Ashford and St. Peter's Hospitals
NHS Foundation Trust

Enteral Feeds

Preparation, Storage, Handling, Checking and Administration of Enteral Feeds on NICU / TCU

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Guideline History		
Date	**Comments**	**Approved By**
August 2008	Original Guideline written by Audrey Elmore, Matron NICU/TCU.	Neonatal Clinical Management Group – October 2008. Ratified:- Dr D Haddad, Chair, Children's Clinical Management Group, Oct 2008.
January 2017	Reviewed by Sara Robertson, Matron NICU, - small additions applied	Agreed by Neonatal Guideline Committee – January 2017
February 2018	Reviewed and fully updated and new evidence added by Sara Robertson, Matron NICU and Neonatal Consultants.	
November 2020	Reviewed and additions added.	

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1. Introduction

Also see: Enabling expressing of breast milk and for Cleaning and Storage of Breast Milk collection kits

Background

It is essential to ensure that every baby receives the correct type and amount of milk, at the correct frequency, to ensure optimum growth and reduce complications. It is also essential to ensure that the milk is safe to administer.

1. Preparation

1.1 Aseptic Technique

The aseptic technique must be followed in the preparation of all feeds in health care settings to control the microbiological quality of the feed. Prior to feed preparation, work surfaces must be cleaned with a food-grade anti-bacterial sanitising solution. The aseptic technique combines hand decontamination with the no touch technique to exclude contact contamination from personnel, work surfaces, equipment and environment.

1.2 Additives to Breast Milk

Breast milk fortifiers (BMF) and any other additives should be added to MEBM or DEBM aseptically. Additives should be added as close to the time of a feed as possible. If fortified breast milk would otherwise be wasted, it may be stored at 2 - 4oC for a maximum of 12 hours however avoid such prolonged storage wherever possible.
No significant difference in bacterial growth has been found between MEBM with or without BMF added.

2. Storage, Checking and Administration

2.1 Breast Milk Storage

When a mother expresses more breast milk than is immediately required for a feed, appropriate handling and storage of the milk is required. Storage may include in a refrigerator and/or in a freezer depending on the mother's lactation and ability to be with her baby. It is likely that mothers will express breast milk both at home and in hospital.

Provide dedicated fridges and freezers in suitable locations for storing MEBM. Hospital milk storage fridges and freezers should be lockable or housed in a locked room if they are not constantly supervised. To help prevent milk errors and to promote best practice for the handling and storage of breast milk, only staff should have access to fridges and freezers containing breast milk from more than one mother.

Ensure fridges and freezers are fitted with temperature alarms and externally visible temperature monitoring.

Fridges should maintain a temperature of 2 - 4oC.

Freezers should maintain a temperature of <-20oC.

The internal temperature of all hospital breast milk storage fridges and freezers should be recorded twice a day and the record maintained for 2 years. Appropriate action is required if the recorded temperatures fall outside the recommended range. Breast milk for babies in hospital should be collected in labelled, sterile containers provided by the hospital.

Provide mothers with sterile, tamper evident breast milk containers that meet current health and safety standards with respect to plastic components. Currently this includes absence of Bisphenol A which is banned from feeding bottles sold in the UK and other EU countries.

Provide containers in a range of sizes to enable mothers to use ones which most closely match the volume of milk being collected.

Advise mothers not to overfill the container and to leave room for the milk to expand if frozen.

Provide mothers with printed labels that include the name and medical notes/hospital number of the infant and space for additional information.

The date and time the milk was expressed should be added by the mother.

Details of any additives (e.g. breast milk fortifier) and/or the date and time of thawing if relevant should be added as appropriate.

Use ‘alert’ stickers in the event of the presence of mothers or infants with the same or similar names.

Expressed breast milk should be stored in single expression aliquots. In the event of a mother expressing large volumes of milk, it is advisable to decant some of these into smaller volumes.

2.2 Transporting Breast Milk

Use an insulated cool bag and frozen coolant blocks/ice pack(s) for transporting breast milk during journeys longer than a few minutes.

Care should be taken to ensure the temperature of the milk is maintained throughout the journey by avoiding placing the cool bag next to a car heater, or the parcel shelf.

Fill any spaces in the cool bag/box with frozen coolant blocks/ ice packs to help to maintain the temperature of the frozen or chilled milk throughout the journey.

Similar procedures should be in place whenever frozen or chilled milk is transported between hospitals or from hospital to home.

Always clean cool boxes internally and externally between use eg with disinfectant wipes.

On arrival at the hospital the fresh, chilled or frozen milk should be checked and transferred immediately to the ward or unit fridge or freezer or to a central storage facility if available.

2.3 Storage, Handling and Use of Breast Milk in Hospital

Use the aseptic non touch technique (ANTT) every time a milk feed is prepared. Support mothers to continue to express frequently even if their breast milk is temporarily not being used or they are expressing more than their infant needs. This will help to ensure their milk supply does not diminish.

Initially use any available colostrum in the order it was expressed. Subsequently, where possible, fresh breast milk, expressed closest to the time of the feed should be used. This ensures optimal nutritional quality of the breast milk and its immunological contents will reflect the mother's and infant's recent exposure to infectious micro-organisms as a result of the entero- mammary pathway.

Where any surplus colostrum or very early (transitional) breast milk has been stored frozen it is also advisable that the infant receives this but at the same time ensuring that most of the daily feed is with freshly expressed milk.

Avoid unnecessary handling of feeds by not mixing or combining expressions of milk from a mother unless to make up a feed for immediate use. In hospital it is better to store all expressions separately.

Milk from different mothers should be kept separate at all times using individual labelled trays.

Freshly expressed breast milk may be kept at room temperature (up to 26oC) for up to 4 hours. However if it will not be used within this time for a feed, it should be refrigerated immediately following expression. If breast milk is kept at room temperature and subsequently not used it should be discarded. For this reason, unless a feed is imminent, it is advisable for breast milk to be refrigerated immediately after being expressed even if it is expected to be used within 4 hours.

Fresh breast milk can be stored in a refrigerator for up to 48 hours at 2 - 4oC [55]. This will include any time in the mother's home fridge and whilst being appropriately transported. Refrigerated milk is preferable to thawed milk as it is also the case that freshly expressed breast milk is optimal.

Any breast milk that will not be required for a feed within the 48 hours recommended storage time should be frozen as soon as possible, preferably within 24 hours.
Breast milk that is transferred to the freezer should be labelled with the date and time frozen.

Good communication about her milk supply between the mother and the nursing staff is very important.

Breast milk may be stored frozen at -20oC for up to 3 months for an infant who is hospitalised. If freezer temperatures are not maintained at -20oC (e.g. in the ice box of a fridge or in an old or small freezer) the maximum storage time should be reduced to 2 weeks.

Mothers should be advised that once their baby has been discharged home, the safe frozen storage time can be increased to six months at -20oC if the storage conditions are suitable and so they should not discard milk that is more than 3 months old.

All containers of milk should be clearly labelled using pre- printed labels and /or indelible ink prior to placing in the fridge or freezer.

Defrost and clean freezers every 2 months.

Clean fridges internally once a week or more frequently in the event of spillage and deep clean every 3 months.

Discard breast milk using a designated sink (such as in 'dirty' utility room) and flush with greater quantities of water. Alternatively dispose of breast milk via the hospital's clinical waste system.

Do not use a hand washing sink for disposing of breast milk or for washing expressing equipment.

2.4 Feed Storage

The designated feed storage area or refrigeration should only be used to store prepared feeds and MEBM. It should be securable to prevent unauthorised access to feeds and possible tampering. The temperature of the refrigerator must be monitored and recorded daily; incorrect refrigerator temperatures should be promptly acted upon. The frequent opening of unit refrigerators can result in unsafe storage temperatures. These refrigerators should be deep cleaned each three months.

3. Thawing and Warming Feed

Only use water free methods for thawing and warming feeds. This is to prevent contamination of feeds with water borne organisms which can lead to outbreaks of infection.

Clearly label thawed milk with the 'use by' date and time.

The following methods are recommended for thawing frozen MEBM:

Place container(s) of frozen breast milk in a fridge to thaw slowly. This may take up to 12 hours or more depending on the temperature of the fridge and the volume of milk. Ensure the thawing milk is clearly labelled and placed in a suitable container such as a plastic box.
Frozen milk may be thawed at room temperature if needed more quickly. This will usually take 0.5 - 4 hours depending on the room temperature and the volume of milk.

Care should be taken to check the contents every 30 minutes and the milk transferred to a fridge once thawed/almost thawed.
If using an electric milk thawing/warming device follow manufacturer's instructions for its use and cleaning to prevent cross contamination and overheating.

Thawed milk should be stored in a fridge and used within 12 hours of complete thawing i.e. from the point at which no ice remains in the milk. Alternatively, for ease of recording, if thawing the milk in the fridge, use within 24 hours of placing the container of frozen milk in the fridge.

Breast milk should be kept at room temperature for as little time as possible to prevent microbial growth. In the absence of electric milk warming equipment (warm air devices) a feed should generally take no more than 30 minutes to reach a suitable feeding temperature although large volume feeds may take longer. It should not be necessary to keep breast milk at room temperature for more than 2 hours. Do not return milk to the fridge. Discard unused feeds.

4. Procedure for Checking and Administration of Enteral Feeds on Unit

1. At the start of your shift review the feeding regime for each baby in your care. Note how many mls per kilo the baby is on, what the total volume per 24 hours is, the frequency of feeds, the volume for each feed, the type of milk, and the method of feeding. Ensure that any excess breast milk is frozen within 48 hours, preferably within 24 hours and record date and time of milk frozen on the label.
   Check the drug chart to see if the baby is prescribed any additives to the milk e.g. fortifier, carobel. If so check if the dietician has provided any instructions (recipe) on the purple documentation sheets, contained in the NNAP folder at the baby's cot side.
2. Review if baby needs more or less mls per kilo. If unsure, check with the shift leader/Doctor.
3. Recalculate the total volume per 24 hours feed (working weight[1] of baby X ….mls/Kg). Even if you are not changing the mls/Kg you must check the calculation is correct. Amend record on chart if a change is made.
4. Make a note of when the next feed is due. It is advisable to use the Feeding Time Chart.
5. In advance of feed times, ensure you have the correct milk available and prepare the amount required.
6. For babies on MEBM, daily checks should include checking the amount of MEBM available in the fridge and freezer. To avoid last minute changes to feeding plans for babies due to low supply of MEBM, nurses should speak to mum to explore her current situation with expressing and inform the medical staff promptly.
7. If there is no further MEBM in the freezer, check the baby's notes to find out what alternative milk can be given. If there is no alternative noted, please contact the mother for her agreement to use DEBM (if appropriate) or preferred formula. Discuss appropriate feed with Registrar/Consultant as soon as possible during daily ward rounds if using DEBM instead of MEBM. Ensure a consent form is completed with the mother's signature during her next visit to the unit. Verbal consent is not considered sufficient.
8. If you are using the mother's expressed breast milk (MEBM) or Donor expressed breast milk (DEBM), check that you have some defrosted for the next feed. Label the bottle with the correct name, the date and time it was defrosted. (MEBM and DEBM cannot be
   used if defrosted for more than 24 hours). If there is none defrosted, check the freezer for further supplies and take some out for defrosting, using the oldest first. Ensure you
   label the bottle with a defrost date and time. If breast milk is running low or there is no breast milk available, please check with the parents/Drs an appropriate/preferred alternative. This should be picked up well in advance with the daily checks being done as stated in 6.
9. When removing DEBM from the freezer, enter the baby's name in the batch number page of the DEBM record book attached to freezer. Record in the NAP (Donor Expressed Milk Form).

10. If using MEBM/DEBM draw required amount up into syringe or measure into a bottle. Check the milk with one other member of staff and or a parent, to ensure the decanted milk matches the name of the label prior to administration. Label each syringe/bottle with baby's name, type of milk, date and time prepared using the pre-printed labels.
11. If you are giving milk formula check the name of the formula and the 'Best before' date. Either place bottle at cot side or transfer required amount into a bottle or syringe. If decanting, ensure a pre-printed label is completed with date and time of preparation, type of milk and baby's name, and stick the label to each feed drawn up ensuring labels do not obscure expiry dates.
12. If the baby requires breast milk fortifier (BMF), check the 'recipe' and measure out the required amount for each feed. Put each amount into a sealed container and label its contents with BMF and volume. This can then be put with the feed at the cot side. In some circumstances it may be acceptable to make up 2 feeds at the same time. If this is done it must be used within 4 hours.
13. If on 3 or 4 hourly feeds only put the next feed at the cot side, if 2 hourly fed then put no more than 2 feeds at the cot side. Any other feeds that have been drawn up must be stored in the fridge.
14. At time of feed:
    - Recheck the time of feeding is correct.
    - Check the type of feed and volume of feed to be given.
    - Check the name on the prepared milk.
    - Check the milk prepared is the correct type and volume.
    - If using an unopened bottle of formula, recheck the expiry date.
    - If using MEBM/DEBM, check that the milk has not been out of the fridge for more than 4 hours. Check decanted formula has not been prepared more than 4 hours previously. In both cases if milk has been at the cot side for more than 4 hours it must be discarded and a new feed prepared immediately.
    - Recheck if the baby requires additives and what the 'recipe' states.
    - Measure (if not already done so) and add the additives to the appropriate milk volume as prescribed.
    - If checking MEBM/DEBM, check with one other member of staff or the other of the baby before administration.
    - Check method of feed and commence feeding.
    - Record the date, time, type and method of feed, and the volume taken.
    - Write clearly DEBM or MEBM against each feed when the babies are on mixed feeds as it helps the medical staff during the ward round know if MEBM supply is meeting the babies demand.
    - Document on the feed chart both signatures/initials of the checkers of the EBM.
    - If DEBM is used, record the batch number on the Donor Expressed Milk Form.
    - Bottle feed, discard any feed remaining after one hour of starting feed.

ERRORS

In the event of any errors made, they should be reported to the Shift Leader. Complete a Datix form online.

Parents must be informed.

If the wrong MEBM is given:

- Inform the Sister in charge, parents, and Registrar/Attending Consultant.
- Aspirate the milk out of the baby's stomach.
- Check whose milk has been given and inform that mother. Do not exchange patient details.
- Check HIV status of the mother whose milk was given.

Do not take any microbiological tests without discussing with the attending consultant.

2. Supporting References

Referees:-

NICU Clinical Guidelines 93 – Donor Breast Milk Banks

Guideline for Special Feed Unit June 2016

3. Supporting relevant trust guidelines

NICU Clinical Guidelines 93 – Donor Breast Milk Banks

Guideline for Special Feed Unit June 2016

4. Guideline Governance

a. Scope

This guideline is relevant to all staff caring for babies across neonatal intensive care, transitional care and maternity.

b. Purpose

i. This guidelines aims to facilitate a common approach to the management of babies admitted under neonatal care. At times deviation from the guideline may be necessary, this should be documented and is the responsibility of the attending consultant.

ii. This guideline is subject to regular review to ensure ongoing evidence based practice.

c. Duties and Responsibilities

What is expected from the health care professionals using this guideline to look after infants.

d. Approval and Ratification

This guideline will be approved and ratified by the Neonatal Guidelines Group.

e. Dissemination and Implementation

i. This guideline will be uploaded to the trust intranet 'Neonatal Guidelines' page and thus available for common use.
ii. This guideline will be shared as part of ongoing education within the Neonatal Unit for both medical and nursing staff.
iii. All members of staff are invited to attend and give comments on the guideline as part of the ratification process.

f. Review and Revision Arrangements

a. This policy will be reviewed on a 5 yearly basis.
b. If new information comes to light prior to the review date, an earlier review will be prompted.
c. Amendments to the document shall be clearly marked on the document control sheet and the updated version uploaded to the intranet. Minor amendments will be ratified through the Neonatal Guidelines Group. A minor amendment would consist of no major change in process, and includes but is not limited to, amendments to documents within the appendices.

g. Equality Impact Assessment

Background • Who was involved in the Equality Impact Assessment
Methodology • A brief account of how the likely effects of the policy was assessed (to include race and ethnic origin, disability, gender, culture, religion or belief, sexual orientation, age) • The data sources and any other information used • The consultation that was carried out (who, why and how?)
Key Findings • Describe the results of the assessment • Identify if there is adverse or a potentially adverse impacts for any equalities groups
Conclusion • Provide a summary of the overall conclusions
Recommendations • State recommended changes to the proposed policy as a result of the impact assessment • Where it has not been possible to amend the policy, provide the detail of any actions that have been identified • Describe the plans for reviewing the assessment

h. Document Checklist

To be completed (electronically) and attached to any document which guides practice when submitted to the appropriate committee for approval or ratification.

Title of the document:

Policy (document) Author:

Executive Director:

		Yes/No/ Unsure/NA	Comments
1.	**Title**		
	Is the title clear and unambiguous?		
	Is it clear whether the document is a guideline, policy, protocol or standard?		
2.	**Scope/Purpose**		
	Is the target population clear and unambiguous?		
	Is the purpose of the document clear?		
	Are the intended outcomes described?		
	Are the statements clear and unambiguous?		
3.	**Development Process**		
	Is there evidence of engagement with stakeholders and users?		
	Who was engaged in a review of the document (list committees/ individuals)?		
	Has the policy template been followed (i.e. is the format correct)?		
4.	**Evidence Base**		
	Is the type of evidence to support the document identified explicitly?		

		Yes/No/ Unsure/NA	Comments
	Are local/organisational supporting documents referenced?		
5.	**Approval**		
	Does the document identify which committee/group will approve/ratify it?		
	If appropriate, have the joint human resources/staff side committee (or equivalent) approved the document?		
6.	**Dissemination and Implementation**		
	Is there an outline/plan to identify how this will be done?		
	Does the plan include the necessary training/support to ensure compliance?		
7.	**Process for Monitoring Compliance**		
	Are there measurable standards or KPIs to support monitoring compliance of the document?		
8.	**Review Date**		
	Is the review date identified and is this acceptable?		
9.	**Overall Responsibility for the Document**		
	Is it clear who will be responsible for coordinating the dissemination, implementation and review of the documentation?		
10.	**Equality Impact Assessment (EIA)**		
	Has a suitable EIA been completed?		

Committee Approval (Neonatal Guidelines Committee)			
If the committee is happy to approve this document, please complete the section below, date it and return it to the Policy (document) Owner			
Name of Chair		**Date**	
Ratification by Management Executive (if appropriate)			
If the Management Executive is happy to ratify this document, please complete the date of ratification below and advise the Policy (document) Owner			
Date: n/a			