

# Challenges in donor breast milk banking: regional survey of an operational delivery network

Donor breast milk has been shown to provide health benefits for the preterm infant. Despite there being a number of donor milk banks in the UK, there is varied use of donor breast milk among neonatal units. This article describes a regional survey of an operational delivery network and the potential challenges of donor milk banking in the UK.

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## Key points

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1. Donor breast milk (DBM) is often preferable to artificial milk formula feeding in preterm infants.
2. Major challenges in the use of DBM are lack of national guidance on its indications, perceived lack of accessibility and absence of formalised care pathways.
3. National guidance on the use of DBM, regional formalised guidance and further research would help to share good practice in neonatal milk banking.

Donor breast milk (DBM) has been shown to provide short- and long-term health benefits for the preterm infant.<sup>1,2</sup> It helps in improving feed intolerance, reducing necrotising enterocolitis (NEC)<sup>3</sup> and improving longer term outcomes such as cardiovascular health,<sup>4</sup> cognition<sup>5</sup> and bone mineral content.<sup>6</sup>

Donor milk use is also associated with higher rates of exclusive breastfeeding on discharge.<sup>7-9</sup> Other studies show that DBM use does not decrease rates of exclusive breastfeeding at discharge but does reduce the use of infant formula in the first four weeks of life and enables earlier initiation of enteral feeding.<sup>10</sup> Despite endorsement of the use of DBM by several international bodies, including the World Health Organization, and published operational guidance for donor milk bank services in the UK by the National Institute of Health and Clinical Excellence (NICE)<sup>11</sup> there is no national agreement on the indications for its use. This is highly influenced by the lack of high quality unequivocal evidence or data in the literature. Most earlier trials comparing DBM and preterm formula were undertaken over the last few decades; are heterogenous in nature; and involve unfortified donor milk as the sole diet, leading to slower rates of short-term growth. The effects of fortified DBM as a supplement to mother's own milk, on feed tolerance and short-term growth rates is not clear. In current practice, randomised controlled trials are difficult as it is not acceptable to randomise infants to exclusive formula feeds or DBM, if mother's own milk is available.

Breast milk banking first started in the

UK in 1939 with the establishment of Queen Charlotte's Hospital milk bank in London. There are currently 17 milk banks operating in the UK that provide DBM; either free or with an administration and processing fee. There are single nationwide banks in Scotland and Northern Ireland, which are based on the 'hub and spoke' model. This has eliminated the inequitable access to donor milk in these two nations, as infants with a clinical need for donor milk at neonatal units that were previously geographically located at great distances to the health authority running the donor milk bank are now also able to access DBM in a timely fashion. This ensures that there is no 'postcode lottery' and that all high risk infants in various hospitals have access to human DBM. This commitment to milk banking required the development of an infrastructure that includes screening potential donors locally and improving the coordinated transport and despatching of processed milk.

## Current provision for DBM in the east of England operational delivery network

The donor milk bank based at the Rosie Hospital, Cambridge, is one of 17 milk banks in the UK. It was initially developed to support the on-site tertiary level neonatal unit. The supply of donor milk to other units within the east of England operational delivery network (EOE ODN) is free of charge and has been a gradually increasing practice that had not been matched by infrastructure, workforce or resources. The EOE ODN comprises 17 hospitals, which provide varying levels of

neonatal care. It includes three tertiary neonatal units (level 3), ten local neonatal units (level 2), and four special care baby units (level 1). Although there are regional guidelines on enteral feeding in preterm infants that detail proposed indications for the use of DBM, there is no formalised pathway for units to access DBM, and inconsistent availability across the network.

### Regional survey on DBM banking

During a service evaluation in 2014, a regional survey was conducted to establish the likely future demands for DBM across the EOE ODN, with the aim of optimising provision. An email questionnaire comprising 10 questions (**TABLE 1**) was sent to the lead nurses in each of the 17 neonatal units across the network. The response rate was 100%. The results are detailed in **TABLE 2**.

All neonatal units using DBM obtained it from the Cambridge milk bank. Two units also on occasion requested and paid for DBM from out of region sources, due to inadequate supplies from Cambridge. Although all units were able to request supplies from the Cambridge milk bank, the main reason for not using DBM was a perceived non-availability. Of note, two of the three tertiary units were regular users of DBM. This may have been due to easy access, as one unit hosted the milk bank; both these units were also neonatal surgical units. The remaining tertiary neonatal medical unit did not use DBM due to its perceived non-availability. It is relevant that only 40% of the ten level 2 neonatal units used DBM regularly, as one of the potential uses of DBM includes infants born 28-34 weeks' gestation with intrauterine growth restriction, or absent or reversed end-diastolic flow in the umbilical artery, and these categories of infants would be likely admissions for such units. Most units quoted evidence-based practice as the rationale for use, although unequivocal evidence is lacking. All units expressed an interest in using DBM if a formalised pathway existed within the network and 76% were interested in recruiting milk donors.

### Discussion

Although several countries have shown impressive commitment to breast milk banking through networks of numerous milk banks and collection stations, there are still some challenges in the UK. This survey demonstrates that there is interest

Question	Options
1. Do you currently use DBM on your neonatal unit?	Yes No
2. If so, do you request DBM from the milk bank based at the Rosie Hospital, Cambridge?	Yes No
3. What are the indications for DBM on your unit?	Gestational age <28 weeks Gestational age <32 weeks with IUGR Gestational age <34 weeks with AEDF/REDF Extremely low birth weight <1000g Post-necrotising enterocolitis Post-surgical infants Other
4. What is the unit's rationale for using DBM?	Evidence-based practice As a maturational concept – transition to establishing feeds As an adjunct to establishing breastfeeding Nutritional Other
5. If not, what are the reasons for your unit not currently using DBM?	Non-availability Not current practice in the unit Poor uptake by parents Other
6. If there was a formalised pathway for receiving DBM in the EOE network, would your unit be interested in using DBM?	Yes No
7. What volume of DBM (in litres/year) do you currently require, or, estimate your requirement to be?	
8. Currently DBM is available from the Rosie milk bank free of cost. Would your unit consider using DBM or continue to use DBM if it was available at a price that reflected the processing and handling costs, as is the case in other milk banks?	Yes No
9. Would there be availability for an allocated local lead/DBM champion?	Yes No
10. If there was a donor care pathway coordinated by the milk bank, would your unit like to be involved in recruiting potential breast milk donors?	Yes No

**TABLE 1** Questionnaire on the use of donor breast milk within the neonatal unit. Key: DBM = donor breast milk, IUGR = intrauterine growth restriction, AEDF/REDF = absent or reversed end-diastolic flow in the umbilical artery, EOE = east of England.

in the usage of DBM among units across a neonatal network. However, perceived non-availability and lack of a national framework of guidance on indications of use, which reflects a lack of evidence on which to base those guidelines, constitute major limiting factors. A recently published nationwide telephone survey of the use of DBM in neonatal units across

the UK also cited access to DBM as one of the most commonly reported limiting factors (49.3%) for not using DBM.<sup>12</sup>

Suggested recommendations following this survey include increasing awareness of regional guidelines on enteral feeding of the preterm infant through education programmes and local champions, and the development of a network formalised

Parameter	Number/total	Percentage (%)
Units using donor breast milk (DBM)	8/17	47
Level 2 units (local neonatal units) that use DBM regularly	4/10	40
Units that were interested in using DBM, if a formalised pathway existed within the network	17/17	100
Units willing to pay an administration and processing charge	15/17	88
Units interested in recruiting milk donors	13/17	76

**TABLE 2** Results of the regional survey on the use of donor breast milk within neonatal units.

pathway for units wishing to use DBM. A framework for the use of DBM is currently in development by a British Association of Perinatal Medicine (BAPM) Working Group, which may help to further develop national guidance. Further research is required on the nutritional aspects of DBM, with the evolving practice of fortification of milk feeds, and the optimum period of use of DBM, whether as an adjunct to breastfeeding or to aid in the transition to breastfeeds.

Future developments may include aiding existing regional milk banks to be formally contracted and equipped to provide DBM for all units within a specified region, in keeping with the single nationwide banks in Northern Ireland and Scotland. This 'hub and spoke' model requires resources, planning and infrastructure. A national,

appropriately resourced, fully coordinated milk bank service would ensure that all staff involved in neonatal care are able to collectively share good practice with regards to the use of DBM. However, a nationally resourced model may require further research and evidence on the optimal indications for use, and a consideration of the health economic consequences.

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