

Improving the Provision of Expressed Breast Milk in the Neonatal Unit: A Quality Initiative Galway University Hospital

Human milk is the optimal source of nutrition for all babies but particularly for sick and preterm infants. Indeed, the provision of breast milk is an important part of a premature infant’s treatment plan, providing life saving benefits. Such benefits include enhanced immunity, improved feeding tolerance and protection against the life-threatening disease Necrotising Enterocolitis (Lucas and Cole, 1990). Infant formula cannot replicate these benefits. All staff on the Neonatal Intensive Care Unit (NICU), Galway University Hospital (GUH) are proactive in encouraging mothers to express breast milk for their fragile preterm infants, some of whom are born as young as 24 weeks gestation. The provision of maternal milk is fundamental for these vulnerable infants.

In June 2014 a group from the NICU team met and developed a strategy to promote early expression of colostrum, thus reducing the need for donor expressed milk (DEBM) in the first few days post delivery. A further aim was to assist mothers of preterm infants to optimise their supply of expressed milk (MEBM). The Mothers Own Milk (M.O.M.) group was formed comprising of the following staff; Bríd O’Brien C.N.M.2; Mary Coyne C.N.M.1; Bernadette Carroll S/N, IBCLC; Irene Glynn S/N; Ana O’Reilly-Marshall Senior Neonatal Dietician and Teresa Hughes Lactation Consultant.

Potentially remediable factors were identified and the following quality improvement intervention was devised by the group:

Staff Education to Highlight the Importance of MEBM for Preterm Infants

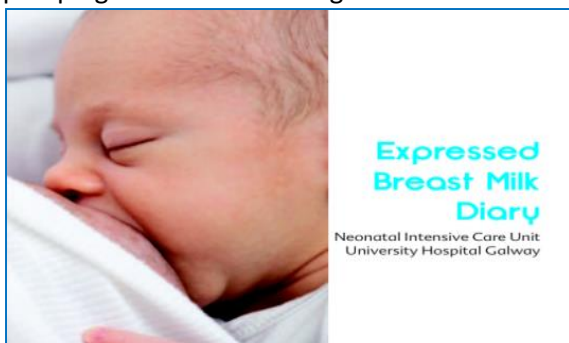
Commencing in August 2014, a weekly power point presentation was given by a group member to postnatal, antenatal, labour ward and NICU staff. The main goal of the presentation was to ensure all mothers of preterm infants, especially VLBW, were shown how to hand express breast milk within 6 hours of delivery. Colostrum, also known as ‘liquid gold’, provides infants with a condensed form of highly valuable nutrients in the first 3 days of life.

Loan of Breast Pumps to Mothers

Ten hospital grade double electric pumps were purchased through the NICU Parent’s Fund. These pumps are loaned to mothers for the duration of the baby’s stay in the NICU. Previously, mothers would have had to hire a breast pump to continue expressing at home. This proved to be a financial burden for some mothers and could potentially impact her ability to express breast milk for her infant. Feedback from mothers who have received breast pumps for home use has been very positive

Development of Expressed Breast Milk Diary

Bernadette Carroll has developed the first Expressed Breast Milk Diary for the Saolta Group to assist mothers of preterm infants to optimise their milk supply. Mothers use the diary to monitor the volume of expressed milk that they produce for the first 10-14 days after birth. The diary also provides mothers with useful information regarding how often to express and how to increase/maintain their milk supply. By monitoring the amount of milk that a mother is producing, staff can advise her on modifying her pumping schedule according to the amount of milk that she is producing.



Today's Date: _____

Time of Day	Circle Method of Expressing	Duration	Volume from Left Breast	Volume from Right Breast	Circle where you expressed
1.	Hand/Pump				Hospital/Home/Other
2.	Hand/Pump				Hospital/Home/Other
3.	Hand/Pump				Hospital/Home/Other
4.	Hand/Pump				Hospital/Home/Other
5.	Hand/Pump				Hospital/Home/Other
6.	Hand/Pump				Hospital/Home/Other
7.	Hand/Pump				Hospital/Home/Other
8.	Hand/Pump				Hospital/Home/Other
9.	Hand/Pump				Hospital/Home/Other
10.	Hand/Pump				Hospital/Home/Other
Total Volume					

Audit Design:

- Case-note audit: All infants admitted to the neonatal unit \leq 32 weeks gestation over a 6 month period.
- Informal discussions with staff on the neonatal unit.
- Informal discussions with mothers of infants on the postnatal unit.
- Retrospective use of DEBM.

Findings Prior to Introduction of Quality Improvement Intervention

There was often a delayed commencement in hand expressing (>24 hours) and there appeared to be a lack of awareness over who should support the mother to initiate lactation.

Mothers reported inconsistent advice/information from neonatal and postnatal nursing staff. Lack of on-going support after initiation of expressing was also highlighted as being problematic for mothers.

Nursing staff reported insufficient knowledge to support mothers providing EBM. Furthermore, personal opinions / beliefs were also identified as possible barriers to successful expressing/breastfeeding.

Post Intervention Results

Findings from this quality initiative demonstrated that preterm infants were being provided with colostrum/MEBM earlier, thus reducing the use of DEBM. There was a notable improvement in mothers being supported in initiating hand expression within 6 hours of birth by labour ward, postnatal and neonatal nursing staff. This resulted in babies receiving colostrum on average one day earlier than previously (25% improvement). On average the days receiving parenteral nutrition was reduced by 2.3 days (24% improvement).

Apart from the better short term and long term health benefits associated with the provision of MEBM, there are also cost saving benefits for the health care system. Economic benefits in terms of reduced risk of sepsis (2:350) and NEC (1:350) plus the reduced use of DEBM and formula may be substantial

Currently:

- The NICU breastfeeding guideline is being reviewed.
- A restructure of nursing documentation is also being undertaken so that it is more quantifiable for future audits.
- The Breast Milk Diary is being audited.
- Recruitment of staff nurses/midwives to undertake the IBCLC course is also taking place in GUH. Irene Glynn, on behalf of the group, presented the Quality Initiative at the 3rd Galway Neonatal Study day in October 2015.

References: Lucas, A. and Cole, T. (1990) Breast Milk and Neonatal Necrotising Enterocolitis. The Lancet, 336 (8730), pp1519-1523.

Quotes from mothers who were loaned pumps: *names have been changed to protect confidentiality.

"The loan of the pump by the NICU reinforces how the unit encourages breast feeding, as breast milk is best for our premature baby. Thanks to the amazing staff, our daughter Emma, who was born at 29 weeks and weighed 940gms, was discharged home at 39 weeks, weighing 2.48kg, exclusively on my breast milk" (Mary).*

"I had no intention of breastfeeding until my baby was born 12 weeks premature. The nurses informed me that breast-feeding would be the best option for my baby and it would give him a better start in life. I'm expressing breast milk and now intend to breastfeed my baby" (Mandy).*

Quote from mother re. Breast Milk Diary:

When my son Michael was 5 weeks old, Marie Claire asked how my expressing was going for me. At that time I was very concerned at the volume I was producing as I felt it was quite low and would not meet Michael's needs as he grew. Marie Claire sat with me, listened to my concerns and introduced me to the Breast Milk Diary. I found my volume increased daily and soon my freezer was full of bottles of varying volumes. The diary really helped me to see how I was progressing and I gained confidence in sitting with other mothers who were expressing ("Deirdre")*

Staff Feedback:

"I found that the Breast Milk Diary focused mothers more on expressing."

"The education sessions were very informative and helped ensure that all staff were consistent with their information to mothers."

"Mothers asked for help sooner when their supply was diminishing."



Photo from Saolta University Health Care Group Newsletter July 2015