



BREAST FEEDING THE PRETERM INFANT

EXTRACT FROM THE NEONATAL INDUCTION PROGRAMME

**North West Neonatal
Operational Delivery Network**

Breast feeding the Preterm Infant

Workbook

Introduction:

This work book has been developed to provide the foundations of a sound understanding and practical competency for staff new to neonatal care, as well as to be utilised as part the annual up-date for staff supporting mothers to express and breast feed.

Please complete the practical part of this workbook in the clinical area with your Mentor

Essential Knowledge:

In the early days, most sick and VLBW infants will receive parental nutrition, however ensuring that suitable milk is available for when the infant commences some enteral nutrition is essential.

Breastmilk is vitally important for preterm and sick babies and it is extremely important that all parents who have, or likely to have a preterm or sick baby understand this. Many parents who may have never considered breastfeeding will be open to providing breastmilk when they understand its value to their preterm or sick baby.

Maternity services should alert the neonatal unit if a pregnant woman who may deliver a preterm or sick baby is admitted in order that a conversation about breastmilk and expressing can be arranged.

Mothers own breastmilk is always the first choice of feed (except for a small number of acceptable clinical indications, for example HIV infection. Mothers own breastmilk and particularly her colostrum will bring the greatest benefits to her baby. Colostrum will prime the gut and protect the very immature 'gut' of preterm and vulnerable babies. Colostrum contains several concentrated properties which provide a protective coating to the lining of the gut preventing bacterial transfer.

When infants are born prematurely the breast tissue may not be fully developed and therefore if mothers are to successfully produce milk for their baby in both the short and the long term it is essential to initiate lactation by hand expression as soon after the birth as possible.

The earlier a mother begins to express her breastmilk the better her long-term production will be.

To promote the early initiation of breast milk:

- The advantages of breast milk should be discussed during the antenatal period and at delivery
- Mothers should be encouraged to have skin to skin contact for as long as possible immediately after delivery, this may be more difficult to achieve when the baby is very sick or preterm.
- Mothers of preterm infants should be encouraged to spend as much time with their babies as soon as possible after the delivery.
- Mothers should be encouraged to touch, hold (still holding in incubator is appropriate) and speak to their babies as soon as possible after their birth
- **Start hand expression and dual pumping within the first 2 hours after delivery as early initiation of milk production will help mothers supply days/weeks/months down the line.** Colostrum contains high levels of immunoglobins & anti-inflammatory factors and is good for gut priming and protection of the premature gut.
- Express **Often** at least 8-10 times in 24 hours including once in the night – frequency sends multiple messages to the brain to trigger milk production for the first 2 weeks or until milk production is established
- Long gaps between sessions will reduce future production and lower the fat content of the milk, gaps greater than 5 hours should be avoided and **always** express at least once during the night
- Mothers do not need to express to a strict 3 hourly regime, they are more likely to express frequently if given flexibility in their regime.
- Cluster expressions, whereby a mother may express twice or three times in a four-hour period followed by a gap of 4 -5 hours may work best for some.
- Express **effectively** – teach mothers to gently massage the breast prior to hand expressing within the first couple of hours after birth. The first milk produced is colostrum which is more concentrated, it is present in small quantities and is easier to express by hand. The colostrum can be given to the baby 0.5mls into the cheeks of lower jaw (if your unit policy allows)
- The antibacterial properties of breastmilk combined with the sweet familiar taste provide comfort to babies, stimulates enzyme release and is an excellent way to keep baby's mouth clean.
- Breast massage prior to pumping will help production. Touch is important for the production of the milk making hormone 'prolactin'.

- Be flexible in your approach to how mothers express their milk whilst employing strategies that are known to increase milk production and milk yield such as combining hand and pump expression, massage and dual pumping.
- Encourage mothers to have something to remind them of their baby (photo) to help with milk 'let down'.
- Double pumping can be more efficient in gaining larger volumes in a shorter period of time than expressing both breasts separately. Different size funnels should be available. Too large a funnel will result in decreased milk expressions and too small will cause damage to the nipple and breast.
- Mothers who are supported to express frequently, especially in the first 2-3 weeks will optimize their supply and the better their supply will be in the future.
- Providing mothers with their own expression log so that they can record their expressions is a good strategy. It should be the responsibility of the staff to check the logs and discuss expressing with mothers, so they can monitor and support progress.
- The first two weeks are crucial for priming the breasts and so it is essential that mothers are not just left to manage expressing alone. Further support should be provided to the mother if her milk supply is not increasing sufficiently during this time.
- Evidence suggests that approximately 750mls /24 hours or more by day ten is an indicator of an ongoing milk supply.
- Individual circumstances such as extreme prematurity, changing condition of the baby and maternal condition can all affect the ability of the mother to express effectively.
- Ensure that all mothers have a formal assessment carried out at least four times in the first two weeks to ensure that they are not experiencing problems.
- Long term expressing is a relentless task and ongoing empathy, praise and genuine interest will go a long way to support mothers to continue.
- Failure to remove milk will decrease breasts capacity to synthesis milk.
- Promoting skin contact and ensuring frequent effective expressing should always be the first interventions if milk production begins to reduce.
- Encouraging the baby to root by stroking around the mouth, non-nutritive sucking, positioning hands close to the mouth, skin to skin contact, nuzzling at the breast and expressing a little milk onto his lips are all positive strategies which help promote breast feeding when the baby is ready.

Breast milk provides preterm and sick babies with both nutrition and protective factors which are essential for babies as they are exposed to hospital-acquired infections during their stay in the neonatal unit. The more breast milk a baby can have, the greater the protection offered. In the early days and weeks after birth, preterm and very low birth weight babies are at increased risk of infection because their gut is underdeveloped. This allows pathogens to migrate into the baby's system. Breast milk not only helps to seal the gut but also promotes gut growth and maturity.

Basic anatomy of the breast

- Mammary growth is incomplete in mothers of very preterm infants
- Lactiferous ducts, which secrete milk - notice a change in the underlying texture of the breast (sometimes feels like small peas)
- Lactiferous ducts or milk ducts are located at the outer margins of the areola area
- Stress and anxiety can inhibit lactation

Hand expression:

- Gently massage the breast with two fingers before starting hand expression
- This initiates milk production in mothers of preterm/sick infants who are unable to go to the breast
- Aids removal of the colostrum
- Ways to stimulate oxytocin reflex (*baby should be near Mum, photo of baby*)
- To hand express place the thumb and finger in a C – shape about 2.5cm from the nipple
- Using the finger and thumb, compress and release in a steady rhythm without sliding fingers along the skin
- Milk may take a few minutes to flow, if milk doesn't flow move the fingers slightly up or down the breast and try again
- Watch for drips to become squirts then to subside
- Once flow has subsided rotate fingers & thumb around breast & repeat
- Move around breast until flow stops
- Repeat on the other breast
- Hand expression needs to be **FREQUENT** 8-10 in first 24hrs including once in the night and **EARLY** – soon after birth to achieve maximum production

Mothers should be encouraged to be close to their babies to respond to feeding cues. Long before a baby is ready to feed, mothers can be taught how to recognise their baby's early feeding and pre-feeding cues such as rooting, tongue movement, turning towards the breast, opening eyes, putting hands to mouth. As the baby becomes more developmentally mature these cues will become more evident and provide the basis for responsive feeding.

You should be able to describe and demonstrate on knitted breast. The key principles of Hand Expression

Electric Breast Pumps: follow unit guidelines

- Mother should be encouraged to hand express and use the Electric breast pump within 2 hours of birth.
- Double pumping is most effective.
- Massage before using the pump

Positioning and attachment key principles: (discuss and demonstrate with doll)

- Ask mother if she will allow you to watch her baby feed
- Establish mother's prior knowledge
- 'Hands off' approach
- Demonstrate to mother the correct positioning with doll
- Explain to mother why good attachment is important –painful, sore, reduced milk supply, engorgement (mum) Baby – unsettled poor weight gain
- Correct holding of baby – support spine and back of neck with opposite arm
- Head and body in line
- Held close to mother
- Nose to nipple
- Sustainable position – mother is comfortable
- Wait for gape
- Tongue down
- Lead with chin
- Lower lip reaches breast well away from base of nipple

Signs of effective attachment:

- Chin indenting breast
- Mouth wide open
- Lower lip turned back (if visible)
- Cheeks full and round
- More areola seen above top lip
- Change in sucking pattern – maintain deep coordinated sucks with short pauses mum and staff need to recognise effective feeding (15-20 sucks term 5-6 preterm)
- Pain free feeding
- Baby will come off when finished
- Need to take baby off – use finger to release the suction
- Comes off breast – wind / wake up – offer the other breast
- Start with the second breast next feed

You should:

- ✓ Maintain a ‘hands off’ approach
- ✓ Mothers should be aware that this could be a slow process and to ensure realistic parental expectations regarding the pace at which their baby learns to breastfeed.
- ✓ Give the mother feedback
- ✓ Use simple language
- ✓ Use a logical sequence

Storage of EBM

- EBM can remain frozen in hospital 3 months / 6 months in community in deep freeze –18 degrees
- For defrosted EBM and DEBM check your unit policy

Weaning EBM/DEBM

- Wean according to unit policy

Donor milk

- Use as per unit policy – need consent

Common Problems

Milk Supply diminishing:

- Frequency and duration of expressing – double pumping and massaging before pumping
- Encourage skin to skin
- Photo of baby when expressing
- Express at least once at night
- Stress and tiredness

Useful strategies for supporting Breast Feeding mothers in Intensive Care:

- Massage & hand expression demonstrated within 2hrs 8-10 times and at least once night
- Skin contact - touch /hold baby
- Photo
- Give baby first drops of colostrum – place 0.5ml in each cheek lower jaw
- Demonstrate breast pumps
- Record amount expressed daily
- Skin contact and nuzzling at breast when appropriate
- Formal assessments of expressing

For Baby in HDU:

- Skin contact /nuzzling at breast whenever mum visits
- Demonstrate correct positioning and attachment
- Do not give any bottle feeds
- Cup feed if baby awake and mother not present

3. What can you do to help mothers who are expressing?
4. What should happen to the first small quantities of EBM and why? (If your unit policy allows)

Skin to Skin:

1. Why should skin to skin contact be initiated as early as possible in the PN period?
2. List some of the benefits of skin contact for mother and baby

Hand Expression:

1. Why do you encourage a mother of a baby on the neonatal unit to hand express?

Breast Pumps:

1. Can **YOU** demonstrate the correct use of the breast pumps used on your unit?
2. When should a mother start using the breast pump?
3. How often should a mother use the breast pump?

Positioning and Attachment:

1. What are the key principles of good positioning?
2. How does a baby attach to the breast?

Storage, freezing and defrosting milk

1. How long can fresh breast milk be kept for?
2. How long can BM be frozen for?
3. How should BM be defrosted?
4. How long can defrosted BM be stored for without /with additives?
5. How long can defrosted DEBM be stored for without/with additives?
6. How do you consent for Donor milk?

7. How do you wean from DEBM and EBM?

Feeding Plans:

Intensive Care:

1. What actions are required to initiate and promote breast feeding/the use of EBM in the sick/preterm infant in the first week of life?
2. What are the main principles of supporting breast feeding/the use of EBM in the sick/preterm infant who is being nursed in intensive care?
3. What are some of the problems that mum may encounter?

4. What strategies might you use to overcome these problems?

High Dependency:

1. What are some of the difficulties associated with breast feeding that you may encounter in HDU?
2. What strategies might you use to overcome these problems?

Nutrition

Can demonstrate the knowledge and skills to support enteral feeding in the preterm infant

Learning outcome	Learning outcome
<p>Can describe different methods of administering enteral feeds</p> <p>Can discuss when and how the position OGT/NGT should be tested as per unit guidelines</p> <p>Understands the importance of documenting results</p> <p>Can discuss why it is importance to help the preterm infant to 'learn' the skill of feeding</p>	<p>Can safely pass an OGT & NGT</p> <p>a) Tests & records position of NGT/OGT using pH paper at time of administration according to unit guidelines</p> <p>b) Documents clearly the position of the tube at time of insertion</p> <p>c) Safely administers the feed</p> <p>d) Documents the position of tube in nursing records at the start of the shift and with cares.</p> <p>Can discuss why it is importance to help the preterm infant to 'learn' the skill of feeding and can demonstrate an ability to feed the preterm infant orally in a manner which promotes positive oral feeding</p>
Signature/date	Signature/date
<p>Can discuss the unit feeding guideline</p>	<p>Delivers nutritional care to infants in line with the unit feeding guideline</p>
Signature/date	Signature/date
<p>Can discuss the signs and symptoms of feed intolerance and can identify the correct course of action when:</p> <p>a) increased gastric aspirates</p> <p>b) distended abdomen</p> <p>c) Increased possiting/vomiting</p> <p>d) dirty aspirate</p>	<p>Uses knowledge and skills to deliver care to infants that have:</p> <p>a) increased gastric aspirates</p> <p>b) distended abdomen</p> <p>c) increased possiting/vomiting</p> <p>d) dirty aspirate</p>
Signature/date	Signature/date

Nutrition

Can demonstrate the knowledge and skills to support breast feeding mothers

Learning outcome	Learning outcome
Can discuss the benefits of breast feeding: - for the mother - for the baby	Effectively communicates information to mothers regarding the benefits of breast feeding
Signature/date	Signature/date
Can discuss the difficulties around breast feeding for mothers of preterm infants	Supports mothers who are trying to breast feed their preterm infant – identifies strategies which help mothers who wish to BF
Signature/date	Signature/date
Can discuss the importance of early hand expression Can demonstrate the procedure Can set up the Breast Pump Can clean the equipment	Can supports mothers with ongoing expressing: - including the length of expressions - adequate volumes - when to refer for support - breast health
Signature/date	Signature/date
Can discuss the importance of correct attachment	Can support a mother breast feeding. Can recognise the signs of good attachment and the results of poor attachment
Signature/date	Signature/date
Knows: - how to store/freeze breast milk - how long BM can be frozen - how to defrost BM - how long to keep BM after it has been defrosted	Supports mothers who are expressing and freezing their BM
Signature /date	Signature /date

Nutrition

Learning outcome
<p>Can discuss the reasons for fortification of BM</p> <p>Can discuss the reasons for weaning from BM</p>
Signature/date
<p>Can discuss the reasons why donor BM might be used</p> <p>Knows the unit policy around consenting for donor BM</p> <p>Can discuss the reasons for weaning from donor milk to formula milk</p>
Signature/date
<p>Can discuss the use of pacifiers in the preterm and the term infant</p>
Signature/date
<p>Can discuss the various support groups that are available for breast feeding mothers and knows how to access them</p>
Signature/date
<p>Supports mothers of preterm infants who are establishing breast feeding and helps them access support groups</p>
Signature/date