-discharge home?

Aim: To assess the impact of our PRIME-B quality improvement initiative (QII) on maternal breastmilk (BM) and breastfeeding (BF) rates post-discharge (DC) home among infants born very preterm or very low birth weight (VLBW)

Methods

- Multidisciplinary Quality Improvement Initiative
- Focus on practices to support maternal BM and BF throughout each individual's feeding journey
  - Empower parents and staff hospital wide
  - Improve knowledge
  - Provide practical support
- PDSA cycles and audit

Range of Activities

- Parent involvement
- Staff engagement
- Focus groups - mothers and staff
- Staff surveys and feedback
- Guidelines, guidance tools, posters
- Staff teaching, practical demos
- Information – online and printed
- Specialist lactation support – ante/ post-natal
- Multidisciplinary feeding support
- Breast pumps and milk diaries supplied
- Consistent messages hospital-wide
- Awareness campaigns - social media, BF Week
- Personal stories displayed for inspiration

Study Design

Setting
Single centre retrospective cohort study
Tertiary/ Level 3 Neonatal Service

Data Collection
Data gathered from electronic patient records (MNCMS)
Feeding data sourced from out-patient notes – dietitian and medical

Data
Current feed type and method recorded at each out-patient clinic visit
Out-patient contacts categorised by corrected gestational age (GA)

Population	•Infants born <32 weeks GA (very preterm) or weight ≤1.5 kg (VLBW) •Admitted to the neonatal unit and attended out-patient clinic at NMH
Intervention	•Mutidisciplinary Quality Improvement Initiative •To support maternal BM as the feed type and BF as the oral feed method
Comparison	•Pre PRIME-B QII: Infants born 1st January to 31st December 2018 •Post PRIME-B QII: Infants born in 1st January to 31st December 2023
Outcome	•Maternal BM and BF rates post-discharge home •Recorded at out-patient clinic visits

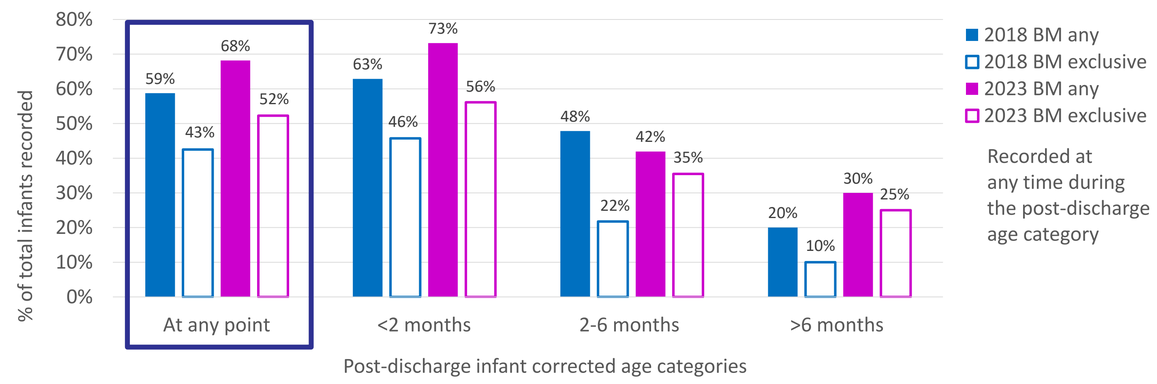
Results

Feeding data were available for 128 (98%) of 130 infants who attended an out-patient clinic in the pre and post QII time periods. All infants received oral feeds. The breakdown of infants who had data recorded of total attendees is as follows:

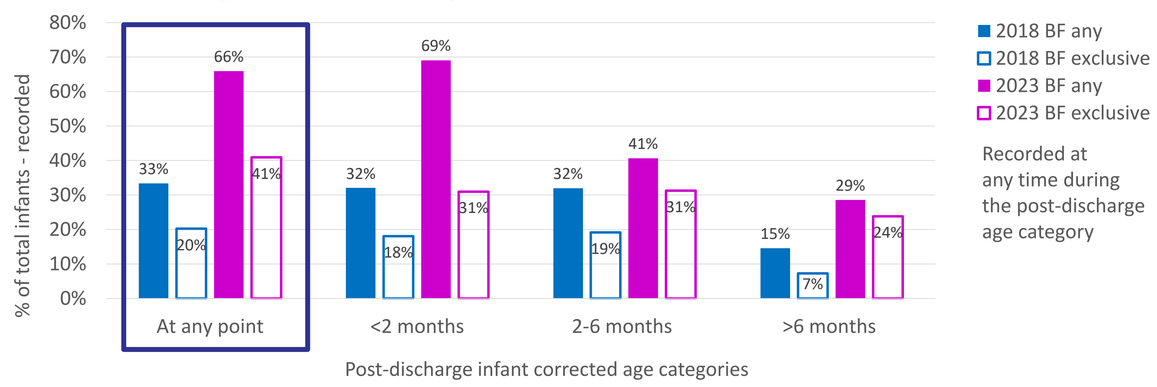
Pre QII [2018]	84 out of 85	99%
Post QII [2023]	44 out of 45	98%

The rate of maternal BM and BF increased over the 5 years from 2018 to 2023 in each post-DC age category and for all age categories combined, i.e. 'at any point'. The highest rates were seen in the earlier post-DC period and declined over time.

Breastmilk Feeding Post-Discharge Home



Breastfeeding Post-Discharge Home



Conclusion

- **PRIME-B QII was associated with improved maternal BM and BF rates post-discharge home among infants born very preterm or VLBW.**

  Post-discharge home
  - **Breastmilk feeding – increased** ⇧ [from 2018 to 2023]
    - Any BM: 59% ⇨ 68%
    - Exclusive BM: 43% ⇨ 52%
  - **Breastfeeding – doubled** ⇧⇧ [from 2018 to 2023]
    - Any BF: 33% ⇨ 66%
    - Exclusive BF: 20% ⇨ 41%
- **Suggests positive impact of our PRIME-B QII sustained post-discharge home.**
- **Continued effort needed to further improve rates and associated benefits.**
- **Our PRIME journey continues …**

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References: [1]**Parker** MG, Stellwagen LM, Noble L, Kim JH, Poindexter BB, Puopolo KM; American Academy of Pediatrics Section on Breastfeeding, Committee on Nutrition, Committee on Fetus and Newborn. Promoting Human Milk and Breastfeeding for the Very Low Birth Weight Infant. Pediatrics. 2021;148(5):e2021054272. [2]**Sullivan** G, Vaher K, Blesa M, Galdi P, Stoye DQ, Quigley AJ, Thrippleton MJ, Norrie J, Bastin ME and Boardman JP, Breast Milk Exposure is Associated With Cortical Maturation in Preterm Infants. Ann Neurol, 2023;93:591-603. [3]**Meek** JY, Noble L; Section on Breastfeeding. Breastfeeding and the Use of Human Milk. Pediatrics. 2022;150(1):e2022057988. [4]**Murphy** MC, Dunne E, McCarthy R, O'Hagan L, Batson H, Curley A, PRIME (preterm infants need milk early) - Success of a multidisciplinary quality improvement project in a tertiary neonatal unit, J Neonatal Nursing 2021;27(2).

Further information
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