

# Perinatal Services BC

## Health Promotion Guideline

### Breastfeeding Healthy Term Infants

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While every attempt has been made to ensure that the information contained herein is clinically accurate and current, Perinatal Services BC acknowledges that many issues remain controversial, and therefore may be subject to practice interpretation.

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## Executive Summary

Exclusive breastfeeding for the first six months of an infant's life and continued breastfeeding for two years and beyond was recommended by Health Canada in 2004 and subsequently promoted and supported by health professional associations and organizations. To promote breastfeeding initiation and increase breastfeeding longevity for attaining this goal, implementation of evidence-based best practices by all health care professionals is critical. A strategy for promoting best practice is the Baby-Friendly Initiative (BFI).

The purpose of this guideline for healthy term infants is:

- To facilitate optimum and consistent lactation care to women and their infants by all health care professionals in both hospital and community settings.
- To increase the number of infants who are exclusively breastfed from birth to hospital discharge and for the first six months of age with introduction of nutritious and safe complementary foods with continued breastfeeding for up to two years and beyond.

These guidelines are based on current evidence and BFI best practices. They are consistent with the *Canadian Baby-Friendly Initiative*; the recommendations of the BC Ministry of Health; Perinatal Services BC (PSBC) education *Breastfeeding: Making a Difference*®; the *BC Baby-Friendly Network Resource Binder*; and the Canadian documents, *Nutrition for Healthy Term Infants* and *Family-Centred Maternity and Newborn Care: National Guidelines*.

The breastfeeding definitions used in the guideline are based on the definitions defined by the Breastfeeding Committee for Canada (BCC) and based on an infant's breastmilk intake. They have been adopted by the provinces and territories throughout Canada, are used in the Perinatal Services BC Perinatal Data Registry (BCPDR), and are based on the World Health Organization (WHO) definitions.

Breastfeeding contributes to improved health outcomes for infants, children, and women who breastfeed and it has long-term positive health effects for individuals who were breastfed. Evidence also shows that the protective effects of breastfeeding are associated with substantial health care savings, decreased parental absenteeism from work, and advantages to the environment.

A Canadian National Survey of a representative sample of women who gave birth during 2005–2006 reports breastfeeding rates of 90.3% for any breastfeeding at initiation; 51.7% at 3 months post-birth for exclusive breastfeeding; and 14.4% at 6 months for exclusive breastfeeding. Although BC rates are the highest in Canada for the same indicators (97%; 61.4%; and 19.2%, respectively), 80.8% of infants in this province did not meet the standard of being exclusively breastfed at 6 months as recommended by Health Canada and health professional organizations.

In BC, the rates for exclusive breastfeeding from birth to hospital discharge as reported in the PSBC 2009/2010 Annual Report: Preliminary Data are 71.7% in 2004/2005 and 72.4% in 2009/2010. A Canadian National Survey of a representative sample of women who gave birth during 2005 – 2006 reported BC breastfeeding rates of 97% for any breastfeeding at initiation; 61.4% at 3 months post-birth for exclusive breastfeeding; and 19.2% at 6 months for exclusive breastfeeding. Although the BC rates are the highest in Canada for these indicators (90.3%; 51.7%; and 14.4%, respectively for Canada), 80.8% of infants in this province did not meet the standard recommended by Health Canada and health professional organizations. Based on these rates, support for mothers to initiate and sustain breastfeeding is a continuing challenge for health professionals and society in BC.

### Breastfeeding Recommendations for Healthy, Full Term Infants

1. Infants are exclusively breastfed for the first six months of life and breastfeeding, with introduction of complementary foods continues for up to two years and beyond. (A)
2. Evidence-based best practices based on the Baby-Friendly Initiative should be used by health care providers when caring for women and their infants. (A)
3. Initiate breastfeeding education in the first prenatal visits providing the parents with information that builds on their knowledge and needs. (A)
4. Place the infant skin-to-skin on the mother following birth so the infant has full access to the mother's breast and nipple and remains skin-to-skin until completion of the first feeding
5. Exclusive breastfeeding should be encouraged and facilitated in the early postpartum period. (A)
  - a. Early and frequent feedings should be supported
  - b. Encourage skin-to-skin contact
  - c. Keep mothers and infants together
  - d. Parents should be shown how to recognize feeding cues
  - e. Parents should be taught how to recognize the signs of adequate breastmilk intake
6. A Breastfeeding assessment of mother and infant should be carried out at key timeframes through discussion and observation (A)
7. Provide support for infants identified with specific challenges (A)
8. Provide support for mothers identified with specific challenges (A)

The recommendations included in these guidelines have been adapted from the Levels of Quality of Evidence for Treatment Recommendations described in The Canadian Task Force on Preventive Health Care (<http://www.canadiantaskforce.ca/>)

The levels of recommendations are:

**Recommendation A** There is good evidence to recommend the clinical preventive action

**Recommendation B** There is fair evidence to recommend the clinical preventive action

**Recommendation C** The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making

**Recommendation D** There is fair evidence to recommend against the clinical preventive action

**Recommendation I** There is insufficient evidence (in quantity or quality) to make a recommendation; however other factors may influence decision making

## 1.0 Introduction

### Recommendation 1:

Infants are exclusively breastfed for the first six months of life with the introduction of nutritious and safe complementary foods with continued breastfeeding for up to two years and beyond. (A)

### Recommendation 2:

Evidence-based *best practices* based on the Baby-Friendly Initiative are used by all health care providers when caring for women and their infants. (A)

Exclusive breastfeeding for the first six months of an infant's life and continued breastfeeding for two years and beyond was recommended by Health Canada<sup>1</sup> in 2004 and subsequently promoted and supported by health professional associations and organizations.<sup>2-6</sup> To promote breastfeeding initiation and increase breastfeeding longevity for attaining this goal, implementation of evidence-based best practices by all health care professionals is critical. A strategy for promoting best practice is the Baby-Friendly Initiative (BFI)<sup>7,8</sup> (see Appendix A).

The purpose of this BC Provincial Guideline for healthy term infants is:

- To facilitate optimum and consistent lactation care to women and their infants by all health care professionals in both hospital and community settings.
- To increase the number of infants who are exclusively breastfed from birth to hospital discharge and for the first six months of age with introduction of nutritious and safe complementary foods with continued breastfeeding for up to two years and beyond.

These guidelines are based on current evidence and BFI best practices. They are consistent with the *Canadian Baby-Friendly Initiative*;<sup>7</sup> the recommendations of the BC Ministry of Health;<sup>9,10</sup> Perinatal Services BC (PSBC) education *Breastfeeding: Making a Difference*®;<sup>11</sup> the *BC Baby-Friendly Network Resource Binder*;<sup>12</sup> and the Canadian documents, *Nutrition for Healthy Term Infants*<sup>2</sup> and *Family-Centred Maternity and Newborn Care: National Guidelines*.<sup>13</sup>

The breastfeeding definitions used in the guideline were defined by the BCC<sup>14</sup> (see Appendix B) and based on an infant's breastmilk intake. They have been adopted by the provinces and territories throughout Canada, are used in the PSBC Perinatal Data Registry (BCPDR),<sup>15</sup> and are based on the World Health Organization (WHO) definitions.<sup>16</sup>

## 2.0 Background, Clinical, and Public Health Significance

Breastfeeding contributes to improved health outcomes for infants, children, and women who breastfeed and it has long-term positive health effects for individuals who were breastfed.<sup>17-22</sup> Evidence also shows that the protective effects of breastfeeding are associated with substantial health care savings,<sup>23-25</sup> decreased parental absenteeism from work,<sup>26,27</sup> and advantages to the environment.<sup>26-28</sup> (see Appendix C)

A Canadian National Survey<sup>29</sup> of a representative sample of women who gave birth during 2005–2006 reports breastfeeding rates of 90.3% for any breastfeeding at initiation; 51.7% at 3 months post-birth for exclusive breastfeeding; and 14.4% at 6 months for exclusive breastfeeding. Although the BC rates are the highest in Canada for the same indicators (97%; 61.4%; and 19.2%, respectively), 80.8% of infants in this province did not meet the standard of being exclusively breastfed at 6 months as recommended by Health Canada and health professional organizations.<sup>1-6</sup>

In BC, breastfeeding rates are documented annually by the BCPDR.<sup>15</sup> Until 2007 the rates included all singleton infants receiving any breastmilk at hospital discharge. Initiation rates were high and changed minimally between 2000/2001 to 2003/2004 (91.1% to 92.2%, respectively).<sup>15</sup> To work towards the recommendation that infants be exclusively breastfed for six months the data registry was expanded to capture exclusive, partial, and no breastfeeding rates for infants from birth to hospital discharge. The most current rates for exclusive breastfeeding from birth to hospital discharge are 71.7% in 2004/2005 and 72.4% in 2009/2010.<sup>30</sup>

Based on these rates support for mothers to initiate and sustain breastfeeding is a continuing challenge for health professionals and society in this province.

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond

These guidelines, based on current evidence, are for health care providers in BC who care for women and infants. Areas addressed are: guiding principles, prenatal, intrapartum and postpartum care which is further delineated into three periods: 2 – 24 hours, 24 – 72 hours, and 72 hours to 7 days and beyond.

#### Guiding Principles for Health Care Providers

In this guideline the recommendations for health care professionals working in both hospital and community health settings are considered *best practices* for breastfeeding care throughout the pre-conception, prenatal, intrapartum, and immediate and extended postpartum periods. A strategy for promoting best practice is the Baby-Friendly Initiative (BFI) (see Appendix A).<sup>6,8,9,10</sup>

Guiding principles:

- Promote exclusive breastfeeding for the first six months of an infant's life with continued breastfeeding for two years and beyond<sup>1-6</sup>
- Support the breastfeeding mother across the continuum of care to breastfeed according to her goals and provide care based on best evidence, assessment of needs, analysis of the data obtained, and a plan of action developed with the mother
- Use principles of adult education when working with parents:
  - Recognize the postpartum period is a continuation of the total childbirth experience
  - Determine what parents know then build on their knowledge and skills
  - Focus assistance on the mothers' and families' needs, their readiness to learn, and information required for them to make informed decisions
- Respect parent's decision making when it is based on accurate knowledge (this is professionally ethical and facilitates respectful discussion leading to informed decision making)

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

#### A. Prenatal Care

##### **Recommendation 3:**

Initiate breastfeeding education in the first prenatal visits providing the parents with information that builds on their knowledge and needs. (A)

- The decision to breastfeed is influenced by the woman's life experiences, beliefs, culture, and the attitudes and views of family and friends. In particular her decision, initiation, and the duration of breastfeeding is strongly influenced by her partner,<sup>32-34</sup> and her mother<sup>32,35</sup>
- Evidence shows that the attitudes and behaviours of health care professionals regarding breastfeeding influence women's initiation, success, and duration of breastfeeding therefore health care providers should show a positive attitude and commitment to breastfeeding rather than assuming a neutral position<sup>36,37</sup>
- Initiate breastfeeding education in the first visit(s). Provide parents with accurate, evidence-based information that builds on their knowledge, individual needs, and concerns and that assist them to make informed decisions early and realistically prepare for their postpartum experience
- Show sensitivity to cultural influences and views but address cultural perceptions which may be incorrect
- Inquire about the mother's support systems
- Assess breasts and nipples: a responsibility of the primary health care provider during an early prenatal visit. Conditions that MAY affect breastfeeding are:
  - lack of breast enlargement during pregnancy
  - breast traumas and malformations
  - breast augmentation
  - breast reduction surgery: the woman's ability to sustain the nutritional needs of her infant following breast reduction is individual and variable

For these mothers:

- counsel the mother about this possibility
  - monitor breastfeeding and infant behaviours in the first postpartum month
  - discuss strategies such as the eventual use of a supplemental nursing system if the mother's milk supply does not increase to meet the infant's nutritional needs
- Discuss prenatal preparation of nipples: use of creams and lotions; and that Hoffman's exercise and nipple "conditioning" is ineffective and not recommended: stimulation may cause uterine contractions, leading to premature labor<sup>38,39</sup>
- Encourage parents to attend support groups and prenatal breastfeeding education sessions
- Prenatal education includes:
  - 1. Exploration of attitudes and feelings**
    - Review maternal and family beliefs and values about breastfeeding and infant feeding
    - Appraise maternal views about breasts, body image, exposing breasts, and others touching her breasts and nipple area
    - Assess maternal self-confidence and perceived competence related to breastfeeding as greater confidence is associated with breastfeeding success
    - Acknowledge maternal perceptions of infant feeding experiences of self and others and related feelings



### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

#### 2. Information

- Breastfeeding encompasses nutritional, immunological, psychological, developmental, and emotional components that contribute to normal growth and development of infants and children, facilitates a positive maternal-child relationship,<sup>13</sup> and provides short and long-term healthcare outcomes for mothers and infants.<sup>17-22</sup> (see Appendix C)
- Impact of lifestyle habits on pregnancy, breastfeeding, and the infant's health, e.g., smoking, alcohol, and substance abuse. (see PSBC Guidelines<sup>40,42</sup> and SOGC Guidelines<sup>43, 44</sup>)
- Responses to basic queries, e.g., why do my breasts and nipples tingle; what is colostrum; how is milk produced; how often will I breastfeed each day; how long does each breastfeeding take; how do I know I have enough milk; should breastfeeding be painful or sore; and can I return to work and still breastfeed?
- Potential effects of anesthetics during labor and birth on the infant's alertness and behaviours that may delay early initiation of breastfeeding and decrease the length of time the infant is breastfed.<sup>44</sup> This may lead to discussion of pain during labor and knowledge of nonpharmacological pain-relief strategies
- Breastfeeding after birth and best practices in hospital:
  - skin-to-skin following vaginal and caesarean births
  - infant's ability to find mother's nipple and suckle effectively
  - offer only breastmilk or human donor milk
  - early and frequent feedings to stimulate milk production and for maternal comfort
  - keep infant at the bedside 24 hours a day
  - observe and educate about infant's behaviors and feeding cues
  - avoid using pacifiers and artificial nipples until breastfeeding is well established
- Need for support and encouragement from family, friends, and health professionals
- Community resources available for assisting breastfeeding mothers

#### 3. Initial breastfeeding skills (see Guidelines to Assist Mother outlined in postpartum care section, 2 – 24 hours)

- Positions appropriate for breastfeeding for mother and infant
- Principles for enabling the infant to latch-on effectively
- Removing the infant from the breast
- Hand expression of colostrum/breastmilk

#### • Potential contraindications to breastfeeding

- Contraindications are rare and breastfeeding is recommended during most maternal infectious diseases, antimicrobial therapy, or immunizations. Contraindications are:
- Permanent conditions: Mothers advised not to breastfeed
  - Infants with classic galactosemia (galactose 1-phosphate uridylyltransferase deficiency)<sup>26,46</sup>
  - Mothers habitually ingesting more than a moderate amount of alcohol (.0.5g/kg/day, equivalent to 2 drinks)<sup>2,45</sup>
  - Mothers who are using illicit drugs<sup>2,26</sup>



### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- Mothers in Canada who are known to be HIV antibody positive are currently advised not to breastfeed.<sup>2,13,45</sup> Counsel and emotional support for the mother is often required if pasteurized donor milk is not accessible.<sup>45</sup> For BC mothers in receipt of Income Assistance, who use breastmilk substitutes due to HIV status, financial help is available
- Mothers with human T-lymphotropic virus type 1 or 2 infection<sup>13,26,45</sup>
- Temporary conditions: If breastfeeding is temporarily contraindicated mothers are encouraged to express their milk until breastfeeding is resumed
  - Mothers with *active* herpes simplex lesions on or near the nipple should interrupt breastfeeding on the breast and nipple affected until lesions are crusted or resolved<sup>2,26,45</sup>
  - Mothers receiving a high-dose of the antibiotic Metronidazole: discontinue breastfeeding for 12 – 24 hours to allow excretion of the dose<sup>45</sup>
  - Mothers with active tuberculosis who are not receiving adequate therapy are considered infectious.<sup>2</sup> Following 2-weeks of appropriate TB drug therapy breastfeeding is recommended as the drugs used are considered safe during breastfeeding.<sup>2,3,45</sup> TB prophylaxis should also be provided to the infant<sup>13</sup>
  - Mothers receiving diagnostic or therapeutic radioactive isotopes or are exposed to radioactive materials<sup>26</sup> until the milk is clear of radioactivity
  - Mothers receiving long-term chemotherapy should temporarily stop breastfeeding for 1 day to 2 weeks depending on the type of isotope used<sup>2,26,45</sup>

## B. Intrapartum Care

### Recommendation 4:

Place the infant skin-to-skin on the mother following birth so the infant has full access to the mother's breast and nipple and remains skin-to-skin until completion of the first feeding. (A)

Care that promotes breastfeeding during labor, vaginal and Caesarean birth, and the first 2 hours post-delivery

### Key Points for Vaginal Births

- Provide intrapartum care that minimizes the likelihood of interventions to protect breastfeeding outcomes
- Encourage labor support from professionals, family and/or friends based on nonpharmacological strategies to minimize use of pharmacologic anesthetics and analgesics.<sup>38</sup> Associations have shown that the effect of epidural anesthesia on breastfeeding are: 1) increased difficulty initiating full breastfeeding during the first few days after birth<sup>44</sup> and 2) earlier termination of breastfeeding<sup>13,47,48</sup> The higher the dose of fentanyl in epidural anesthesia the greater the negative effect on breastfeeding<sup>48</sup>
- Following birth place skin-to-skin on the mother so the infant has full access to mother's breast and nipple. Skin-to-skin contact at birth is associated with improved breastfeeding outcomes, early mother-infant attachment, enhanced mother-baby interaction, less infant crying and greater cardio-respiratory and temperature stability for the infant<sup>49,50</sup>
- Place a warmed blanket over both mother and infant to maintain and stabilize the infant's temperature<sup>51,52</sup>

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- Facilitate mother-infant introduction to breastfeeding; keep them together, skin-to-skin allowing the infant to lick, suckle, and touch the nipple with his/her hand.<sup>53</sup> In the first hour after birth the infant's suckling reflex is generally intense, infants are alert and awake, and mothers have a surge of oxytocin which is associated with milk-ejection, increasing uterine contractions, and enhancing mother-infant attachment<sup>38,53</sup>
- Promote mother-infant togetherness: assess the infant and administer Vitamin K on the mother; delay eye prophylaxis up to one hour<sup>54,55</sup> and postpone infant weight and measurements until completion of the first feeding
- Continue skin-to-skin contact in a position that facilitates the infant to touch the breast if labor has been long or stressful. Place infant skin-to-skin on father or another designate if maternal skin-to-skin is not feasible <sup>56</sup>
- Assist mother with breastfeeding as soon as possible or within 1 to 2 hours
- Maintain a quiet and tranquil environment and use an unhurried and encouraging approach when assisting with breastfeeding.<sup>38</sup> If transport to a postpartum unit is required, keep mother and infant skin-to-skin

#### Key Points for Caesarean Births

- Follow as many of the recommendations for vaginal birth as the situation allows
- Place the infant skin-to-skin on the father's or other designee's chest, and cover with a warm blanket if maternal skin-to-skin is not feasible<sup>56</sup>
- Encourage the mother to breastfeed as soon as possible. Caesarean birth is associated with delayed initiation of the first breastfeeding and delayed lactogenesis<sup>57-59</sup>
- Overcoming obstacles to skin-to-skin contact and early initiation of breastfeeding in the OR/PAR are important to breastfeeding success

### C. Postpartum Care

#### Recommendation 5:

Exclusive breastfeeding should be encouraged and facilitated in the early postpartum period. (A)

- a. Early and frequent feedings should be supported
- b. Encourage skin-to-skin contact
- c. Keep mothers and infants together
- d. Parents should be shown how to recognize feeding cues
- e. Parents should be taught how to recognize the signs of adequate breastmilk intake

The early postpartum period is critical for initiating and establishing breastfeeding. The guidelines are organized to address postpartum hours 2 – 24; 24 – 72 hours; and 72 hours to 7 days and beyond (see section on intrapartum care for the first 2 hours). **All guidelines, however, apply to the entire postpartum period and are applicable to both hospital and community health service settings.**

#### Key points for the postpartum period are:

- Exclusive breastfeeding is encouraged and facilitated
- Human breastmilk is the only nourishment the healthy term infant requires
- Early and frequent breastfeedings are supported

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- Skin-to-skin contact is encouraged to enhance effects; longer breastfeeding duration, early mother-infant attachment, less infant crying, and greater infant cardio-respiratory stability<sup>49</sup>
- Artificial nipples, pacifiers, nipple shields, and breast pumps are avoided unless clinically indicated or until breastfeeding is established
- Recognition of signs of adequate breastmilk intake, by parents, is essential<sup>60</sup> (see Table 1)
- Hand expression of colostrum/breastmilk is taught to all mothers

#### 2 to 24 hours

- Use *Guidelines to Assist Mother to Breastfeed* (see following)
  - Assist mother to breastfeed within 1 – 2 hours after birth and until mother and infant are feeding satisfactorily
  - Feed frequently, a minimum of 5 times in the *first* 24 hours<sup>38</sup> to prevent infant hypoglycemia, accelerate breastmilk production, ensure breastmilk drainage, prevent breast distension and engorgement,<sup>61</sup> and stimulate infant digestive peristalsis and elimination.<sup>38</sup>
  - Encourage breastfeeds throughout the night
- Keep mothers and infants together at all times; perform infant assessments and procedures in the mother's presence
- Encourage mothers to recognize early infant feeding cues such as wiggling, moving arms and legs, mouthing, rooting, fingers or hands to mouth<sup>38</sup> and to breastfeed immediately when cues exhibited
  - Infants that are aroused from a deep sleep will not feed and this leads to a frustrated mother, infant, and health care professional
  - Infants will not breastfeed when they are fully crying and must be consoled and quieted before offering the breast
- Cluster feedings (several feeds close together) are common in the first 24 to 36 hours and help to establish breastmilk production. Assure mother that these frequent feedings are normal; a sign that baby is recovering from birth, and will assist in stimulating milk production. *This is not a sign of insufficient breastmilk nor is supplementation required*
- Feeding duration varies depending on the infant's gestational age, state of consciousness, efficiency of breast attachment and suckle, how quickly breastmilk lets down and maternal comfort
- Infant's stomach volume in the first three days is small and variable;<sup>62,63</sup> an average total feeding amount on day 1 is reported as about 6.1 ml<sup>64</sup>
- Few healthy term infants require supplementation. Acceptable medical reasons for supplementation are described in Appendix D
- Observe and monitor maternal transition from lactogenesis I to lactogenesis II<sup>i</sup> which generally occurs within 72 hours (indicated by breast fullness); this may take longer if the mother is a primipara, has never previously breastfed, has been separated from her baby, or had a Caesarean birth<sup>38,65,66</sup>
- **Avoid use of drugs with Codeine** e.g., Tylenol 3 (codeine 30 mg and acetaminophen 500 mg) for maternal postpartum pain or if used closely monitor and educate the mother how to monitor herself and the infant for opioid toxicity<sup>67</sup>
- Encourage and support a family member to stay with the mother 24 hours a day particularly if she had a Caesarean birth

<sup>i</sup> Other conditions that may contribute to delayed lactogenesis are: type 1 diabetes, labor analgesia, obesity, high levels of stress to mother and infant during birth<sup>52</sup> flat or inverted nipples and infants with suboptimal breastfeeding behaviour.<sup>62</sup>

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

#### Guidelines to Assist Mothers to Breastfeed

##### 1. Breastfeeding Positions and Preparation for Feeding (refer to diagrams in *Baby's Best Chance*)<sup>60</sup>

- Encourage use of non-restrictive clothing that allows easy access to the breast
- Advise importance of comfort and body support throughout each session
- Unwrap the infant and ensure infant is awake and alert
- Promote skin-to-skin contact during breastfeeding
- Hold the infant close; infant's ventral surface faces the mother's ventral surface (i.e. tummy to tummy)
- The infant's head and shoulders are supported and level with the mother's breast and the infant's nose is level with the mother's nipple. The head may be tilted slightly back but not hyper-extended; avoid pressure on the back of the head
- One of mother's hands may support her breast from below during feeding, particularly if the breast is large. The hand or fingers should be back from the areola and not interfere with the infant latching on the breast
- Sitting positions: cradle, modified cradle, or football hold
  - Mother sits upright with back supported, bring infant to the breast rather than leaning towards the infant. Use pillows and foot rest for comfort and to elevate the infant to the level of the mother's breast
  - Mother's arm or hand holds and supports the infant's upper back and shoulders, cradling the neck/base of the skull<sup>13</sup>
- Lying position
  - On the bed, mother and infant side-lie, facing each other; use pillows under mother's head, behind her back, and as necessary between her legs
  - Hold infant close; infant head and neck positions as described above
  - Following the breastfeeding session the baby is placed on his/her back in close proximity (on a separate safe sleep surface) for sleeping.
    - Some parents may choose to share a bed with their baby, for example the mother may fall asleep while breastfeeding or when trying to settle a fussy baby. Parents need to have information to reduce the risk of sharing a sleep surface with their infant. Refer to PSBC Safe Sleep Environment Guideline for Infants 0 – 12 Months of Age<sup>68</sup>

##### 2. Infant Attachment on the Breast (Latch)

- PATIENCE is essential, particularly with early breastfeedings
- Infant may lick or mouth the nipple before grasping the nipple to suck
- Mother may touch the infant's lips with the nipple to stimulate infant to open his/her mouth
- Mother should aim her nipple high towards the roof of the infant's mouth, the infant's tongue is down and over the lower gum, and the lower jaw is on the lower areola. This will facilitate the nipple into the open mouth and the infant to grasp onto the breast rather than the nipple
- Gentle hand pressure by mother or assistant on the infant's upper back may be initially needed to bring the infant close to the breast when the infant's mouth opens. Avoid placing a hand on the back of the infant's head

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- Optimum attachment: the infant's mouth is open wide, lips flanged, and the mouth covers much the areola (variable depending on areola size); infant's chin is on the breast and the nostrils are clear to breathe. If lips are only parted 45 degrees the infant is likely sucking more on the nipple than the breast tissue and this will contribute to pain during breastfeeding and potentially sore nipples
- During the first week a mother may experience nipple sensitivity or soreness for a few seconds when the infant grasps the breast.<sup>38</sup> If pain continues more than 30 seconds, remove the infant from the breast and start again. Persistent or prolonged pain requires further assessment and intervention to correct the problem. Observe nipples when the infant releases the breast – nipple distortion is usually associated with poor attachment (latch) that may cause nipple damage
- To remove infant from the breast place a clean finger in the corner of the infant's mouth to break the suction
- If a healthy infant does not attach (latch) after several attempts keep mother and infant skin-to-skin and have her watch for feeding arousal behaviours. Sleepy behaviours may be due to birth exhaustion or maternal analgesics or anesthetics
- Sleepy infants can be aroused from a light sleep or drowsy state if they have not fed for 2 ½ or 3 hours. If they are left to re-enter a deep sleep the opportunity to feed the infant is lost and feedings may be insufficient

#### 3. Attachment and Suckling Pattern

- The nipple and breast are drawn into the infant's oral cavity and the infant's cheeks are full, round, and not withdrawn. The tongue is forward extending over the lower gum and lips are widely flanged around the breast when suckling
- Initially the infant has a few rapid sucks and as breastmilk is released, the infant's sucks are slower and deeper with pauses throughout the feeding period. ***Listen for swallowing sounds as this indicates the transfer of colostrum or breastmilk.***<sup>38,69</sup> (Swallowing sounds may be minimal in the first 48 hours)
- If attachment is uncomfortable or shallow, with the infant's mouth slipping towards the nipple tip, detach and reattach the infant
- Infant remains at breast until satiety cues are observed, i.e., suckling ceases, muscles relax, and infant sleeps or removes self from the breast
- If infant detaches within the first 5 minutes, arouse infant and return to the same breast. If longer, arouse infant and breastfeed from the second breast
- Feeding frequency and duration are dependent on how the infant suckles and varies in each mother-infant dyad
- Discourage watching feeding time duration but assist mothers to recognize the signs of milk transfer and their infant's satiety

#### 24 to 72 hours

- Help mothers to recognize later infant feeding cues, i.e., fussing, squeaky noises, restlessness, progressing to soft intermittent crying<sup>60</sup>
- Increase breastfeeding frequency to 8 or more times in 24 hours and offer both breasts per feeding to stimulate breastmilk production; breastfeed infant until satiated (may be 20 to 50 minutes)<sup>38</sup>
- Assess a breastfeeding session until mother and infant are feeding satisfactorily then every 8 hours until hospital discharge using the *Guidelines to Assess Breastfeeding* (see following section)

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

#### Guidelines to Assess Breastfeeding

##### **Recommendation 6 :**

A Breastfeeding assessment of mother and infant should be carried out at key timeframes through discussion and observation (A)

Assessment is complex as it includes mother, infant, and how they “fit” together to enable the breastfeeding process: data is obtained by interview and observation of a breastfeeding session

##### **1. Breastfeeding Process**

- Mother positions infant to facilitate optimal latch and comfort throughout the breastfeeding session
- Infant suckling pattern indicates *audible swallowing and milk transfer*<sup>38,69</sup>
- Breastfeedings include both breasts until breastfeeding well established
- Infant shows satiated behaviours
- Mother and infant interact positively during and after breastfeeding

##### **2. Maternal Assessment**

- Maternal transition from lactogenesis I to lactogenesis II, indicated by breast fullness; generally occurs within 72 hours but may take longer if the mother is a primipara, has never previously breastfed, has been separated from her baby, or had a Caesarean birth<sup>38,65,66</sup>
- Evidence of breast engorgement
- Sore nipples and nipple variances/anomalies that may interfere with breastfeeding and/or milk transfer. Nipple distortion when the infant releases the breast usually indicates a poor latch
- Feelings and concerns: her self-confidence, perception of milk production, the breastfeeding process, her infant, and support provided from family and friends
- Knowledge about infant feeding cues; feeding frequency, length, and variances; and signs of adequate infant hydration

##### **3. Infant Assessment**

- Wakes spontaneously every 2½ to 3 hours, 24 hours a day, for feeding
- Exhibits cues that show readiness to feed (feeding cues) at least 8 or more times per day
- Alert at the beginning of feeding; contented, relaxed, and sleepy at feeding end
- Ability to suckle effectively to transfer milk and stimulate milk production
- Exhibits moist mucous membranes and elastic and responsive skin turgor
- Stool and urine output indicates adequate intake<sup>69,70</sup> Age appropriate recommendations are shown in Table 1
- Monitor infant weight loss and gain



### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

**Table 1: Infant stool and urine output days 1 to 28 post birth**

Infant age	Voids	Stools
Day 1	1 or more, wet, clear, pale yellow	1 or more meconium <sup>38</sup>
Days 2 – 3	2 – 3 wet, clear, pale yellow	1 or more meconium or greenish brown transition stool
Days 3 – 5	3 – 5 wet, clear, pale yellow <sup>26</sup>	3 – 4 transition stool changing to loose, yellow <sup>26</sup>
Days 5 – 7	4 – 6 wet, clear pale yellow <sup>26</sup>	3 – 6 yellow or golden, generally loose <sup>26</sup>
Days 7 – 28	Frequent and clear pale yellow	5 – 10+ yellow <sup>38</sup>

Note: 3 or fewer stools on day 4 after birth in combination with delayed lactogenesis is an indicator for further assessment and continued monitoring<sup>70</sup>

#### Infant weight loss and gain

- Weight loss is variable in the first week. Loss of greater than 7%<sup>26</sup> or 10%<sup>71,72</sup> in the first 4 days postpartum for infants born vaginally or within 5 days if born by Caesarean<sup>66</sup> indicates continued assessment of the breastfeeding process is required and possible correction of breastfeeding techniques until weight gain is satisfactory<sup>72,73</sup>
- Parameters of infant weight loss after birth and when it should start to be regained are not evidence-based,<sup>73-75</sup> however, a general consensus is that birthweight should be regained in approximately 2 weeks<sup>38,39,73</sup>
- Referral to a lactation health care professional and/or physician is indicated for the following situations<sup>65</sup>
  - delayed lactogenesis + continued infant weight loss
  - delayed lactogenesis + inadequate infant output
  - inadequate infant output + continued infant weight loss
- Breastfeeding assessment tools have been developed although reliability and validity for all tools vary and require further testing (see Appendix E for use and characteristics of the following tools: BAPT, MBFES, BSES, LATCH and the IBFAT)

#### Hand expression of colostrum or breastmilk.<sup>38,39,76</sup>

- Initiate hand expression of colostrum if the infant does not latch on the breast within the first 6 hours after birth or after 2 breastfeeding attempts
- Prior to expression, when initially learning, skin-to-skin or feed baby, gently massage breast, or apply a warm, moist compress to enhance milk ejection
- Teach mother to:
  - Express colostrum/breastmilk by placing thumb and forefinger behind the areola and gently pressing back into the chest wall then bring finger and thumb together compressing and releasing the breast tissue in a rhythmical and rolling motion while keeping the finger and thumb in a stationary position
  - Continue to rhythmically compress the breast until droplets of colostrum/breastmilk appear, as volume increases milk may spray
  - When no further colostrum or breastmilk is ejected move fingers to another section of the breast to compress another area, gradually working around the areola in a circular pattern
- Collect colostrum droplets/breastmilk on a spoon or small medicine cup to feed to the infant via a spoon, syringe or medicine cup (see Appendix F). A spoon is most efficient for collection and feeding colostrum.



### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- Mothers may become discouraged if few droplets are produced: assure her that as her milk supply is established and as the technique is practiced, it becomes easier, the amount increases, and it is a convenient and an efficient method of milk expression

#### Pacifiers

- Avoiding the use of pacifiers until breastfeeding is established is frequently recommended<sup>26,38,39</sup> but support for this is inconsistent: e.g., one review shows that breastfeeding duration is not affected in the first 4 months among mothers motivated to breastfeed their infants<sup>77</sup> whereas other studies reveal:
  - Use in the first 4 weeks is associated with less exclusive breastfeeding at 1 month and decreased breastfeeding duration among infants followed for 1 year<sup>78</sup>
  - Use could indicate a breastfeeding problem that may need intervention<sup>79</sup> e.g., postponement of and fewer feedings per 24 hours; dental and orthodontic problems; accidents and injuries (choking); candidiasis; speech development; infant attachment;<sup>38</sup> and acute otitis media<sup>80</sup>
- Used therapeutically at times to encourage suckling among preterm infants that are gavage fed; to repattern specific sucking disorders; and to soothe infants of mothers who suckle for short periods due to an overabundant maternal milk supply<sup>38,81</sup>

#### Preparation for Hospital Discharge

- Assess maternal and newborn physical, psychological, and social wellbeing<sup>82</sup>
- Discharge in less than 48 hours from hospital is considered adequate provided the infant demonstrates effective breastfeeding abilities i.e., at least two successful feedings documented and there is follow-up<sup>83,84</sup>
- The SOGC recommendations state that community programs are well used and appreciated and additional programs may decrease neonatal mortality, morbidity and readmissions. The BC Reproductive Care Program Postpartum Consensus Symposium on the Provision of Postpartum Services in BC (2002) recommended that postpartum assessment services be available 7 days a week
- Complete the BC Postpartum and Newborn Clinical Paths sections related to Summary, Education and anticipatory Guidance (PSBC 1592 & PSBC 1593) and the BC Community Liaison Record (PSBC 1591)

#### 72 hours to 7 Days and Beyond

- Contact with families of newborn infants is made by a health care professional within 1 – 2 days of hospital discharge to carry out an assessment using the PSBC Postpartum and Newborn Nursing Care Pathways<sup>85</sup>
- Assess breastfeeding using *Guidelines to Assess Breastfeeding* (shown above) during the first contact and each follow-up contact if there are breastfeeding concerns
- Assess knowledge and review or inform as needed: breastfeeding patterns once milk is established; cluster feeding; infant fussiness; need to breastfeed throughout the night; infant hydration; community resources; and breastfeeding challenges
- Evaluate maternal postpartum status and the infant status for hydration, neonatal jaundice, and other abnormalities that may require investigation or referral<sup>84</sup>
- Provide anticipatory guidance and resources such as *Baby's Best Chance*,<sup>60</sup> on possible breastfeeding concerns (e.g. teething, biting, increased feeding frequency during growth spurts)
- Provide information about recommendation of exclusive breastfeeding for first six months with continuation for two years or more combined with nutritious and safe complementary foods

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- Newborns who are breastfed or receiving breastmilk should receive a daily vitamin D supplement of 10 µg (400 IU) from birth until at least 12 months of age. In individual practice, the decision to discontinue the supplement beyond 12 months of age can be informed by a dietary assessment of other contributors of vitamin D, such as cow milk.
- Encourage attendance at mother-to-mother support groups

#### D. Breastfeeding Challenges in the Postpartum Period

##### **Recommendation 7:**

Provide support for infants identified with specific challenges (A)

##### **Infant Challenges**

- **Near-Term Infant**, i.e., 34 – 38 weeks gestation <sup>38,87</sup>
  - It cannot be assumed that the near-term infant abilities are similar to full term infants
  - Additional time is often needed before these infants breastfeed effectively and breastfeeding is established
  - Assess to determine developmental immaturity related to:
    - Neurological organization
    - Suck-swallow and breathing pattern abilities
    - Muscle tone
    - State control which may be disorganized
    - Sleep pattern: infant may not wake to feed frequently enough
    - Feeding pattern e.g., may suckle for a short period with frequent pauses resulting in limited milk transfer and leading to increase risks of dehydration, hypoglycemia, hyperbilirubinemia, and/or insufficient weight gain
  - As term gestational age is reached, feeding times become similar to those of term infants
  - Care
    - Encourage skin-to-skin contact
    - Breastfeed in the football hold or modified cradle
    - Ensure infant is warm to assist temperature stability (skin-to-skin contact with light blanket covering mother and infant)
    - Use a cue-based feeding approach but allow for differences among infants in time periods between feeds. Observe the infant's sleep pattern for feeding rather than adhering to a strict feeding schedule (e.g. q 3 h feedings)
    - Wake the baby from a light sleep or drowsy state for feeding, for example every 2 – 3 hours. If allowed to return to a deep sleep the feeding opportunity could be lost
    - Where indicated, initiate a hand expression regime for the mother to establish milk production and prevent engorgement. A combination of hand expression and pumping results in increased milk.<sup>88</sup> (see Appendix G) Feed expressed milk to the infant using an alternative feeding method (such as spoon, cup) and avoiding artificial nipples and bottles (see Appendix F)

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- **Hypoglycemia**

- Screen only neonates considered at risk.<sup>89,90</sup> Screening healthy full-term infants is unnecessary<sup>92</sup> and can have a negative impact on successful breastfeeding and the mother-infant relationship<sup>23,90</sup>
- For screening guidelines and treatment refer to those of the Canadian Paediatric Society (2004,<sup>89</sup> reviewed<sup>91</sup> and reaffirmed in 2012<sup>89</sup>). <http://www.cps.ca/en/documents/position/newborns-low-blood-glucose>
- Preventative care for all newborns including those at risk for hypoglycemia are:
  - Early and ongoing skin-to-skin contact between mother and infant sustains normal infant body temperature and assists normal blood glucose maintenance<sup>90</sup>
  - Early initiation of exclusive breastfeeding (i.e., within first hour following birth) followed by frequent feedings, 8 or more times in 24 hours<sup>90</sup>
- Interventions for documented hypoglycemic infants vary depending on individual circumstances. These include: increased breastfeeding frequency, enteral supplementation with expressed breastmilk (the mother's or pasteurized donor milk), or if necessary, breastmilk substitute<sup>89</sup>
- Infants with symptomatic hypoglycemia, and those with asymptomatic hypoglycemia who fail to respond to enteral supplementation, generally receive dextrose intravenous therapy<sup>89</sup>
- For infants' diagnosed: support mother and reassure her that nothing is wrong with her breastmilk; initiate and maintain early and frequent breastfeedings; if necessary start interventions to assist establishing mother's milk supply<sup>90</sup>

- **Neonatal Jaundice**

- Refer to PSBC Guidelines for Jaundice in the healthy term newborn<sup>92</sup>
- **Physiologic jaundice** is common among all newborns and visible for approximately 50% of healthy term infants.<sup>92</sup> It develops after 24 hours following birth; bilirubin levels peak at approximately 3 days of age for non-Asian infants and may not peak for 5 days for infants of Asian origin.<sup>38</sup> If noted in infants less than 24 hours old it is pathological and clinical evaluation should be immediate<sup>38,39</sup>
- **Early breastfeeding jaundice**<sup>38,92</sup> is a prolongation of normal physiologic jaundice<sup>9,38</sup> that is associated with infrequent and ineffective breastfeeding resulting in limited intake and a delay of meconium passage and increased reabsorption of bilirubin from the bowel<sup>13,92,93</sup> More recently it is known as "starvation jaundice"<sup>38,94</sup> and occurs when breastfeeding is not effectively established
  - Assess the infant using *PSBC Guideline: Jaundice in the healthy term newborn*<sup>92</sup>
  - Prevention and treatment
    - Early and frequent breastfeedings (8 or more times in 24 hours): ingestion of colostrum will increase stooling
    - Assess infant's position, latch, and milk transfer
    - Encourage mother-infant skin-to-skin contact to promote breastfeeding frequency and stimulate a sleepy or lethargic infant
    - Supplementation is not generally indicated but if necessary supplement with mother's expressed milk or pasteurized donor milk, or breastmilk substitute. Supplementation with glucose water is not recommended<sup>93,95</sup>
- **Late breastmilk jaundice: breastmilk jaundice syndrome**
  - Affects approximately 2 to 4% of breastfed infants.<sup>13</sup> Onset occurs after day 5 post delivery<sup>38</sup> and bilirubin levels may peak at 7 to 15 days;<sup>92</sup> the condition may last 3<sup>13</sup> to 12 weeks

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- Care: for healthy newborns
  - Continue breastfeeding without interruption
  - Investigate, as indicated, for other conditions, depending on bilirubin level and age of infant
  - Reassure parents
- For additional information on hyperbilirubinemia refer to *PSBC Guideline: Jaundice in the healthy term newborn*<sup>92</sup> and the *CPS Guideline: Guidelines for detection, management and prevention of hyperbilirubinemia in term and late preterm newborn infants (35 or more weeks' gestation)*<sup>93</sup>
- **Ankyloglossia (Tongue Tie)**
  - Observed when the infant is unable to adequately extend or elevate tongue due to a short lingual frenulum attached to tip of the tongue that restricts tongue movement<sup>96</sup> as it may contribute to breastfeeding problems such as ineffective milk transfer, low intake of breastmilk resulting in insufficient weight gain, low maternal milk supply, sore or damaged nipples, blocked ducts, and breast infections<sup>38,39,97</sup>
  - Partial ankyloglossia occurs in approximately 3.2% to 4.8% of term infants and in 12.8% of infants with breastfeeding problems<sup>97,98</sup> Complete ankyloglossia (fusion of tongue to the mouth floor) is exceptionally rare<sup>97</sup>
  - Treatment is not necessary if breastfeeding proceeds successfully<sup>96,97</sup>
  - If feeding problems persist refer the infant to a physician for further assessment and possible frenotomy<sup>96</sup> as outlined in the American Academy of Breastfeeding Guideline Protocol #11<sup>97</sup> and in Lawrence and Lawrence,<sup>39</sup> to improve breastfeeding effectiveness<sup>99</sup>

#### **Recommendation 8:**

Provide support for mothers identified with specific challenges. (A)

#### **Maternal Challenges**

- **Breast Fullness**<sup>100,101</sup> a transitory physiologic response that can appear 3 to 6 days post-birth as milk production increases. Breasts are heavy, hot, and firm, and milk flows well, the infant can suckle, and generally it is not painful and resolves in 24 hours<sup>38</sup>
- **Breast Engorgement** can occur 3 to 5 days post-birth; the breast is enlarged, painful, shiny, and edematous with diffuse red areas. The nipple may be effaced, milk often does not flow easily, and the infant can have difficulties latching<sup>38</sup>
  - Contributing factors include delayed breastfeeding initiation, infrequent and/or time restricted feedings, supplementation, inefficient infant latch, breast surgery, or any situation where milk stasis occurs. Milk supply can be compromised by unrelieved engorgement
  - Care<sup>38,39,102</sup>
    - Warm shower or apply warm compress or breast soaks before breastfeeding to facilitate let down
    - Massage breast gently and manually express breastmilk or colostrum to soften the areola before breastfeeding to facilitate infant latch
    - Breastfeed frequently, using the engorged breast first
    - Use anti-inflammatory medications, e.g., ibuprofen (400 mg. every 4 – 6 hours) which are compatible with breastfeeding<sup>103</sup>

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- Additional treatments that some women report as helpful but determined as ineffective in a review of eight RCTs<sup>102</sup> are:
  - Application of cold treatments e.g., gel packs, cold packs, or cold cabbage leaves; used after breastfeeding
  - Use of oxytocin and ultrasound
- **Areolar Engorgement**<sup>13</sup> can occur without breast (peripheral) engorgement. Latch is difficult and painful for the mother.
  - Care
    - Manual expression or compression of the areola before breastfeeding<sup>38</sup>
    - Warm compresses
- **Plugged or Blocked Duct**
  - Characterized by tenderness, heat, local engorgement, and/or a palpable lump if the blockage is in a duct close to the skin. Associated with an abundance of milk, incomplete removal of milk, missed feedings, and pressure or constriction e.g., from clothing, or baby carrier<sup>38</sup>
  - Care<sup>38,39</sup>
    - Shower or warm compress to breast before feeding to facilitate milk flow
    - Breast massage prior to and during feeding starting at the affected area moving toward the nipple
    - Breastfeed frequently, start with the affected side and ensure breast is drained
    - Position the infant on the breast with chin or nose pointing to the affected area; change the infant's position on the breast frequently
    - Avoid missing feedings and wearing tight fitting bras or clothing
- **Milk Blister or Blocked Nipple Pore**
  - A painful white or yellow spot on areola is a blocked nipple-pore preventing drainage from a duct and is painful when breastfeeding. May heal on own in several days or weeks
  - Care
    - Apply a warm compress to soften then gently rub area with a damp cloth and/or use hand expression to try to dislodge the obstruction<sup>38</sup>
    - A treatment could be done by a health professional with skills in treating breasts, by breaking the epithelial skin with a sterile needle to remove the plug<sup>38</sup>
    - Apply of an ice pack or use an analgesic before breastfeeding to decrease pain<sup>38</sup>
- **Overabundance of Breastmilk**
  - May not be problematic until infant is approximately 3 weeks old
  - Breastmilk may eject quickly and forcibly during breastfeeding causing the infant to choke, gag, and remove his/herself from the breast. When this occurs, ensure that the infant's behaviour is due to the rapid flow or ejection of breastmilk, and not an inability of the infant to satisfactorily suckle or coordinate the suckling/ swallowing/ breathing mechanism<sup>38</sup>
  - Mother is more prone to milk stasis and mastitis
  - Typically babies gain well

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- Care<sup>38</sup>
  - Offer only one breast per feeding while adjusting to supply and demand
  - If letdown is forceful, hand express breastmilk until first letdown occurs or milk flow slows
  - If second breast full and uncomfortable hand express only for comfort otherwise do not express milk between feedings as this will increase supply
  - Vary nursing positions, e.g. infant in more of an upright position and head higher than the breast or mother leans backwards and infant faces and lies on top of the mother who may need to support the infant's forehead with her hand
  - If infant chokes remove from breast and calm infant before reinitiating breastfeeding
  - Although it may take a few weeks milk supply should adjust to meet the infant's needs
  - Health care professional follow-up is essential for these mother-infant dyads to monitor milk production and support the mother
- **Mastitis**
  - Inflammation of the breast, in which milk stasis is the primary cause that may or may not be accompanied by or progress to infection.<sup>101,104</sup> Occurs at anytime during lactation but is most common in the first 2 – 6 weeks postpartum<sup>104</sup>
  - Usually only one breast is affected. Breast is hot, swollen, and tender; skin may be reddened; and mothers may complain of malaise, fever of 38.5°C or higher, chills, headache, and flu like body aching.<sup>38,39,104</sup>
  - Contributing factors are numerous and can be due to: breast engorgement; delayed breastfeeding initiation; infrequent and/or time restricted breastfeedings; supplementation; breast surgery; any situation where milk stasis occurs; a break in the integrity of the nipple skin (cracked or damaged nipple); inadequate milk removal from the breast; poor latch/attachment; oversupply of milk; pressure on the breast (tight bra or car seatbelt); blocked nipple pore; stress; fatigue; poor maternal nutrition; use of a pacifier; rapid weaning; and ankyloglossia in the infant<sup>100,104</sup>
  - Care
    - Reassure mother that continuing breastfeeding is advised and that milk from the affected breast is safe for her infant<sup>39,101,102,104,105</sup>
    - *First 12 to 24 hours*
      - Shower or warm compresses to breast *before* feeding may facilitate milk flow
      - Breastfeed frequently ensuring effectual milk removal. Start on the affected breast. If discomfort inhibits let-down then start on the unaffected breast and switch to the affected breast when let-down occurs<sup>104</sup>
      - Position the infant on the breast with chin or nose pointing towards the affected area. During breastfeeding massage the breast starting at the blocked area, moving toward the nipple<sup>104</sup>
      - *After* breastfeeding, any additional milk may be expressed by hand or pump and applying cold compresses may reduce pain and edema<sup>39,104</sup>
      - Advise bed rest, adequate fluids and nutrition, and support at home
      - Use an analgesic, e.g., ibuprofen (400 mg. every 4 – 6 hours) to decrease inflammation and pain<sup>101,103,104</sup>



### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- *Subsequent treatment after 24 hours*
  - Use antibiotics judiciously and only recommended if symptoms have not improved after 12 – 24 hours of rest and applying the above recommendations;<sup>101</sup> maternal fever has not subsided and illness remains acute; or if the nipple is cracked/fissured indicating possible infectious mastitis.<sup>107</sup> Most common pathogen is penicillin-resistant *Staphylococcus aureus*; less common are *streptococcus* or *Escherichia coli*<sup>104</sup>
  - Suggested antibiotics are penicillinase resistant penicillins, e.g., dicloxacillin or flucloxacillin 500 mg qid or cephalexin when penicillin allergy is suspected.<sup>104</sup> Although not clinically studied, it is recommended that antibiotic therapy should continue for 10 to 14 days<sup>104,105</sup>
- **Breast Abscess**
  - Occurs in approximately 3% of women with mastitis<sup>38,104</sup>
  - Use of ultrasound is advised for diagnosis and to guide aspiration or surgical drainage if necessary<sup>101,104</sup>
  - Breastfeeding can continue from the unaffected breast and can resume from the affected breast following drainage of the abscess and the initiation of antibiotic treatment if the mother is comfortable and the infant's mouth has no contact with drainage or infected tissue<sup>101,104</sup>
  - Otherwise, hand express milk from affected breast during this period to maintain supply
- **Inverted or Flat Nipples**
  - Breastfeeding over time can elongate the nipple and lessen an inversion
  - Types<sup>38</sup>
    - Retractable: the nipple can evert with suckling and/or when the areola is gently pressed between thumb and forefinger. Is the most common
    - Invaginated or true inversion: nipple retracts when areola is compressed; rare
  - Care<sup>38,39</sup>
    - Initiate breastfeeding as soon as possible; the mother's nipple/breast should be the first object introduced into the infant's mouth
    - A cold compress to a flat nipple *before* breastfeeding may help evert the nipple
    - Mother may stimulate and shape the nipple *before* breastfeeding by using hand expression technique or a breast pump
    - Position the infant to achieve a deep latch
    - Use an ultrathin silicone nipple shield for breastfeeding (see Appendix G)
    - If inability to latch persists express breastmilk and feed to infant until latch is possible
    - Avoid use of artificial nipples and pacifiers
- **Nipple Pain**
  - **Initial or transient nipple soreness**
    - Discomfort occurs first postpartum week, peaks days 3 to 6 and generally subsides after day 7. Most common cause is breastfeeding position and infant latch<sup>38</sup>
    - Care
      - Assess and facilitate breastfeeding position and infant latch
      - Apply expressed colostrum/breastmilk or warm water to nipples after feeding then air dry<sup>39</sup>
      - Limiting length of breastfeeding time does not alleviate or prevent sore nipples and is detrimental to establishing breastfeeding<sup>38,39</sup>



### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- **Prolonged or persistent pain:** causes vary and specific diagnosis is difficult
  - **Physical/mechanical causes**
    - Characterized by nipple irritation and redness, flattened nipple after feeding, abrasion, cracks, fissures and/or bruised or bleeding nipples.
    - Possible causes and irritants
      - Improper or shallow infant latch; friction from a retracted nipple moving in an infant's mouth; infant's jaw tightly clamping the breast
      - Infant with high or cleft palate; ankyloglossia; or disorganized suck due to prematurity or neurologically compromised
      - Excessive pressure during pumping or improperly fitting pump flange
      - Nipple sensitivity to creams or gels
      - Irritation from clothing or use of products such as soaps and detergents
  - Care: assess and treat probable cause
    - Facilitate effective breastfeeding position and infant latch
    - Treat cracked, abraded, fissured or bleeding nipples: apply expressed breastmilk and/or rinse with clear water after every feeding and air dry;<sup>38</sup> start feeding on least affected nipple; discontinue feeding from the affected breast *only* when breastfeeding is intolerable and hand express breastmilk during this period to maintain supply
    - Rectify improper use of breast pump or equipment
    - Discontinue use of cream, gel or other possible irritants
    - Refer infants with ankyloglossia or dysfunctional suck to lactation clinic or health professional with breastfeeding expertise
- **Maternal conditions**
  - **Vasospasm:** nipple blanched but usually not misshapen after breastfeeding.
    - Care:
      - Ensure correct position and latch
      - Avoid cold
      - Apply dry heat to nipple immediately after breastfeeding
      - Avoid vasoconstricting drugs, e.g., caffeine and nicotine
      - Reassure mother that this is a time limiting condition and will resolve without treatment
  - **Raynaud's phenomenon:** a vascular disorder causing vasospasm which is an ongoing maternal condition unrelated to breastfeeding. Presents as a white nipple after feeding that is biphasic or triphasic in colour that change white to blue or white to blue to red. Nipple pain can be excruciating and both nipples are usually affected<sup>106</sup>
    - Care: Similar to vasospasm (see above).
      - Health care provider may prescribe medication: Nifedipine 5 – 10 mg. 3 times a day or 30 mg. by slow release tablet<sup>38,103,106</sup> and an analgesic for pain relief

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- *Eczema, psoriasis, or herpes simplex*: present as painful nipples and/or areola with acute vesicular eruption.
  - Care:
    - Refer mother to health care provider for diagnoses and medical treatment.
    - If herpes simplex on or near the areola, temporarily discontinue breastfeeding on the affected side until the lesions are crusted or healed<sup>2,23,38</sup>
    - Encourage mother to express her milk until she can resume breastfeeding
- **Infections**
  - *Candida* (fungus infection):
    - Nipples: exceptionally sore; deep pink or red colour, itchy; and may burn
    - Breasts may have shooting pains or burning sensation during or after feeding that may radiate to the back or arm
    - Associated with vaginal yeast infection and or recent use of antibiotics
    - Infant shows signs of *Candida* in mouth, or a rash in perineal area that appears red as if scalded, or small red spots or pustules
    - Diagnosis is based on symptoms; cultures frequently inaccurate<sup>119</sup>
    - Care: *Rule out other causes of sore nipples*
      - Frequent hand washing and sanitation of all objects in contact with nipples or infant's mouth; keep nipples dry; avoid pacifiers or artificial nipples
      - Antifungal medications: generally treated but the evidence of effectiveness of the medication is lacking<sup>38</sup>
      - Treat mother and infant simultaneously
        - Mother: apply ointment to nipples (e.g. nystatin or clotrimazole) *before* and *after* breastfeeding
        - Infant: apply nystatin suspension to oral cavity qid,<sup>103</sup> using dropper or swab and nystatin cream to diaper area as indicated
        - Reassess if not improved in 5 days and/or if reoccurs,
        - Treat partner as well
    - \* If condition persists consider using Gentian Violet or Fluconazole (Diflucan).
      - Gentian violet should be no stronger than 0.25% to 0.5% diluted with distilled water and used only 1 – 2 times daily for not more than 3 – 7 days<sup>38,103,104</sup>
      - Fluconazole use, for ductal candidiasis medication should continue for at least 2 – 3 weeks to be effective<sup>106</sup>

Additional maternal advice may include: 1 acidophilus tablet daily (40 million – 1 billion viable units) during and 2 weeks after symptoms disappear and dietary restriction of cheese, bread, wheat products, sugar and honey<sup>38</sup>

### 3.0 Breastfeeding Guidelines for Health Care Providers for Healthy Infants: Birth to Six Months and Beyond, *cont.*

- *Staphylococcus aureus*: Occurs most frequently in first month after giving birth
  - Nipples severely sore, inflamed, cracked, or fissured; may exude yellow drainage. Correcting position or latch does not resolve the condition.
  - Care:
    - Refer to physician as antibiotics may be needed to promote healing and prevent mastitis of the breast

#### ■ Use of Nipple Creams, Gels and Topical Agents

- “No one topical agent shows superior results in the relief of nipple discomfort”<sup>107</sup>
- General consensus: if a mother is using a product that she believes is helpful and it is not harmful to her or her infant’s health, do not oppose use<sup>38</sup>

## 4.0 Weaning from the Breast<sup>117</sup>

Recognize maternal feelings of ambivalence, loss, and sadness whenever weaning occurs; counsel the mother

- **Natural or Infant-led Weaning**

- Occurs when safe complementary foods are introduced (6 months of age) and breastfeeding continues until the child is up to 2 years and beyond
- Encourage slow, progressive, natural weaning among mothers

- **Planned, Mother-led, or Deliberate Weaning**

- Mother decides and reasons vary: e.g., perception of low milk production; illness; return to employment; or new pregnancy
- Examine reasons for weaning; provide the mother with information as indicated; and support her “informed decision”
- Advise:
  - Wean gradually, discontinue one breastfeeding for several days/week before discontinuing another breastfeeding; evening or early morning feedings often continue the longest
  - Mothers returning to work may continue to breastfeed when she is with her infant and express breastmilk for use when she is absent
  - Substitute age appropriate family food and liquids from a cup for the discontinued breastfeeding session
  - Additional cuddling and/or play interactions will comfort infants who are reacting to the loss of breastfeeding
  - During infant illness, breastfeeding frequency may increase
  - Consult a public health nurse, nutritionist, or physician regarding introduction of appropriate complementary foods depending on the infant’s age

- **Infant refusal to breastfeed: “Nursing Strike”**

- Reassure mother this is temporary, not rejection or initiation of weaning
- Explore reasons, e.g., return of menses;<sup>39</sup> changes in maternal diet, laundry soap, infant teething or illness
- Minimize distractions during breastfeeding; e.g., use alternative nursing locations
- Offer the breast before baby is fully awake
- Express milk to maintain supply until baby is again fully breastfeeding

- **Accidental Weaning**

- Mother’s milk supply has decreased to the point where baby is no longer interested in breastfeeding
- Most commonly occurs when baby receiving other foods (formula and/or solid foods) in large amounts
- Review baby’s intake of other foods and pattern of breastfeeding. Discuss options with mother – weaning and/or increasing breast milk production

- **Abrupt or emergency weaning**

- Unanticipated weaning that is abrupt; e.g. maternal illness, unexpected mother-infant separation
- Short term use of contraindicated drugs is not a reason to wean. Express milk, for the time frame specific for the drug, to maintain supply, and prevent engorgement. Resume breastfeeding as soon as possible
- Support mother and evaluate infant’s feeding pattern and growth until resolved

## 5.0 Glossary

**Breastmilk** includes breastfeeding, expressed breastmilk or pasteurized donor milk and undiluted drops or syrups consisting of vitamins, mineral supplements or medicines.

**Exclusive breastmilk** no food or liquid other than breastmilk, not even water, is given to the infant from birth by the mother, health care provider, or family member/supporter.

**Hoffman's Exercise** exercise used for inverted nipples by stretching of the nipples by manual manipulation.

**Infant feeding cues** include the baby bringing her hands to her mouth, sucking, rooting (turning her head toward the person holding her, often with her mouth open), irritability and crying (a late cue).

**Lactogenesis** Changes in the breast in the transition from pregnancy to lactation.

**Lactogenesis I** transition from pregnancy to lactation capacity of the mammary gland to secrete milk from mid-pregnancy to late pregnancy.

**Lactogenesis II** the onset of copious milk secretion after birth (days 2 or 3 to 8 postpartum).

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## Best Practices: The Baby-Friendly Initiative (BFI)

Breastfeeding initiation and continued success is dependent on practices that protect, promote, and support breastfeeding. In 1991 the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) launched The Baby-Friendly Hospital Initiative (BFHI),<sup>1</sup> a global strategy to provide optimum care to pregnant women and their infants and children that is in agreement with the *International Code of Marketing of Breastmilk Substitutes*,<sup>2</sup> subsequent World Health Assembly Resolutions,<sup>3</sup> and that supports the *Innocenti Declaration*<sup>4,5</sup> and the *Global Strategy for Infant and Young Child Feeding*.<sup>6</sup> The BFHI strategy includes *Ten Steps to Successful Breastfeeding*<sup>7</sup> that are **10 best practices**, for providing optimum care in maternity hospitals.

Effectiveness of implementing the BFI *Ten Steps* in maternity hospitals was identified as successful for increasing rates of breastfeeding initiation, duration, and exclusive breastfeeding in a 1998 review of experimental (randomized control) and quasi-experimental studies.<sup>8</sup> Although studies have not yet been conducted in Canada, evidence shows that in the United States, hospitals that have implemented the *Ten Steps* have substantially higher breastfeeding initiation and exclusive breastfeeding rate.<sup>9,10,11</sup> Additionally, breastfeeding duration was significantly improved for women whose hospital experience included a combination of five of the *Ten Steps*.<sup>12</sup>

The BFI\* was launched in Canada in 1998. For continued support in assisting women to sustain breastfeeding and to increase breastfeeding longevity rates, in 2002, the *Ten Steps* were extended to community health services as *Seven Points*<sup>13</sup>. In 2011 the *Ten Steps* and *Seven Points* were combined and renamed *BFI Integrated 10 Steps Practice Outcome Indicators for Hospitals and Community Health Services*.<sup>14</sup> Implementation of these evidence-based **best practices** provides recognized, high standards of professional care for women, their infants, and families. Health services that meet these standards of care receive Baby-Friendly designation. After September 2012, Accreditation Canada Obstetric Services Standards accreditations will include the integration of breastfeeding and BFI- related standards and guidelines.<sup>15</sup>

In Canada, a number of hospitals/birthing centres and community health services have received BFI designation (for updates see BCC website).<sup>16</sup> In November 2007 GR Baker Memorial Hospital in Quesnel was the first hospital in BC to receive the Baby-Friendly designation followed by BC Women's Hospital and Health Centre in July 2008. In Canada, many additional hospitals and community health services are working towards designation and in BC, interest and practice changes have increased considerably during the past 5 years.<sup>17</sup> Achieving these breastfeeding best practice standards, requires education for all staff, commitment, determination, time and support from all sectors including local, health authority and provincial government levels.<sup>17</sup>

\* In Canada, BFHI is most frequently identified as BFI to include the extension of the BFI in community health services.

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## APPENDIX A

### The International Code of Marketing of Breastmilk Substitutes<sup>1</sup>

#### Summary of the Main Points

- No advertising of breastmilk substitutes and other products to the public
- No donations of breastmilk substitutes and supplies to maternity hospitals
- No free samples to mothers
- No promotion in the health services
- No company personnel to advise mothers
- No gifts or personal samples to health workers
- No use of space, equipment or educational materials sponsored or produced by companies when teaching mothers about infant feeding
- No pictures of infants or other pictures idealizing artificial feeding on the labels of the products
- Information to health workers should be scientific and factual
- Information on artificial feeding, including labels, should explain the benefits of exclusive breastfeeding and the costs and dangers associated with artificial feeding
- Unsuitable products, such as sweetened condensed milk, should not be promoted for babies

#### The role of administrators and staff in upholding the Code

1. Free or low-cost supplies of breastmilk substitutes should not be accepted in health care facilities
2. Breastmilk substitutes should be purchased by the health care facility/health authority in the same way as other foods and medicines, for at least wholesale price. Promotional material for infant foods or drinks other than breastmilk should not be permitted in the facility
3. Pregnant women should not receive materials that promote artificial feeding
4. Feeding with breastmilk substitutes should be demonstrated by health workers only, and only to pregnant women, mothers, or family members who need to use them
5. Breastmilk substitutes in the health facility should be kept out of the sight of pregnant women and mothers
6. The health facility should not allow sample gift packs with breastmilk substitutes or related supplies that interfere with breastfeeding to be distributed to pregnant women or mothers
7. Financial or material inducements to promote products within the scope of the Code should not be accepted by health workers or their families
8. Manufacturers and distributors of products within the scope of the Code should disclose to the institution any contributions made to health workers such as fellowships, study tours, research grants, conferences, or the like. Similar disclosures should be made by the recipient

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### Summary of the Integrated 10 Steps Practice Outcome Indicators for Hospitals and Community Health Services in Canada<sup>1</sup>

1. Have a written breastfeeding policy that is routinely communicated to all health care providers and volunteers.<sup>1</sup>  
*WHO: Have a written breastfeeding policy that is routinely communicated to all health care staff.<sup>2</sup>*
2. Ensure health care providers have the knowledge and skills necessary to implement the breastfeeding policy.<sup>1</sup>  
*WHO: Train all health care staff in skills necessary to implement this policy.<sup>2</sup>*
3. Inform pregnant women and their families about the importance and process of breastfeeding.<sup>1</sup>  
*WHO: Inform all pregnant women about the benefits and management of breastfeeding.<sup>2</sup>*
4. Place babies in skin-to-skin contact with their mothers immediately following birth for at least an hour or until completion of the first feeding or as long as the mother wishes: encourage mothers to recognize when their babies are ready to feed, offering help as needed.<sup>1</sup>  
*WHO: Help mothers initiate breastfeeding within a half-hour of birth.<sup>2</sup>*
5. Assist mothers to breastfeed and maintain lactation should they face challenges including separation from their infants.<sup>1</sup>  
*WHO: Show mothers how to breastfeed, and maintain lactation, even if they should be separated from their infants.<sup>2</sup>*
6. Infants are not offered food or drink other than human milk for the first 6 months, unless medically indicated.<sup>1</sup>  
*WHO: Give newborn infants no food or drink other than breastmilk, unless medically indicated.<sup>2</sup>*
7. Facilitate 24 hour rooming-in for all mothers: mothers and infants remain together.<sup>1</sup>  
*WHO: Practice rooming in – that is, allow mothers and infants to remain together 24 hours a day.<sup>2</sup>*
8. Encourage baby-led or cue-based breastfeeding. Encourage sustained breastfeeding beyond six months with appropriate introduction of complementary foods.<sup>1</sup>  
*WHO: Encourage breastfeeding on demand.<sup>2</sup>*
9. Support mothers to feed and care for their breastfeeding babies without the use of artificial teats or pacifiers (dummies or soothers).<sup>1</sup>  
*WHO: Give no artificial nipples or pacifiers (also called dummies or soothers) to breastfeeding infants.<sup>2</sup>*
10. Provide a seamless transition between the services provided by the hospital, community health services and peer support programs.<sup>1</sup>  
*WHO: Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.<sup>2</sup>*

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## The Breastfeeding Committee for Canada Breastfeeding Definitions and Data Collection

The National Authority for the  
Baby-Friendly Initiative

L'Organisme national responsable de  
l'Initiative des amis des bébés



### Breastfeeding Definitions and Data Collection Periods

#### Introduction:

Exclusive breastfeeding for the first 6 months of life is the optimal way to feed infants. Because of the demonstrated benefits of exclusive breastfeeding, in 2001 the WHO recommended that infants should be exclusively breastfed for 6 months. At 6 months breastfeeding should be continued, with the introduction of nutritious and safe complementary foods, for up to two years and beyond.<sup>1</sup>

These breastfeeding definitions and guide for data collection were developed in 2006 and revised in 2012 by the Provincial/Territorial Baby-Friendly Initiative Subcommittee of the Breastfeeding Committee for Canada (BCC) to contribute to a database for describing the prevalence and duration of breastfeeding in Canada. Monitoring the intake of human milk is an important health indicator – useful in planning and implementing services/programs and evaluating the prevalence and duration of breastfeeding and thus the health of our infant population. Most health regions/health authorities in Canada are collecting breastfeeding information. This document is intended to facilitate data collection that is consistent and can be used to compare breastfeeding practices between regions and provinces/territories. Developed from the population health perspective the definitions and process for data collection are intended to collect relevant, accurate and consistent data.

Following a review of the literature and input from epidemiologists the WHO definitions form the basis of the breastfeeding definitions in this document.<sup>2,3,4,5,6,7,8,9,10</sup> The BCC definitions describe the human milk intake of infants but do not specify how the infant has received the human milk; nor do the definitions specify the types of other liquids or foods the infant may have received.

Algorithms to assist in collecting data to identify breastfeeding exclusivity and duration are provided for infants from birth up to 5 completed months of age and for infants 6 months or more of age.

<sup>1</sup> Kramer, MS, Kakuma R. *The optimal duration of exclusive breastfeeding: a systematic review*. Geneva: Department of Nutrition for Health and Development, Department of Child and Adolescent Health and Development, WHO 2002.

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<sup>5</sup> Labbok M. what is the definition of breastfeeding? *Breastfeeding ABS*: 19(3): 19-21, 2000.

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<sup>9</sup> Binns, CW, Fraser, ML, et al. *Defining exclusive breastfeeding in Australia*. *Journal of Paediatrics and Child Health* 2009;45:174-180.

<sup>10</sup> *Indicators for assessing infant and young child feeding practices: Part 1 Definitions*. WHO 2008.  
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## Breastfeeding Definitions

**Exclusive breastfeeding:** The infant receives human milk (including expressed milk, donor milk) and allows the infant to receive oral rehydration solution (ORS), syrups (vitamins, minerals, medicines) but does not allow the infant to receive anything else.<sup>10</sup>

**Non-exclusive breastfeeding:** The infant/child has received human milk (includes expressed milk, donor milk) and water, water-based drinks, fruit juice, ritual fluids or any other liquid including non-human milk or solids.

**No breastfeeding:** The infant / child receives no human milk.\*

\* Note: these definitions are simplified for the purposes of the BFI assessment tools. They do not define the quality of the non-exclusive breastfeeding category, e.g. partial, predominant, total, etc. and are not intended for research purposes.

## Data Collection Time Periods

For *Baby-Friendly* designation, hospitals and birth centres are required to record data for initiation rate, rate of exclusive breastfeeding and rate of supplementation for documented medical reasons and for non-medical reasons from birth to discharge. Refer to the BCC Integrated Ten Steps Practice Outcome Indicators document – sections 6.1, 6.3 and 6.4 for determination and calculation of breastfeeding rates.

For *Baby-Friendly* designation at the community level, community health services are required to record data on entry to their service and a minimum of two additional time frames (e.g. 2 or 4 months ) and up to 6 months (5 months to 5 months 29 days) and to show an increase in breastfeeding rates over time.

Recommended time frames for data collection up to 6 months of age for infants are shown below. While precision in time is considered important, it is realized that the community data will not be collected precisely at two months, four months, etc. for every mother and baby. To facilitate standardizing the time frames a mutually exclusive description of each time period is included.

### Hospitals and Birthing Centres:

- ☐ Initiation rate of breastfeeding
- ☐ Exclusive breastfeeding rate from birth to discharge

### Community Health Services:

- ☐ Exclusive and any breastfeeding rates on entry to community service
- ☐ Two additional time frames up to 6 months of age of the infant, such as  
2 months – 2 months to 2 months 29 days or  
4 months – 4 months to 4 months 29 days and  
Up to 6 months – 5 months to 5 months 29 days

Additional data collection time periods that may assist Community Health Services in determining breastfeeding duration rates:

- ☐ Continued breastfeeding at 1 year – includes the period of 12 – 15 months
- ☐ 18 months – includes the period of 16 to 21 completed months
- ☐ 24 months – includes the period of 22 to 25 completed months

### Footnote:

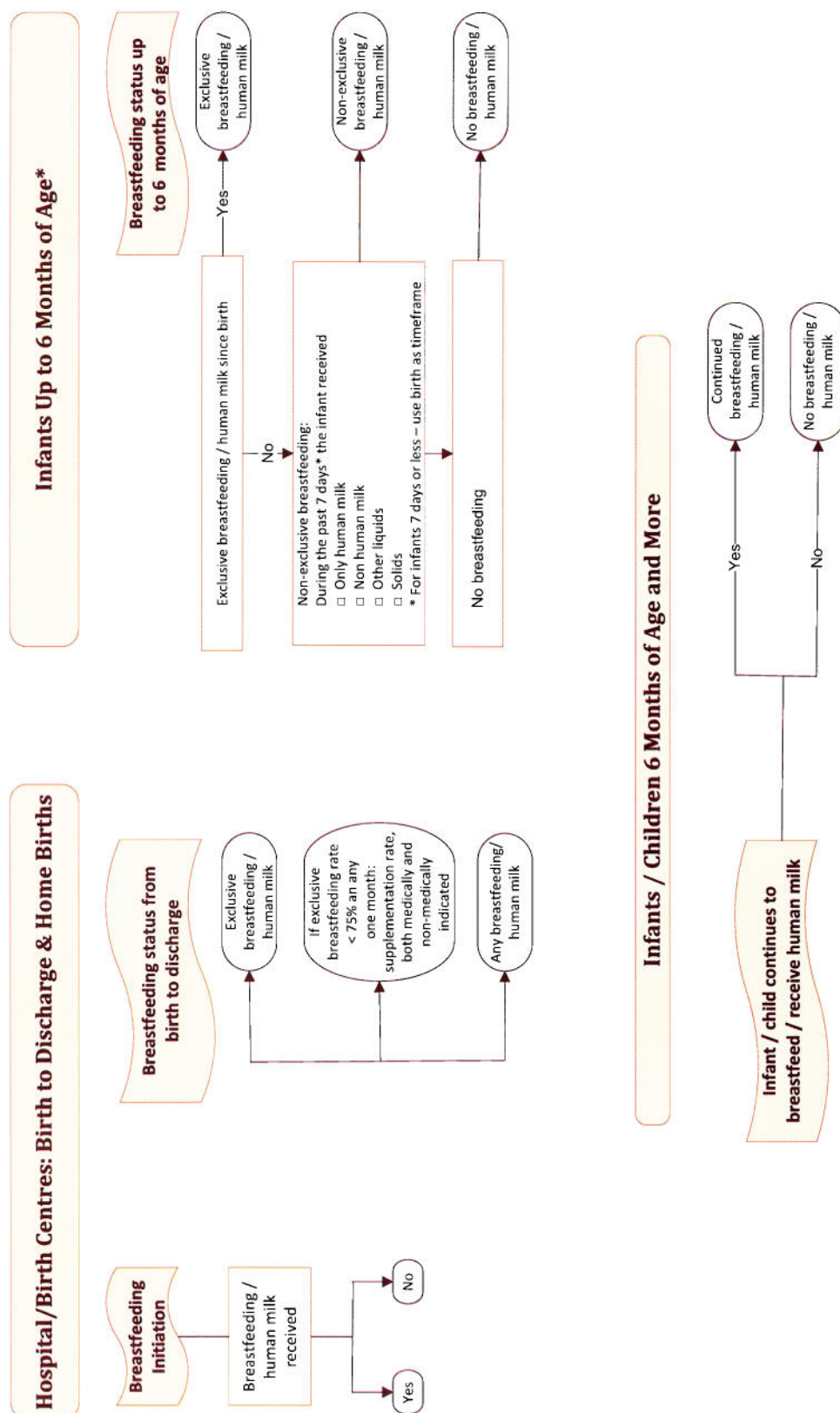
Rationale regarding essential time frames for data collection:

- 5 months up to 5 months 29 days – An important time for reinforcing continued breastfeeding and appropriate introduction of nutritious and safe complementary foods.
- 12 months: Important time to reinforce the value of continued breastfeeding to two years and beyond.

### Questions for determining breastfeeding status for infants from birth to 5 months 29 days

1. During the past 7 days did your baby receive water, other fluids (such as formula), or solids?
2. Mothers who indicate their infant received only human milk during the past 7 days should be asked: Has your baby ever received water, other fluids (such as formula), or solids since he or she was born?

## Algorithms for Breastfeeding Data Collection



BCC, 2012

## Health Outcomes, Health Care Savings, and Additional Economic and Environmental Benefits of Breastfeeding

### Health Outcomes for Infants and Mothers, and Long-Term Health Effects

Evidence that breastfeeding contributes to better short- and long-term health outcomes for infants, children, and mothers continues to accumulate. Recently published systematic reviews provide compelling authentication of associations between breastfeeding and health outcomes in developed countries<sup>1</sup> and the long-term health effects of breastfeeding.<sup>2</sup> Difficulties inherent in breastfeeding studies are acknowledged in these reviews as to how breastfeeding is defined (e.g., exclusive, partial, or minimal breastfeeding and comparisons to bottle feeding as exclusive or mixed); and variability of data collection periods specific to the length of time that infants are breastfed (e.g., 3, 6, or 12 months). These inconsistencies can mask outcomes showing protective effects of breastfeeding, i.e., studies of short duration, (1 or 3 months), limits findings of the effects of breastfeeding on long term health outcomes. In the two meta-analyses cited,<sup>1,2</sup> analyses of the studies reviewed were rigorous, adjustments were made for potential confounders, and conclusions are conservative.

**Full term infant health outcomes:**<sup>1,2</sup> Exclusive breastfeeding for 3, 4, or 6 months, depending on the data collected, was associated with noteworthy reductions in risk for acute otitis media infections; atopic dermatitis in children with a family history of atopy; asthma among children less than 10 years, particularly among those with a family history of asthma; obesity among adolescents and adults; sudden infant death syndrome (SIDS);<sup>1,2</sup> gastrointestinal infections during the first year of life; hospitalization of infants with lower respiratory tract diseases;<sup>1,2,3</sup> type 1 and type 2 diabetes in later life;<sup>2</sup> and upper respiratory infections.<sup>3</sup> Breast feeding for at least 6 months was associated with a significant reduction in acute lymphocytic leukemia and acute myelogenous leukemia.<sup>1,2</sup>

Associations that were unclear and therefore further study advised were between breastfeeding and cardiovascular diseases; risk of cardiovascular diseases later in life; infant mortality in developed countries; and cognitive development in infants born in developed countries.<sup>1,2</sup> Recent publications, however, contribute the following evidence. In a randomized control trial (RCT), children at 6.5 years who had been exclusively breastfed for 3 to 6 months had notably higher scores on intelligent quotient tests and academic ratings by teachers;<sup>17</sup> and breastfeeding for 4 months or longer was associated with improved developmental outcomes for children aged 1 to 3 years, after adjustment for multiple confounding factors.<sup>5</sup>

**Maternal health outcomes:**<sup>1,2</sup> Evidence is consistent that women who breastfeed have a reduced risk of breast cancer,<sup>1,2</sup> ovarian cancer,<sup>15,16</sup> and type 2 diabetes for women without a history of gestational diabetes.<sup>2</sup> For these diseases, the protection from breastfeeding is a dose-response relationship, i.e., the longer the woman breastfeeds the greater the risk reduction. Evidence is unclear regarding breastfeeding and maternal return to pre-pregnant weight and postpartum depression, and evidence is insufficient to show an association between breastfeeding and osteoporosis.<sup>1,2</sup>

**Long-term health effects of breastfeeding:**<sup>6</sup> Studies published in English, French, Portuguese and Spanish specific to long-term effects of breastfeeding on blood pressure, obesity, cholesterol levels, type-2 diabetes, and intellectual performance for individuals who are breastfed beyond infancy were reviewed. The evaluation methods were rigorous and confounders were considered. Some of the conclusions, however, vary from those of the infant and maternal outcomes review.<sup>1,2</sup> For individuals breastfed, findings show that longer breastfeeding is *significantly* associated with lower systolic and diastolic blood pressure; lower cholesterol levels in adults (not for children or adolescents); decreased likelihood of obesity; reduced incidence of type-2 diabetes; and in young adults higher intellectual performance based on a mean difference of 4.9 on IQ scores and continued reports of positive school performances. Although conclusions of complex studies that are meticulously conducted are contradictory, findings from each study add knowledge, create awareness of relationships for clinical considerations, and provide a base for further study to accumulate additional evidence for confirming findings.



### Health Care Savings

Based on a prospective study<sup>7</sup> and a report for the US government on the Economic Benefits of Breastfeeding<sup>8</sup> the protective effects of breastfeeding on infant and maternal health that substantially contribute to health care savings have been evident for the past decade. In a recent cost analysis study<sup>9</sup> in the United States, health care costs are shown to be even greater and the number of infant deaths decreased. It is projected that if 90% of infants were exclusively breastfed for the recommended 6 months of life, 13 billion dollars could be saved and an excess of 911 infant deaths prevented every year. Or if 80% of infants were exclusively breastfed for 6 months, 10.5 billion dollars and 741 infant deaths could be prevented each year. Analysis was based on nine pediatric diseases; necrotizing enterocolitis, otitis media, gastroenteritis, hospitalization for lower respiratory tract infections, atopic dermatitis, sudden infant death syndrome, childhood asthma, childhood leukemia, type 1 diabetes mellitus, and childhood obesity. Transposing what we now know about the positive effects of breastfeeding and infant health, maternal health outcomes, and associations with long-term breastfeeding effects on health conditions, the cost benefit to the British Columbia and Canadian health care system would be substantial if infants were exclusively breastfed for a minimum of three months and preferably six months as recommended by Health Canada and numerous Canadian health professional organizations.

### Additional Economic and Environmental Benefits

Economic and environmental advantages for families and communities have been further identified.<sup>10</sup> Parental absenteeism from work is less among families whose infants are breastfed when compared to those whose infants are formula fed<sup>11,12</sup> thus an economic benefit for both employers and families. For communities, disposition of wastes, i.e., formula cans and bottles used for feeding breastmilk substitutes is reduced and for the environment the energy materials required for producing, packaging, and transporting breastmilk substitutes is diminished.<sup>10</sup>

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### Acceptable Medical Reasons for Use of Breastmilk Substitutes

There are exceptionally few infant and maternal medical conditions in which breastfeeding, either permanently or temporarily, or provision of breastmilk for the infant is not recommended.<sup>1,2,3,4</sup> When it is not possible to breastfeed or if supplemental infant feeding is required, the preferred alternative is the mother's expressed breastmilk, followed by pasteurized donor breastmilk, then breastmilk substitute/infant formula. Before initiation of any supplemental feeding an assessment of the mother and infant including observation of breastfeeding is critical to determine that supplementation is appropriate and necessary. Consideration of the benefits of breastmilk and the possible risks associated with breastmilk substitutes is essential in making infant feeding recommendations.<sup>2,3,4</sup>

#### **Infants who *should not receive breast milk or any other milk except specialized formula***<sup>3</sup>

- Infants with an inborn error of metabolism,<sup>2</sup> e.g. classic galactosemia, maple syrup urine disease, and phenylketonuria<sup>3</sup> although for the latter, some breastfeeding is possible under continual supervision<sup>3</sup>

#### **Infants for whom breast milk remains the best feeding option but who may need other food in addition to breast milk for a limited period**<sup>3</sup>

- Infants born weighing less than 1500 g (very low birth weight)<sup>3</sup>
- Infants born at less than 32 weeks of gestational age (very preterm)<sup>3</sup>
- Infants who are unable to feed at the breast due to congenital malformation or illness<sup>2</sup>
- Newborn infants who are at risk of hypoglycaemia by virtue of impaired metabolic adaptation or increased glucose demand (such as those who are preterm, small for gestational age or who have experienced significant intrapartum hypoxic/ischaemic stress, those who are ill and those whose mothers are diabetic) if their blood sugar fails to respond to optimal breastfeeding or breast milk feeding<sup>3</sup>

#### **Maternal conditions that may justify *permanent* avoidance of breastfeeding**<sup>3</sup>

- Mothers with HIV infection (in Canada and other resource-rich countries<sup>1</sup>) or those with human T-lymphotropic virus type 1 or 2 infection<sup>1,4</sup>

#### **Maternal conditions that may justify *temporary* avoidance of breastfeeding**<sup>3</sup>

- Severe illness that prevents a mother from caring for her infant,<sup>2</sup> for example sepsis<sup>3</sup>
- Active, untreated tuberculosis;<sup>1,3</sup> however, breastfeeding is compatible following 2 weeks of TB therapy;<sup>1</sup> TB prophylaxis should be provided to the infant<sup>1</sup>
- Herpes simplex virus (HSV-1 and HSV-2): if lesions on the breast, interrupt breastfeeding on the affected breast until lesions are healed (crusted); use good hand hygiene<sup>1,3</sup>
- Maternal medication generally contraindicated during lactation
  - Radiopharmaceuticals used for diagnosis or therapy e.g. radioactive isotopes, or iodine-131<sup>3,4,5,6</sup>
  - Antineoplastic and immune suppressants used for chemotherapies<sup>3,4,5,6</sup>
  - Abuse of drugs or social drug use<sup>4,5,6</sup>
  - Metronidazole (high dose) (antibiotic): discontinue breastfeeding for 12 to 24 hours to allow excretion of dose<sup>1</sup>
  - Primaquine, quinine: unless both mother and infant have normal G6PD levels<sup>1</sup>
  - Lithium carbonate<sup>6</sup> and sedating psychotherapeutic drugs, anti-epileptic drugs and opioids and their combinations may cause side effects such as drowsiness and respiratory depression and are better avoided if a safer alternative is available<sup>3</sup>

- **Note:** Maternal medications contraindicated during lactation are few in number<sup>1,2,3,4,5,6</sup> and recommendations vary depending on the most up to date information available. Influencing factors in clinical decision making include the gestational and current age of the infant, the drug dose and length of time it is given. Health professionals should obtain the most current pharmaceutical information from a reliable source regarding use of drugs for lactating women and when it is safe to resume breastfeeding following drug use.
- **Note:** Use of Domperidone – Maleate  
For some women, the use of the peripheral dopamine antagonist, Domperidone, may enhance maternal breastmilk supply but is controversial and is not addressed in this guideline. To obtain information about this medication, please refer to the two websites below.
  - Health Canada-endorsed advisory: *Domperidone Maleate – Associated with Serious Abnormal Health Rhythms and Sudden Death (Cardiac Arrest)* – for the public  
[http://www.hc-sc.gc.ca/dhp-mps/meddeff/advisories-avis/public/2012/domperidone\\_pc-cp-eng.php](http://www.hc-sc.gc.ca/dhp-mps/meddeff/advisories-avis/public/2012/domperidone_pc-cp-eng.php)
  - Statement release by a group of Canadian perinatal health experts in response to the Health Canada advisory can be found below.  
[www.ilca.org/i4a/pages/index.cfm?pageid=3520](http://www.ilca.org/i4a/pages/index.cfm?pageid=3520)

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## Breastfeeding Questionnaires and Assessment Tools\*

Title	Purpose	Reliability	Validity
Breastfeeding Attrition Prediction Tool (BAPT) <sup>1,2,3</sup> . <u>Modified BAPT Tool</u> <sup>4</sup> .	To identify women at risk for early, unintended weaning. Four factors measure negative and positive breastfeeding attitude, perceived maternal control and social and professional support.	Cronbach alphas for all scales, .79-.837; 80-.93 <sup>3</sup> and .81-.86 <sup>4</sup>	Prediction validity: 3 of 4 scales related to 8 week feeding outcome <sup>1</sup> and negative sentiment scale predicted early unintended weaning <sup>2</sup> . <u>Modified BAPT</u> : 2 scales predicted 78% of women who discontinued breastfeeding at 8 weeks and 68% of those still breastfeeding <sup>4</sup>
Maternal Breastfeeding Evaluation Scale(MBFES) <sup>5,6</sup>	To measure a mother's overall evaluation of the breastfeeding experience using a 30 item Likert scale. Subscales include: maternal enjoyment/role attainment, infant satisfaction/growth, and lifestyle/maternal body image.	Test-retest correlations: .82 to .93. Cronbach alphas for subscales: .80 to .93 <sup>5</sup> and .73 to .83 <sup>6</sup>	Items developed from qualitative study. <sup>7</sup> Predictive validity: Significant positive correlation of total scale and subscales with maternal satisfaction and breastfeeding intent and duration. <sup>5,6</sup>
Breastfeeding Self-Efficacy Scale (BSES) <sup>8</sup>	To assess and measure confidence in breastfeeding mothers. Factors include techniques/maternal skills and attitudes and beliefs.	Cronbach alpha: .96.	Content validity. Predictive validity: Feeding method (breast or bottle) at 6 weeks postpartum. <sup>8</sup>
LATCH breastfeeding assessment tool <sup>9</sup>	To assess effective breastfeeding in first week after birth for latch-on, audible swallowing, nipple type, comfort of breast/nipple, and help needed to position baby.	Interrater reliability: Mothers' and nurses' total scores positively correlated. <sup>10</sup>	Requires further testing but mothers' total scores positively correlated with breastfeeding at 6 weeks postpartum. <sup>10</sup> Score of ≥ 9 at 16-24 hours post-delivery a moderate predictor of breastfeeding duration at 6 weeks. <sup>11</sup>
Infant Breastfeeding Assessment Tool (IBFAT). <sup>12</sup>	To assess and measure infant breastfeeding competence. Four subscales measure readiness to feed, rooting, fixing and sucking. Score range 0 to 12.	Interrater reliability: 91% agreement in co-assessed feeds <sup>12</sup> Pairwise correlations of raters .58 <sup>13</sup>	Content validity and observation in clinical practice. <sup>12</sup>

\* Source: From Hewat (2010). In J. Riordan & K Wambach Eds., *Breastfeeding and Human Lactation*, 4<sup>rd</sup> Ed., Boston: Jones and Bartlett Publishers. Permission from J Riordan and K Wambach. Update (R.Hewat) March 2011.

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### Alternative Feeding Techniques

- Temporary feeding solutions to use when full breastfeeding is not established and supplemental infant nourishment is recommended
- Possible reasons are: mother and infant are separated and/or infant has compromised abilities for attaching to and suckling at the breast
- Expressed breastmilk is the optimum feeding choice. Assist the mother to hand-express colostrum or breastmilk and/or establish a pumping regime to stimulate breastmilk production. Donor milk, if available, supplements mother's breastmilk until her supply is established<sup>1</sup>
- Feeding methods include cup-feeding, spoon, dropper or syringe, and finger-feeding<sup>1</sup>
- All methods require:
  - Strict hygiene, hand washing, and washing and rinsing equipment between feedings
  - Continued monitoring by a health care provider with breastfeeding expertise until breastfeeding is established
- Effectiveness of alternate feeding methods is limited. One systematic review examining cup, bottle, or feeding tube concluded that infants supplemented with a cup were more likely to be exclusively breastfed at hospital discharge but there were no breastfeeding differences at 3 or 6 months postpartum for infants initially fed by one of the three methods<sup>2</sup>
- **Cup-Feeding**
  - Advantage: less intrusive method; stimulates correct tongue and jaw movements, olfactory and oral sensory receptors, and production of saliva and lingual lipases to enhance digestion; requires minimal infant energy; infants can pace the feeding; encourages eye contact and social stimulation; and a skill easily learned by infants and parents<sup>3</sup>
  - Disadvantage: does not fulfill infant suckling need; infant dribbling; and/or infant prefers this feeding method of feeding
  - Guidelines<sup>3,4</sup>
    - Ensure infant alert and held in a semi-upright position; support infant's head
    - Tip container of milk (no more than 30 cc in container) towards infant's mouth, resting on but not exerting pressure on the lower lip. Infants tongue is forward
    - Infant laps or sips the milk
    - Allow time for the infant to swallow and let the infant pace the feeding. Never pour milk into the infant's mouth
    - Keep the container in place if the infant pauses until the infant indicates satiety
- **Spoon, Dropper, or Syringe Feeding**
  - Short term methods useful for feeding drops of colostrum to infants in the first days following birth. A spoon may be most efficient for feeding colostrum drops
  - Guidelines<sup>4</sup>
    - Spoon: rest spoon on the infant's lower lip, and tip to bring the milk in contact with the upper lip
    - Dropper or syringe: Insert slightly in inside the infant's mouth, inside the lower lip, or between cheek and gums
    - Follow guidelines for cup feeding (above)

## APPENDIX F

### • Finger-Feeding

- Advantage: infant's tongue is forward and down rather than back; may stimulate infant sucking, and/or assists some infants to learn to suck
- Disadvantage: More difficult for parent's to learn and feeding may take two individuals; more intrusive; infant may become dependent or prefer this method of feeding
- Guidelines<sup>4,5</sup>
  - Wash hands thoroughly if a parent; a non-family member such as a health-care professional should use a non-latex glove for the procedure
  - Use #5 French tube that is soft. Attach tube to syringe or bottle of expressed breastmilk
  - Face infant towards his/her mother and support the infant's head with one hand behind neck and shoulders
  - Use a large finger, nail side down; tape the tube on the soft part of the finger, no further than the finger end
  - Touch the infant's lips with the finger until the mouth opens; gently insert the finger, keeping it straight, to the juncture of the soft and hard palate to stimulate sucking. Avoid stimulating the baby's gag reflex.
  - Infant's tongue should lie flat
  - Infant should start to suckle, felt as a slight pull along the nail bed; allow time for swallowing
  - Observe infant's overall reaction and suckling and swallowing abilities

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### Equipment: Breast Pumps and Nipple Shields

***Breast pumps and nipple shields should be used judiciously, with caution, and with a plan for discontinuing their use; never as a “quick fix.”***

#### Breast Pumps

- *Hand expression* is advocated for full term infants; teach all mothers this technique
- Recommended use:
  - Mother and infant separated (premature infant; medical or situational circumstances)
  - Conditions that compromise infant attachment/latch to the nipple/breast
- Pump types: influenced by the purpose, followed by availability, cost, and maternal preference, e.g., the mother of a premature infant requires a pump that will stimulate and sustain milk production and is appropriate for using many times a day whereas portability may be most important for a mother returning to work
  - Cylinder or trigger-handled pumps are useful for occasional pumping
  - Battery-operated hand pumps are efficient only when breastfeeding is well established; useful for working mothers; batteries often require frequent replacement, and pumps that have an AC connector are more effective<sup>1</sup>
  - Electric pumps are most efficient in stimulating milk-production and maintaining supply;<sup>1,2,3</sup> Pumps with double pumping mechanism provide higher<sup>4</sup> milk yield in a shorter time.<sup>3,4</sup> Pumping time varies depending on milk production, efficiency of milk ejection reflex, and, maternal relaxation
- Guidelines
  - Separation at birth
    - Encourage skin-to-skin contact as soon as mother and/or baby are stable; continue as frequently as possible
    - Initiate milk expression within 6 hours of birth or sooner, followed by at least 8 times in each 24 hours
    - Combination of hand techniques with electric pumping may increase milk production for mothers with a preterm infant<sup>5</sup>
    - Advise mother that milk expression stimulates milk production until baby is able to breastfeed; initially the amount is low but increases over time<sup>5</sup>
    - Save colostrum/expressed breastmilk and feed the infant by a spoon, cup or gavage. For small amounts of colostrum/breastmilk a spoon may be preferred to ensure maximum amount of milk is available for the infant
    - If infant is in NICU, pump at baby's bedside or view baby's picture while pumping; provide a quiet environment conducive to relaxation and minimal interruptions
  - General instructions
    - Before pumping: warm shower or apply warm compresses to breasts and massage breasts
    - Start pumping with the lowest pump pressure and increase only to mother's comfort level. Ensure the pump flange is a suitable size for the mother
    - Pump each breast for approximately 15 to 20 minutes and use breast compression
    - Ask the mother how she feels about pumping; anxiety, fatigue, fear of failure, or embarrassment can impede milk letdown and ejection. Acknowledge and reassure as appropriate
    - Instruct mother re use and cleaning of equipment, and storing the milk (see below)

## APPENDIX G

- Common problems: possible causes and solutions<sup>1</sup>
  - Sore nipples are most common
    - Assess pump pressure and lower as indicated
    - Ensure flange opening is not too small for the nipple or too large to be effective
    - Pump more frequently for shorter periods; switch between breasts during pumping
  - Small volume of breastmilk attained
    - Use strategies recommended in guidelines section above
    - Pump more frequently for shorter periods; switch between breasts during pumping
  - Decreasing milk volume over time e.g., when infant is premature
    - Review pumping schedule and infant needs; increase pumping as necessary
    - Incorporate skin-to-skin contact into care
    - Refer to physician as indicated to consider use of medication such as domperidone

### Nipple Shields

- Use of ultra thin silicone shields shows no difference in maternal hormonal levels and infant intake;<sup>6</sup> increase in milk transfer among preterm infants;<sup>7</sup> satisfactory infant weight gain; and mothers' perceptions that milk production is not decreased<sup>8,9,10</sup>
- Recommended use:
  - Latch is difficult or compromised due to flat or inverted maternal nipples; infant's mouth small; mother's nipples large; infants suck is weak (e.g, prematurity)
  - Infant has had many artificial nipple feedings and has difficulty learning to suckle on the breast
  - Occasionally used for sore nipples
- Guidelines:
  - Assess and correct position and latch if indicated before using nipple shield
  - Use only an ultra-thin silicone nipple shield
  - If milk production needs stimulation apply warm compress and/or breast massage before feeding and pump/express breasts after feeding
  - Wash nipple shield with hot soapy water and rinse well between feedings
  - Monitor use, infant weight gain, breastmilk production, and possibility of nipple abrasion, plugged duct, or mastitis
  - When the initial problem is alleviated *gradually* wean infant from the shield by starting the feeding with the shield and removing it after letdown has occurred and infant is less hungry. This may minimize frustration of the infant at the breast

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## APPENDIX G

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### Handling and Storing Human Milk

Guidelines are based on those of the Human Milk Banking Association of North America.<sup>1</sup>

Refer mothers to *Baby's Best Chance*<sup>2</sup>

- Cleanliness
  - Hand hygiene
    - Before and after feeding and diaper changes, before expressing milk, and before handling equipment
    - Lather and wash hands with soap and water for 15 seconds paying particular attention around and under finger nails
    - Antimicrobial soap is not necessary at home; allow bar soap to dry between uses
    - In hospital, dry hands with a paper disposable paper towel and use a paper towel to turn tap off
  - Pump equipment
    - After use, rinse equipment that has been in contact with milk in cool water, wash with warm soapy water, rinse well, and dry on a clean paper towel or, rinse pieces and clean in a dishwasher
    - Examine tubing and, if moist, clean by washing and removing any water droplets then run the pump with tubing attached to aid drying; or replace tubing
- Storing expressed human milk
  - Storage containers
    - Glass or hard plastic bottles such as those used for infant feeding and clean food storage containers with solid, tight fitting, leak-proof lids are preferred
    - Disposable liners for feeding bottles are suitable but double bagging is recommended
    - Label containers of expressed milk with date of expression and if freezing milk, label date of freezing
  - Storage time
    - Fresh, expressed milk safe at room temperature for 4 – 6 hours
    - Fresh, expressed milk can be refrigerated ( $\leq 4^{\circ}\text{C}$ ) for up to 8 days
    - Previously frozen milk, thawed in a refrigerator must be used within 24 hours and must not be refrozen
    - Previously frozen milk brought to room temperature is safe for one feeding and should be discarded following the feeding
  - Freezing milk
    - Fill container  $\frac{3}{4}$  full as milk expands when frozen
    - Freshly expressed milk that has been chilled may be added to milk already frozen; if the infant is sick or hospitalized use a fresh container each time milk is expressed
    - Freezer temperature should be  $-20^{\circ} \pm 2^{\circ}\text{C}$  ( $-4^{\circ} \pm 4^{\circ}\text{F}$ ). A freezer that keeps ice cream hard is sufficiently cold
    - Store in a freezer for up to 12 months for full term infants
    - Thawing frozen milk:
      - Thaw quickly in a container of warm water ( $\leq 37^{\circ}\text{C}$  or  $98^{\circ}\text{F}$ )
      - If thawed at room temperature refrigerate milk before completely thawed and ice crystals are apparent
      - Ensure milk completely thawed and agitated before feeding as milk may separate when frozen
- Warming breast milk for feeding<sup>2</sup>
  - Never warm milk in a microwave – uneven heating can burn the baby's mouth
  - Stand container of milk in warm tap water for a few minutes or hold under warm tap water keeping the lid/cap dry
  - Infants can be given cool milk

## APPENDIX H

### References

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## Revision Committee

### Members of the Breastfeeding Healthy Terms Infants Guideline Revision Committee

Perinatal Services BC (PSBC) would like to acknowledge the working group who revised the Breastfeeding Healthy Term Infants Guideline. Working group members included:

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While every attempt has been made to ensure that the information contained herein is clinically accurate and current, Perinatal Services BC acknowledges that many issues remain controversial, and therefore may be subject to practice interpretation.