Team Name: Regional Perinatal Team Lead: Regional Director Public Health-Healthy Living and Director of Health Services – Portage District General Hospital Approved by: Executive Director - North	Reference Number: CLI.5810.SG.006 Program Area: Obstetrics Policy Section: General
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STANDARD GUIDELINE SUBJECT:
Supplementation of the Breastfed Baby

PURPOSE:
Breastfeeding families will receive consistent and appropriate care when considering supplementation of the breastfed infant.

If an infant requires nourishment from a source other than direct breastfeeding, expressed breast milk (EBM) is the optimal choice. If EBM is not available, formula may be used. **Supplemental feedings are not necessary in most situations.**

Supplemental feeding should not be given to breastfed infants unless there is a medical indication for such feedings or by informed parental decision. Supplementation can prevent the establishment of maternal milk supply and have adverse effects on breastfeeding (i.e. delayed lactogenesis, maternal engorgement).

Supplements may alter infant bowel flora, sensitize the infant to allergens (depending on the content of the feeding and method used), interfere with maternal-infant bonding and may interfere with infant weight gain.

Inappropriate supplementation may undermine a mother's confidence about her ability to meet her infant's nutritional needs and give inappropriate messages that may result in continued supplementation of the breastfed infant at home.

Supplementation should not be given to a breastfeeding infant without the parent's informed consent and/or a physician's specific order.

Whenever possible, the goal of supplementation is to return to feeding at the breast.

Care will be provided according to the following guidelines.

DEFINITIONS:
Colostrum – is the thick, clear to yellowish breast milk that is present in the first few days following birth and is easily digested. It is present in small amounts (5-10 mL per feed), as the baby's kidneys are not initially able to handle large volumes of fluids. Colostrum is higher in protein and minerals and lower in fat, carbohydrates and some vitamins

compared to mature breast milk. It has immunoglobulins (mostly IgA) that provides anti-infective protection for the baby. It also acts as a laxative to help the baby pass meconium (RNAO).

Engorgement – Between the second and sixth day after birth, a mother's breasts begin to feel tender, larger and heavier. These sensations are caused by an increasing volume of milk, as well as an increased flow of blood and lymph to the breasts, which aids in milk production. After birth, some breast fullness or engorgement is considered normal. If the baby takes the breast well and removes the milk often and effectively, keep mother and baby together after birth and encourage frequent and effective breastfeeding.

Expressed Breast Milk (EBM) – Breast milk expressed via hand expression or breast pump.

Lactogenesis I – Stage from growth of breast tissue to the beginning of milk production.

Lactogenesis II – Onset of copious milk production occurring between 32 and 96 hours postpartum.

Supplementation – An infant receives nourishment from a source other than breastfeeding. Also refers to a feeding given in place of a breastfeed. EBM is the feeding choice for supplementation.

IMPORTANT POINTS TO CONSIDER:

The routine use of supplemental feedings may result in negative consequences such as:

- **Nipple Preference**
  Breastfeeding and bottle-feeding require different mechanisms for sucking. It is best to prevent artificial nipple preference in a breastfed infant by not giving an artificial nipple for the first 4-6 weeks while the infant is learning to breastfeed.
- **Insufficient Milk Supple**
  Infant suckling at the breast results in the release of prolactin, the hormone that stimulates breast milk production. Breastfed infants who receive artificial feedings will breastfeed less frequently and for shorter time periods, thus decreasing nipple stimulation and milk production.
- **Engorgement**
  Breastfed infants who receive artificial feedings breastfeed less frequently and for shorter periods. This can result in inadequate drainage of the breast, engorgement and decreased milk supply.
- **Psychological Effects**
  When a woman's infant appears to require frequent supplementary feedings, she may perceive that her body is not capable of producing sufficient breast milk to sustain the infant. **Perceived** insufficient milk supply is the most common reason for weaning before the mother's breastfeeding goals are met.

PROCEDURE:

Indications for Supplementation

1. Maternal infant separation.
2. Maternal illness/need for contraindicated medications.
3. Infant demonstrating clinical signs of dehydration.
4. Hypoglycemia or at high risk for hypoglycemia **and** not feeding effectively.
5. Infant who has not fed effectively at 12 hours of age.
6. If parental decision:
   - Determine reason for the request
   - Provide reassurance and teaching that supplement is not necessary except in a few circumstances
   - Work with parents to alleviate any potential or existing breastfeeding problem(s)
   - Discuss and document the implications of supplemental feeds to enable parents to make an informed decision
7. **After a thorough physical examination and assessment of sleep/wake patterns, milk transfer, voids, stools and blood glucose level as appropriate**, the following babies **may** require supplementation:

- Baby has lost greater than or equal to 8% of birth weight **and is not feeding effectively**
  NOTE: Large volumes or a bolus of IV fluids during labour may artificially increase baby`s birth weight and may lead to an artificially large weight loss.
- Baby has not fed the recommended number of feeds in a 24 hour period as outlined in the Newborn Care Map
  - First 24 hours – at least 4 feedings have occurred
  - 25-48 hours – at least 8 feedings

Care Plan Related to Supplementing a Breastfed Baby

These principles ensure a foundation upon which to base a **mutually negotiated plan** (mother and care team) for intervention.

1. A thorough assessment of mother and infant and breastfeeding is required before supplementation is begun. Complete LATCH-R, assessment and review history (i.e. narcotic use in labour, forceps or vacuum extractor, visitors causing mother to restrict breastfeeding).
2. Attempt to optimize breastfeeding whenever possible prior to beginning supplementation.
3. Gentle waking techniques should be attempted for 5 to 10 minutes if baby is sleepy. Frantic infants who will not breastfeed due to extreme hunger tension may be calmed with skin-to-skin contact, hand expressed colostrum or a small volume (~2-5 mL) of formula so that effective breastfeeding can follow.
4. **Infant weight loss is only one indicator of breastfeeding adequacy.** An infant who is **not losing weight but feeding ineffectively** may require appropriate supplementation. If an infant is greater than 8% below birth weight in the first few days of breastfeeding, optimize latch and assess milk transfer. If the infant demonstrates nutritive feeding (swallows) and other indicators of intake care acceptable, encourage frequent effective breastfeeding, reassess nutritional adequacy within 12 hours, and make decisions related to supplementation as appropriate. When attempts to improve ineffective breastfeeding are not successful, supplement is required regardless of weight loss.
5. If supplementing, the parents will need further information about the preferred method of supplementation and other relevant information.
6. If baby is not nursing or is nursing ineffectively, mother should start hand expressing milk and/or pumping breasts every 3 hours as soon as possible (by 12 hours post delivery).
7. For early supplementation, cup feeding is an optimal method for mothers to feed small amounts of colostrum/formula.
8. Whenever possible supplement with colostrum or EBM. If not available, supplement with formula. Refer to table in Supplementation Guidelines for the infant with weigh loss who is not breastfeeding effectively.
9. Feed baby whenever baby exhibits feeding cues.
10. Encourage early/frequent breastfeeding and skin-to-skin contact.
11. When the infant is able to latch, offer the breast first at each feeding.
12. The amount of supplement will vary dependent on the size of the infant, age of the baby, type of supplement and the presenting situation.
13. Increase or decrease supplement according to infant response, signs of milk transfer, satiation and adequate hydration. Supplements can be stopped when infant stooling, voiding and weight gain is consistent with expected outcomes for the breastfed infant.
14. Continue to encourage frequent breastfeeding at least 8 times in 24 hours (after the first 24 hours).
15. Assess mother's independence in the use of alternate feeding method prior to leaving hospital.
16. Upon discharge, mothers are given a list of community phone numbers.
17. Upon discharge, a Postpartum Referral form is completed and faxed to Public Health, along with documentation of breastfeeding difficulties, assessment and interventions if applicable.
18. The Public Health Nurse attempts contact for all postpartum referrals. This initial contact determines the need, timing and most appropriate Public Health Nursing follow up, with a priority focus with vulnerable families.

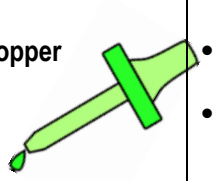
Supplementation guidelines for the **healthy** term infant **who is not breastfeeding effectively**: physiologic feeding amounts

Age of baby	Type of fluid	Amount of fluid per feeding
0-24 hours	Colostrum Formula	2-5 mL (no more than 10 mL) Reflects small stomach size
24-48 hours	EBM Formula (if EBM not available)	10-15 mL 10-15 mL
48-72 hours	EBM Formula (if EBM not available)	15-30 mL 15-30 mL
Day 3-5	EBM Formula (if EBM not available)	100 mL/kg/day divided by no. of feedings per day (based on birth weight)

Supplementation guidelines for the infant with weight loss (greater than 8% of BW) **who is not breastfeeding effectively**

Age of baby	Type of fluid	Amount of fluid per feeding (based on birth weight)
0-24 hours	Colostrum Formula	65 mL/kg/day divided by no. of feedings per day
24-48 hours	EBM Formula (if EBM not available)	80 mL/kg/day divided by no. of feedings per day
48-72 hours	EBM Formula (if EBM not available)	100 mL/kg/day divided by no. of feedings per day
Day 4	EBM Formula (if EBM not available)	120 mL/kg/day divided by no. of feedings per day
Day 5	EBM Formula (if EBM not available)	150 mL/kg/day divided by no. of feedings per day

Supplementation/Alternative Feeding Methods

Feeding System	Strengths	Limitations	Procedure
Cup feeding/ **Teaspoon** 	• Optimal method for short-term supplementation • Does not contribute to nipple confusion • Mother can hand express small (normal) volume of colostrum into cup; this ensures infant receives colostrum • Helps tongue move down and forward • Allows baby to pace his/her feeding • Does not cause breathing problems or oxygen de-saturation. • Provides positive feeding experiences • Can be used when breastfeeding temporarily interrupted	• Does not teach sucking at the breast • No breast stimulation therefore does not increase milk supply • Term babies can become accustomed to the cup and not go to the breast.	Equipment: • medicine cup or disposable teaspoon How to feed: • Swaddle infant • Place upright on lap and support to body/head. • Place edge of cup to baby's lower lip. • Tip cup so milk just touches the infant's lip • The infant will respond to the touch and taste of the milk and drink independently • Leave cup in position during feeding to make milk available to infant as he paces the feeding
Syringe/Dropper 	• Can be used to entice baby to latch at the breast • Can reinforce proper sucking • Can create milk flow to establish and regulate sucking • Rewards sucking attempts	• Often needs a second person to help • Is a foreign object in the mouth • Milk can be improperly injected into the mouth • Is a slow way to feed baby • No breast stimulation therefore does not increase milk supply	Equipment: • Dropper/ 1 mL slip tip syringe How to feed: • Place milk into cheek area and not directly to back of mouth • May also drop onto nipple to entice latching on
Finger Feeding 	• Can be used to "train" a baby with a disorganized sucking pattern • Can be used when breastfeeding temporarily interrupted • Keeps tongue down, forward and cupped • Delivers milk only with correct sucking action	• Baby may not learn to draw nipple into mouth if finger is simply inserted through closed lips • No breast stimulation therefore does not increase milk supply • Potential for irritation of palate from tubing • This type of feed uses more of the infant's energy and therefore is not suggested for a long term feeding solution. Ideally, parents will not be released home using this method.	Equipment: • #5 French feeding tube, 20mL syringe, tape, optional: un-sterile glove/finger cot How to feed: • Prepare feeding tube/syringe • Encourage upright skin to skin while feeding • Insert finger with tube into infant's mouth, just beyond hard and soft palate junction • Place syringe at level of infant's head with plunger present or removed

Feeding Tube at  **Breast/SNS**	• All feeding experience is at the breast--- less opportunity for faulty imprinting • Frequent breast stimulation for enhanced milk production • Consistent practice & reinforcement for latch and suckling at breast • Establishes milk flow to encourage & regulate nutritive sucking pattern	• **Only useful if baby can "latch" and suckle at breast** • Can be cumbersome & unappealing • Need expert follow-up & teaching • May be expensive for some • Improper tube placement may increase problem	Equipment: • SNS supplies or • #5 French feeding tube and 20mL syringe How to feed • Tape tubing to breast with tip placed to the end of the nipple • Tape/hold syringe at level of mother's breast • Plunger may or may not be present
Bottle Feeding 	• Faster & easier for baby to obtain milk • Does not require large time expenditure	• May create nipple confusion • Ease of use may decrease mother's desire to continue breastfeeding • Artificial nipple may weaken baby's suck • Does not teach sucking at breast • No breast stimulation therefore does not increase milk supply • Babies can become accustomed to the bottle & may not go to breast • Fast flow may induce bradycardia, apnea and oxygen de-saturation • Possible improper oral configuration	Equipment: • Bottle How to feed: • Infant held in an upright position • Place bottle at level of the infant's mouth so sucks at the nipple to elicit formula • Paced feeding **Reminder re amounts and stomach size**

Note: Utilize appropriate written resources as an adjunct to nurse teaching as required; ensure family understands both written and verbal information.

Documentation:

1. Document on the Newborn Feeding Record and on the mother's health record if applicable:
   - Mother's informed verbal consent
   - Patient teaching
   - Reason for supplementation
   - Type of supplementation
   - Method of supplementation
   - Amount of supplementation
   - Teaching of hand expression
2. Postpartum Referral, along with a feeding plan if applicable.

SUPPORTING DOCUMENTS:

CLI.5810.SG.006.FORM.01 Newborn Feeding Record

REFERENCES:

Academy of Breastfeeding Medicine Clinical Protocol #3: Hospital Guidelines for the Use of Supplementary Feedings in the Healthy Term Breastfed Neonate (Revised 2009). Accessed July 7, 2014 at http://www.bfmed.org/Media/Files/Protocols/Protocol%203%20English%20Supplementation.pdf

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