Perinatal Services BC
Newborn Guideline 13
Newborn Nursing Care Pathway

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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.

Introduction

About the Newborn Nursing Care Pathway

The Newborn Nursing Care Pathway identifies the needs for care of newborns and is the foundation for the British Columbia Newborn Clinical Path. To ensure all of the assessment criteria are captured, they have been organized into five main sections:

- Physiological health (organized from head to toe)
- Behavioural
- Infant feeding
- Health follow-up
- Screening/other

While the newborn assessment criteria are presented as discrete topic entities it is not intended that they be viewed as separate from one another. For example, the newborn physiological changes affect her/his feeding and behaviour. To assist with this, cross referencing will be used throughout the document (will be seen as "Refer to…"). This will also be evident with the cross referencing to the Postpartum Nursing Care Pathway as the newborn and mother are considered to be an inseparable dyad with the care of one influencing the care of the other. An example of this is with breastfeeding as it affects the mother, her newborn and bonding and attachment.

In this document, assessments are entered into specific periods; from immediately after birth to 7 days postpartum and beyond. These are guidelines and are used to ensure that all assessment criteria have been captured. Once the newborn and her/his mother are in their own surroundings, details of physical assessments will be performed based on the individual nursing judgment in consultation with the mother.

Who Updated the Newborn Nursing Care Pathway

Perinatal Services BC (formerly BC Perinatal Health Program)[1] coordinated the updating of this document. It represents a consensus opinion, based on best evidence, of an interdisciplinary team of health care professionals. The team included nurses form acute care and public health nursing representing each of the Health Authorities as well as rural and urban practice areas. Clinical consultation was provided by family physicians, obstetricians, pediatricians and other clinical experts as required.

Statement of Family Centered Care

In conjunction with Women Centred Care, which places the woman at the center of care, family-centered maternity care, is an attitude/philosophy rather than a policy, and is based on guiding principles[2]. Key principles have been adapted and are reflected in the Newborn Nursing Care Pathway.

- Women and families have diverse birthing experiences (philosophies, knowledge, experience, culture, social, spiritual, family backgrounds and beliefs) thus approaches to care need to be adapted to meet each family's unique needs
- Relationships between women, their families, and the variety of health care providers are based on mutual respect and trust
- In order to make knowledgeable and responsible informed decisions in providing newborn care, women and their families require support and information
- Parents need to and should be provided with information about newborn screening/treatments (E.g.-eye prophylaxis, vitamin K and newborn screening) including why the treatment is recommended, advantages, side effects and risks if not performed – if parents decline screening/treatment, a signed and witnessed informed refusal is required[3]
- The family (Using Women Centred Care principles and as defined by the woman) is encouraged to support and participate in all aspects of newborn care
- While in hospital (whenever possible), assessments and procedures should be performed in the mother's room (to ensure mother-infant togetherness and to provide anticipatory guidance and information)

- Prior to, during, and following procedures that may cause newborn discomfort/pain, mothers should be encouraged to comfort their newborns through breastfeeding or skin-to-skin contact

Referring to a Primary Health Care Provider (PHCP)

Prior to referring to a Primary Health Care Provider (PHCP) a specific or newborn global assessment[4] (physical and feeding) including history of the pregnancy and labour and birth, will be performed by the nurse. Whenever possible, the woman/her family (supports) are present at the assessment and included in the planning, and implementation of the newborn's care. In the intervention sections it will be referred to as Nursing Assessment.

Referrals to Other Resources

To support nursing practice the following resources are available. Links for many specific resources are included throughout the document. Key resources for parents are:

- **Healthy Families BC Website** – This website is filled with up-to-date and practical information, useful tools and resources for women, expectant parents, and families with babies and toddlers up to 3 years of age. **www.healthyfamiliesbc.ca/parenting/**
- **HealthLink BC** – **www.healthlinkbc.ca/kbaltindex.asp**
- **HealthLink BC** – Telephone number accessed by dialing 8-1-1
  (Services available – health services representatives, nurses pharmacists, dietitians, translation services and hearing impaired services)

Goals and Needs - Health Canada's National Guidelines

As indicated by Health Canada's National Guidelines[5] the postpartum period is a significant time for the mother, baby, and family as there are vast maternal and newborn physiological adjustments and important psychosocial and emotional adaptations for all family members or support people. The following are the goals, fundamental needs, and basic services for postpartum women and their newborns, adapted from Health Canada's National Guidelines which are to:

- Assess the physiological, psychosocial and emotional adaptations of the mother and baby
- Promote the physical well-being of both mother and baby
- Promote maternal rest and recovery from the physical demands of pregnancy and the birth experience
- Support the developing relationship between the baby and his or her mother, and support(s)/family
- Support the development of infant feeding skills
- Support the development of parenting skills
- Encourage support of the mother, baby, and family during the period of adjustment (support may be from other family members, social contacts, and/or the community)
- Provide education resources and services to the mother and support(s) in aspects relative to personal and baby care
- Support and strengthen the mother's knowledge, as well as her confidence in herself and in her baby's health and well-being, thus enabling her to fulfill her mothering role within her particular family and cultural beliefs
- Support the completion of specific prophylactic or screening procedures organized through the different programs of maternal and newborn care, such as: Vitamin K administration and eye prophylaxis, immunization (Rh, Rubella, Hepatitis B), prevention of Rh isoimmunisation and newborn screening
- Assess the safety and security of postpartum women and their newborns (families) (e.g. car seats, safe infant sleeping, potentially violent home situations, substance use)

- Identify and participate in implementing appropriate interventions for newborn variances/problems
- Assist the woman in the prevention of newborn variances/problems

Needs – World Health Organization (WHO)

The WHO[6] stated that "postpartum care should respond to the special needs of the mother and baby during this special phase and should include: the prevention and early detection and treatment of complications and disease, and the provision of advice and services on breastfeeding, birth spacing, immunization and maternal nutrition."[7]

The twelve specific WHO newborn needs continue to be:

- Easy access to the mother
- Appropriate feeding
- Adequate environmental temperature
- A safe environment
- Parental care
- Cleanliness
- Observation of body signs by someone who cares and can take action if necessary
- Access to health care for suspected or manifest complications
- Nurturing, cuddling, stimulation
- Protection from disease, harmful practices, abuse/violence
- Acceptance of sex, appearance, size
- Recognition by the state (vital registration system)

Timeframes

The first 12 hours are considered to be the period of transition where the normal newborn adapts to extra-uterine life.[8] Thus, the guidelines determined the first 12 hours following the third stage of birth as the Period of Stability (POS) followed by >12-24 hours, >24-72 hours, and >72 hours - 7 days and beyond.

NOTE: In order to capture key parent teaching/anticipatory guidance concepts, concepts will be located in the >12-24 hour timeframe. It is at the individual nurse's discretion to provide this information/support earlier or later.

Newborn Physiological Stability

The Newborn Nursing Care Pathway has adapted Consensus Statement #11, in the BC Postpartum Consensus Symposium[9] and recommended that the six following criteria define infant physiologic stability following term vaginal delivery:

- Respiratory rate between 40-60/ min
- Axillary temperature of 36.5- to 37.4 C[10] and stable heart rate (100-160 bpm)[11]
- Suckling/rooting efforts and evidence of readiness to feed
- Physical examination reveals no significant congenital anomalies
- No evidence of sepsis
- No jaundice developing <24 hrs

Newborn Pain

Newborn pain is generally alleviated by interventions such as holding the baby skin-to-skin, breastfeeding, cuddling, rocking and/or lightly swaddling.

Although the measurement of pain is not usually required for a healthy term infant, there may be times when newborn pain requires further assessment.

For information to increase knowledge of assessing newborn pain the "Behavioral Indicators of Infant Pain" (BIIP) is available. It is an evidence-based, standardized way of assessing pain and is designed for term and preterm infants. Currently, this assessment tool is being used in hospitals around the world and in several BC hospitals' neonatal intensive care units (NICUs). Research on the development of the BIIP has been published in peer reviewed journals and the BIIP has been used to assess pain in a number of studies.[12,13]

If a pain assessment is required, it may be done before a routine handling session (such as during the diaper change) and measured a second time at a subsequent handling to see if a change has occurred. This type of assessment would be equivalent to taking a temperature to see if the baby is in more or less distress over a short period of time (e.g. 2 hours). This measurement then forms part of the nursing documentation to report in the event treatment is needed.

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
HEAD **Assess:** • Shape • Size • Fontanelles • Circumference prn Assess mother's/family/ supports understanding of newborn physiology and capacity to identify variances that may require further assessments **Refer to:** • **Behavior** • **Postpartum Nursing Care Pathway: Bonding & Attachment**	**Norm and Normal Variations** • Head round, symmetrical • May have moulding, some overlapping of sutures • Anterior & posterior fontanelles flat and soft • Neck short and thick • Full range of motion **Parent Education / Anticipatory Guidance** • Place baby skin-to-skin • Discuss variances and when they should resolve (caput succedaneum, cephalohematoma etc.) – refer to variance >12 – 24 hr ▪ Care when handling infant's head • Refer to >12 – 24 hr	**Norm and Normal Variations** Refer to POS **Parent Education / Anticipatory Guidance** • Anterior fontanel: 2 – 4 cm long, diamond shape, closes at 12 – 28 months • Posterior fontanel: smaller than anterior, triangular shape • Supine (back) sleep position • Carry baby and alternate head positions (to avoid flattened head) • Prevention of SIDS **www.healthlinkbc.ca/healthfiles/hfile46.stm**	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Refer to POS • Moulding resolves ~ 3 days • Average head circumference 33 – 35 cm once moulding disappears (ensure consistent way of measuring)[14] **Parent Education / Anticipatory Guidance** • Refer to >12 – 24 hr • Prevent plagiocephaly (flat spots on head) and strengthen neck muscles by placing baby on abdomen when awake (tummy time) for several short periods each day • Carrying infant in arms (vs. in infant seat) assists with prevention of flat head ▪ And promotes bonding

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Health: Head

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
HEAD ***(Continued)***	**Variance** • Caput succedaneum crosses suture lines (edema caused by sustained pressure of occiput against cervix)[15] • Cephalohematoma – collection of blood between skull bone & periosteum caused by pressure against maternal pelvis or forceps – does not cross suture lines[16] • Bruising, excoriation, lacerations • Bulging or sunken fontanelles • Neck webbing, limited range of motion • Masses • Hydrocephaly • Microcephaly **Intervention** • Nursing assessment • Refer to appropriate PHCP prn	**Variance** • Refer to POS • Caput succedaneum – disappears spontaneously within 3 – 4 days[17] • Infants who birth with assistance of vacuum extraction may have caput and bruising • Cephalohematoma – increases first 3 – 4 days, disappears in 2 – 3 wks and may affect the bilirubin screen[18] • Risk of jaundice if head trauma and/or bruising **Intervention** Refer to POS	**Variance** • Refer to 0 – 24 hr **Intervention** • Refer to 0 – 24 hr	**Variance – Cradle cap** **Intervention – Cradle Cap** • Apply non-perfumed oil, use mild non perfumed shampoo to remove oil.[19] **Variance – Plagiocephaly** (flattening of 1 side of the skull) **Intervention – Plagiocephaly** • Carrying and the use of an upright ring type carrier • Supervised tummy time when awake **Variance – Enlarged fontanelles** • Remarkably enlarged fontanelles/splayed suture lines • Head appears abnormally large & looks ‘heavy’-signs of hydrocephalus **Intervention – Enlarged fontanelles** • Nursing assessment • Refer to PHCP prn

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
NARES Assess: • Symmetry • Air entry both nares • Assess mother's/ family/supports understanding of newborn physiology and capacity to identify variances that may require further assessments **Refer to:** • **Vital signs**	**Norm and Normal Variations** • Nose breathers • Symmetrical, no nasal flaring • Thin, clear nasal discharge, sneezing common • After mucous and amniotic fluids are cleared from nasal passages, infant differentiates pleasant from unpleasant odors • Nares patent • Milia present on nose **Parent Education/ Anticipatory Guidance** • Sneezing common **Variance** • Nasal congestion **Intervention** • Nursing assessment • Refer to PHCP prn	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Refer to POS **Variance** • Refer to POS **Intervention** • Refer to POS	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Refer to POS **Variance** • Refer to POS **Intervention** • Refer to POS	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Refer to POS **Variance** • Refer to POS **Intervention** • Refer to POS

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Health: Eyes

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond

EYES
Assess:
• Symmetry
• Placement
• Clarity
• Risks for eye/vision problems (family history)
 	
Assess mother's/ family/ supports understanding of newborn physiology and capacity to identify variances that may require further assessments
 	
Refer to:
• **Skin**
	Norm and Normal Variations
	• Outer canthus aligned with upper ear
	• Dark or slate blue color
	• Blink reflex present
	• Edematous lids
	• Sclera clear
	• No tears
	• Pupils equal and reactive to light
	• May see subconjunctival hemorrhage
	• Administer eye prophylaxis (after completion of initial feeding or by 1 hour after birth) [20]
	  ▪ promotes initiation of feeding and maternal/infant eye contact
	• Uncoordinated movement
	• May see chemical conjunctivitis due to eye ointment
	
	Parent Education/ Anticipatory Guidance
	• Eye prophylaxis – prevention of ophthalmia neonatorum
	• Refer to >12-24 hr
		Norm and Normal Variations
		• Refer to POS
		
		Parent Education/ Anticipatory Guidance
		• Eye care
		  ▪ Clean from inner canthus to outer edge with warm water when bathing
		• Newborn's vision
		  ▪ Nearsighted – see most clearly when objects 8-10 inches from face
		  ▪ Show attention by looking, lifting upper eyelids, 'brightening'
		  ▪ Attracted to human face
		  ▪ Display visual abilities most consistently in quiet alert state
			Norm and Normal Variations
			• Refer to POS
			• Resolving or decreasing edema of eyelids and chemical conjunctivitis
			• May have slight jaundice of sclera
			
			Parent Education/ Anticipatory Guidance
			• Refer to 12 – 24 hr
			• Jaundice progression/ treatment
				Norm and Normal Variations
				• Refer to POS and >24-72 hr
				• May have transient strabismus or nystagmus until 3 – 4 months
				
				Parent Education/ Anticipatory Guidance
				• Parent Education
				• Refer to >12 – 72 hr
				• No tears- tear ducts patent ~ 5 – 7 months

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
EYES ***(Continued)***	**Variance** • Hazy, dull cornea • Pupils unequal, dilated constricted **Intervention** • Nursing Assessment • Refer to appropriate PHCP prn	**Variance** • Refer to POS **Intervention** • Refer to POS	**Variance** • Refer to POS • Conjunctivitis **Intervention** • Teach eye care • Refer to appropriate health care provider prn	**Variance** • Refer to POS and >24 – 72 hr **Intervention** • Refer to POS and >24 – 72 hr **Variance - Blocked tear duct** **Intervention - Blocked tear duct** • Watch and wait • May want to use a warm compress • Ensure there is no infection • If unsure refer to PHCP **Variance – Obvious strabismus or nystagmus >3 – 4 months** **Intervention – Obvious strabismus or nystagmus >3 – 4 months** • Refer to PHCP. may need referral to Pediatric Ophthalmology

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Health: Ears

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
EARS Assess: • For well-formed cartilage • Ears level with the eyes Assess mother's/ family/ supports understanding of newborn physiology and capacity to identify variances that may require further assessments	**Norm and Normal Variations** • Well formed cartilage • Ears level with eyes – top of pinna on horizontal plane with outer canthus of eye • May have temporary asymmetry from unequal intrauterine pressure on the sides of the of head • Startles/reacts to loud noises • Ear canal may contain vernix (short external auditory ear canal) **Parent Education/ Anticipatory Guidance** • Refer to >12-24 hr	**Norm and Normal Variations** • Refer to POS **Parent Education/Anticipatory Guidance** • Cleaning of ears e.g. do not use a cotton tipped swab • Higher-pitched sounds generally gain the infant's attention rather than lower pitched sounds • Provincial Hearing Screening Program • **www.healthlinkbc.ca/ healthfiles/hfile71b.stm**	**Norm and Normal Variations** Refer to POS **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr • Able to distinguish mother and father's voice within 2 weeks and responds with distinct reaction pattern to each • Monitor for normal hearing and speech patterns • Exposure to second hand smoke increases risk of ear infection • Review factors associated with increased risk of hearing loss such as ▪ Family history ▪ Low birth weight ▪ Jaundice – requiring transfusion ▪ Infections[21]

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
EARS ***(Continued)***	**Variance** • Unresponsive to noise • Ear tags, ear pits – could indicate a brachial cleft duct or cyst (risk for infection and may need surgical intervention) • Low set ears • Drainage present • Family history of childhood sensory hearing loss • Cranial facial anomalies of pinna or ear canal **Intervention** • Nursing Assessment • Refer to appropriate PHCP prn	**Variance** • Refer to POS **Intervention** • Refer to POS	**Variance** • Refer to POS **Intervention** • Refer to POS	**Variance** • Refer to POS • Exposure to ototoxic medications especially aminoglycosides, such as: ▪ Gentamycin ▪ Kanamycin ▪ Neomycin ▪ Streptomycin ▪ Tobramycin • Bacteria meningitis **Intervention** • Nursing Assessment • Refer to PHCP prn

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Health: Mouth

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond

MOUTH
 	
Assess:
• Lips for colour
• Tongue midline
• Frenulum
• Palate
• Reflexes
• Oral health and care
 	
Assess mother's/ family/ supports understanding of newborn physiology and capacity to identify variances that may require further assessments
 	
Refer to:
• **Feeding**
	Norm and Normal Variations
	• Mucosa moist smooth and pink
	• May have epithelial pearls
	• Tongue midline and can extend out to edge of lower lip
	• May have noticeable sublingual frenulum
	• Intact lips
	• Jaw symmetrical
	• Intact palate (soft, hard)
	• Reflexes
	  ▪ Rooting
	  ▪ Sucking
	
	Parent Education/ Anticipatory Guidance
	• Refer to >12 – 24 hr
	
	Variance
	• Tight frenulum (tongue tie) or heart shaped tongue
	• Cleft lip/palate
	• Short or protruding tongue-large tongue (macroglossia)
	• Small receding chin (micrognathia)
	• Dry mucosa (may be dry after crying)
	• Mouth drooping or opens asymmetrically (may be facial palsy)
	
	Intervention
	• Assess baby's ability to latch without causing pain and damage to nipple
	• Feeding variations to cope with variances
	• Dry mucosa, assess hydration status
	• Refer to appropriate PHCP prn
		Norm and Normal Variations
		• Refer to POS
		
		Parent Education/ Anticipatory Guidance
		• **www.healthlinkbc.ca/healthfiles/hfile19a.stm**
		
		Variance
		• Refer to POS
		
		Intervention
		• Refer to POS
			Norm and Normal Variations
			• Refer to POS
			• May have sucking blister on lips
			• Tongue may be coated white from feeding
			
			Parent Education/ Anticipatory Guidance
			• Refer to >12 – 24 hr
			
			Variance
			• Refer to POS
			
			Intervention
			• Refer to POS
			• If latching difficulty persists due to tight frenulum or tongue refer to PHCP
				Norm and Normal Variations
				• Refer to POS
				
				Parent Education/ Anticipatory Guidance
				• Refer to >12 – 24 hr
				• Oral hygiene
				• Look into baby's mouth regularly
				  ▪ Wipe gums with soft, clean damp cloth daily prior to the eruption of the first teeth
				  ▪ Prevention of tooth decay
				• **www.cda-adc.ca/en/oral_health/cfyt/dental_care_children/tooth_decay.asp**
				
				Variance
				• Refer to POS
				
				Intervention
				• Refer to POS and >24 – 72 hr
				
				Variance – Thrush Candida (fungus)
				• White, cheesy patches on the tongue, gums or mucous membranes – won't rub off
				• Diaper area – red rash
				
				Intervention – Thrush Candida (fungus)
				• Discuss signs, symptoms & treatment
				• Assess mother's nipples for thrush (red, itchy, persistent sore nipples, burning, shooting pain)
				• Both mother and baby need treatment
				• May affect baby's feeding
				• If using soother – may want to discontinue as may contribute overgrowth of yeast [22]
				• Refer to Maternal Guidelines (Breasts)
				• Refer to PHCP for antifungal treatment
				• *PSBC (2013)* Breastfeeding Healthy Term Infants

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond

CHEST
 	
Assess:
• Symmetry
• Shape
• Respirations
• Heart rate
• Cardiovascular function
 	
Assess mother's/ family/ supports understanding of newborn physiology and capacity to identify variances that may require further assessments
	Norm and Normal Variations
	• Circumference about 1cm < head circumference
	• Round, symmetrical; protruding xiphoid process
	• Clavicle intact
	• Chest sounds clear
	• Hiccoughs and sneezing common
	• Breasts may be swollen with clear/milky nipple discharge
	• Mucous
	  ▪ More common in Cesarean births
	  ▪ Dark brown mucous – potential swallowing of mucous/blood during birth
	Parent Education/ Anticipatory Guidance
	• Refer to >12 – 24 hr
	Variance
	• Mucousy / noisy respirations
	• Signs of respiratory distress
	  ▪ Retractions
	  ▪ Grunting
	  ▪ Nasal flaring
	  ▪ Tachypnea
	• Deviation in chest shape
	• Fractured clavicle
	• Asymmetrical movement
	• Breasts inflamed
	• Supernumerary nipples
	• Coughing
	Intervention
	• Nursing assessment
	• Refer to appropriate PHCP prn
		Norm and Normal Variations
		• Refer to POS
		Parent Education/ Anticipatory Guidance
		• Normal newborn breathing
		• Hiccoughs resolve on own
		• Occasional sneezing is infant's mechanism to clear nasal passages
		• Do not squeeze swollen breasts – they are due to maternal hormones
		Variance
		• Refer to POS
		Intervention
		• Refer to POS
			Norm and Normal Variations
			• Refer to POS
			Parent Education/ Anticipatory Guidance
			• Refer to >12 – 24 hr
			Variance
			• Refer to POS
			Intervention
			• Refer to POS
				Norm and Normal Variations
				• Refer to POS
				• Breast enlargement usually resolves by the second week of life
				Parent Education/ Anticipatory Guidance
				• Refer to >12 – 24 hr
				Variance
				• Refer to POS
				Intervention
				• Refer to POS

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Health: Abdomen/Umbilicus

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
ABDOMEN/ UMBILICUS **Assess:** • Symmetry • Bowel sounds • Cord • Umbilical area Assess mother's/ family/supports understanding of newborn physiology and capacity to identify variances that may require further assessments	**Norm and Normal Variations** • Abdomen ▪ Slightly rounded, soft and symmetric ▪ Bowel sounds present ▪ Skin: pink, smooth, opaque ▪ A few large blood vessels may be visible • Cord ▪ Two arteries and one vein ▪ Cord clamp secure **Parent Education/Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • One artery • Umbilical hernia • Masses • Bleeding • Drainage • Absent bowel sounds • Sensitive with palpation • Green emesis &/or feeding intolerance • Bright blood emesis **Intervention** • Nursing assessment • Refer to PCHP prn	**Norm and Normal Variations** • Cord ▪ Clean and dry or slightly moist ▪ Cord clamp secure if present **Parent Education/ Anticipatory Guidance** **Parent Education** • Wash hands with soap & water before and after contact with umbilical area • Review/demonstrate cord care during bath ▪ Clean cord with water & air dry ▪ Water on cotton tipped applicator or washcloth to clean gently around the base of the cord ▪ Clean around the base of the cord after bathing and at diaper changes ▪ Fold diaper below the cord to prevent irritation and to keep it dry and exposed to air ▪ Avoid buttons, coins, bandages or binders over navel ▪ Encourage skin-to-skin with mother – to promote colonization with non pathogenic bacteria from mother's skin flora • S & S infection – redness or swelling >5mm from umbilicus, fever, lethargy, and/or poor feeding **www.healthlinkbc.ca/kbase/topic/special/tp22060spec/sec1.htm** **Variance** • Refer to POS • Cord – Foul odor, redness or swelling >5 mm from umbilicus • S & S of systemic infection – fever, lethargy, and/or poor feeding) **Intervention** • Refer to POS • Do not remove cord clamp if cord is moist or "mucky" • Urgent care if S & S of systemic infection	**Norm and Normal Variations** • Refer to >0 – 24 hr • Cord clamp, if present, may be removed if cord is dry • When infant discharged with cord clamp on, removal of cord clamp to be carried out as per agency policy/ procedures **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >0 – 24 hr **Intervention** • Refer to >0 – 24 hr	**Norm and Normal Variations** • Refer to 0 – 24 hr • Cord separates within 1 – 3 weeks • Slight bleeding may occur with separation **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr • Normal cord separation **Variance** • Refer to 0 – 24 hr **Intervention** • Refer to >0 – 24 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12-24hours	>24- 72 hours	>72 hours – 7 days and beyond
SKELETAL/ EXTREMITIES **Assess:** • Symmetry • Intact and straight spine • Full range of motion Assess mother's/ family/ supports understanding of newborn physiology and capacity to identify variances that may require further assessments	**Norm and Normal Variations** • Symmetrical in size, shape, movement & flexion • Intact, straight spine • Full range of motion • Clavicles intact • Bow-legged, flat-footed • Equal gluteal folds • Equal leg length **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Asymmetrical extremities • Curvature of spine • Non-intact spine • Tufts of hair along an intact spine – may require ultrasound to rule out spina bifida • Coccygeal dimple • Fractures • Poor range of motion • Hypertonia/ contractures of extremities • Skeletal abnormalities • Talipes equinovarus (club foot) • Congenital hip dislocation **Intervention** • Nursing Assessment • Refer to appropriate PHCP prn	**Norm and Normal Variations** Refer to POS Parent Education/ Anticipatory Guidance Ensure hip check done by physician **Variance** • Refer to POS **Intervention** • Refer to POS	**Norm and Normal Variations** Refer to POS **Parent Education/ Anticipatory Guidance** • Refer >12 – 24 hr **Variance** • Refer to POS **Intervention** • Refer to POS	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Refer >12 – 24 hr **Variance** • Refer to POS **Intervention** • Refer to POS

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Health: Skin

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
SKIN **Assess in natural light:** • Skin color • Turgor • Integrity • Factors that increase newborn risk for jaundice (refer to BCPHP Guideline) Assess mother's/ family/supports understanding of newborn physiology and her capacity to identify variances that may require further assessments **Refer to:** • **Feeding**	**Norm and Normal Variations** • May have (acrocyanosis) peripheral cyanosis • Skin intact – may be dry with some peeling; lanugo on back; vernix in the creases • May have erythema toxicum (newborn rash) milia, mongolian spots, capillary hemangiomas,harlequin sign • Skin pinch immediately returns to original state • Skin is sensitive to touch **Parent Education/ Anticipatory Guidance** • Skin-to-skin • Need for tactile stimulation	**Norm and Normal Variations** • Refer to POS • Acrocyanosis resolved **Parent Education/ Anticipatory Guidance** • Refer to POS • Skin variations ▪ Milia ▪ Cracks ▪ Peeling ▪ Hemangiomas ▪ Mongolian spots – frequently in darkly pigmented infants such as Asian, First Nation, African-American > Most often found in the lumbosacral region, but can be found anywhere on the body[23,24] • Skin care – avoidance of perfumed products • Delay first bath until baby stable and completed transition period • Parents encouraged to do the first bath with nursing support • Bathing: ▪ Refer to vital signs re stability ▪ Not required every day ▪ Immersion preferable to sponge bath (less chance for heat loss)[25] ▪ Amount of water, lukewarm temperature, soap can be irritating, use unscented lotions/oils	**Norm and Normal Variations** • Refer to 0 – 24h • About 60 percent of all infants have some jaundice, it generally clears up without any medical treatment[26] • Bilirubin levels – refer to CPS Guideline[27] **www.cps.ca/english/statements/FN/FN07-02.pdf** **Parent Education/ Anticipatory Guidance** • Refer to 0 – 24h • Relationship between poor feeding, hydration & jaundice and the need to monitor • Management of jaundice – feeding, waking sleepy baby, monitoring output **www.healthlinkbc.ca/kb/content/mini/hw164159.html#hw164161**	**Norm and Normal Variations** • Jaundice usually peaks by day 3 – 4, resolves in one – two weeks • Refer to 0 – 72 hr **Parent Education/ Anticipatory Guidance** • Refer to 0 – 72 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
SKIN ***(Continued)***	**Variance** • Pallor (may be genetic) • Generalized cyanosis or increased cyanosis with activity • Unexplained skin rashes/ • lacerations/ breaks in skin • Hemangiomas • Petechia • Bruising (ecchymosis) **Intervention** • Nursing Assessment • Refer to PHCP prn **Variance – Jaundice** • Any jaundice in first 24 hours **Intervention – Jaundice** • Nursing Assessment • Refer to PHCP prn	**Variance** • Refer to POS **Intervention** • Refer to POS **Variance-Jaundice** • Refer to POS **Intervention – Jaundice** • Assess level of jaundice including skin color, hydration • Assess feeding effectiveness- including output & weight • Contact PHCP	**Variance** • Refer to POS **Intervention** • Refer to POS **Variance – Jaundice** • Risk factors present for evidence of jaundice (such as family history of jaundice, LBW, preterm, bruising) • Infant difficult to rouse • Feeding poorly • Parent does not demonstrate ability to monitor feeding, output, behavior and colour **Intervention – Jaundice** • Nursing assessment • Bilirubin level as per facility guide or PHCP orders • Care plan to support and educate parents in monitoring for newborn jaundice • Assess feeding effectiveness • Refer to PHCP prn	**Variance** • Refer to POS • New, unresolved or unexplained rashes **Intervention** • Refer to POS **Variance – Jaundice** • Severe or increasing level of jaundice • Refer to >24 – 72 hr **Intervention – Jaundice** • Refer to >24 – 72 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Health: Neuromuscular

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond

NEUROMUSCULAR
 	
Assess:
• Muscle tone and movement
• Reflexes are present and appropriate for developmental/
 	
Assess mother's/ family/ supports understanding of newborn physiology and capacity to identify variances that may require further assessments
	Norm and Normal Variations
	• Extremities symmetrical, full range of motion (ROM), flexed, good muscle tone
	• Infant reflexes present
	  ▪ Babinski
	  ▪ Grasping
	  ▪ Moro
	  ▪ Palmar
	  ▪ Planter
	  ▪ Rooting
	  ▪ Stepping
	  ▪ Sucking
	• APGAR scores between 7 and 10 at 5 minutes
	
	Parent Education/ Anticipatory Guidance
	• Refer to >12 – 24 hr
	
	Variance
	• Asymmetrical facial/limb movement
	• Abnormal foot posture
	• Facial palsy
	• Brachial palsy
	• Limbs not flexed
	• Lack of muscle tone/resistance (hypotonicity)
	• Seizure activity
	• Jitteriness – rule out low blood sugar (<2.6mmol/L) [28]
	• Abnormal or absent reflexes
	• Arching
	
	Intervention
	• Nursing assessment (including maternal medication/drug use)
	• Jitteriness differentiated between hypoglycemia and seizure activity
	• Refer to PHCP prn
	
	www.camh.net/Publications/Resources_for_Professionals/Pregnancy_Lactation/psychmed_preg_lact.pdf
		Norm and Normal Variations
		• Refer to POS
		
		Parent Education/ Anticipatory Guidance
		• Encourage skin-to-skin and breastfeeding – if concerned about risk for low blood sugar
		• Baby's alertness and readiness to feed
		• Positioning, movement, reflexes, muscle tone
		• Jitteriness vs seizure activity – jittery movements stop when infant is held
		
		Variance
		• Refer to POS
		
		Intervention
		• Refer to POS
			Norm and Normal Variations
			• Refer to POS
			
			Parent Education/ Anticipatory Guidance
			• Refer to >12 24 hr
			• If mom on SSRIs/ SNRIs, ensure a follow-up appointment is booked for 3 – 5 days post discharge
			
			Variance
			• Refer to POS
			
			Intervention
			• Refer to POS
				Norm and Normal Variations
				• Refer to POS
				
				Parent Education/ Anticipatory Guidance
				• Refer to >12 – 24 hr
				
				Variance
				• Refer to POS
				
				Intervention
				• Refer to POS

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
GENITALIA **Assess:** • Genitalia Assess mother's/ family/supports understanding of newborn physiology and capacity to identify variances that may require further assessments **Refer to:** • **Elimination**	**Norm and Normal Variations** • Anus patent • Females ▪ Labia swollen ▪ Labia majora to midline ▪ Urethral open behind clitoris – in front of vaginal opening ▪ Clitoris maybe enlarged ▪ Hymenal tag is normally present ▪ Vernix caseosa present between labia ▪ Whitish mucoid or pseudomensus • Males ▪ Scrotum swollen – rugae present ▪ Testes descended palpable bilaterally ▪ Central urethral opening ▪ Foreskin not retractable ▪ Epithelial pearls may be present on penile shaft ▪ Smegma may be found on foreskin ▪ Erections common **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Undifferentiated • Female ▪ Fusion of labia • Male ▪ Urethral opening below/above tip of penis (hypospadius) ▪ Unequal scrotal size ▪ Testes palpable in inguinal canal or not palpable ▪ Hydrocele **Intervention** • Nursing Assessment • Refer to PCHP prn	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Keep baby clean & dry • Females ▪ Do not remove vernix ▪ Clean from front to back • Males ▪ Do not retract foreskin ▪ Provide information to support informed decision making re circumcision prn ▪ Circumcision not covered under Medical plan **www.healthlinkbc.ca/kbase/topic/special/hw142449/sec1.htm** **Variance** • Refer to POS **Intervention** • Refer to POS	**Variance** • Refer to POS **Intervention** • Refer to POS	**Norm and Normal Variations** • Refer to POS • Swelling of labia and scrotum resolves about day 3 – 4 • Whitish mucoid or pseudomenses subsides by end of first week **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr • If circumcised teach care and S & S of complications ▪ Bleeding ▪ Infection ▪ Edema • For diaper rash ▪ Frequent diaper changing ▪ Keep clean and dry (Refer to Skin) ▪ Exposure to air ▪ Use of barrier cream prn **Variance** • Refer to POS • Rash that does not clear after several days **Intervention** • Nursing Assessment • May refer to PHCP

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Health: Elimination – Urine

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
ELIMINATION – URINE **Assess:** • Bladder output and color of urine is normal for baby's age. • Adequate hydration/ elimination (refer to breastfeeding) Assess mother's/ family/ supports understanding of newborn physiology and capacity to identify variances that may require further assessments **Refer to:** • **Feeding** • **Weight**	**Norm and Normal Variations** • One clear void with possible uric acid crystals (orange/brownish color) • Urine pale yellow and odorless **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >12 – 24 hr **Intervention** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Voids within 24 hr • ≥ 1 wet, clear, pale yellow diaper(s)[29] • Uric acid crystals in the first 24 hr **Parent Education/ Anticipatory Guidance** • Relationship between feeding and output – elimination is a component of feeding assessment (normal voiding for the first 72 hours) • Assessing for adequate hydration • Encourage use of elimination record prn **Variance** • No voiding in 24 hrs • Urine concentrated **Intervention** • Ensure effective feeding • Nursing Assessment • Reassess within 24 hr • Refer to PHCP prn	**Norm and Normal Variations** • 24 – 48 hr: 1 – 2 wet, clear, pale yellow diapers/ day[30] • 48 – 72 hr: 2 - 3 wet clear pale yellow diapers /day [31] **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Less than 1 – 2 wet diapers/ day • Urine concentrated • Inadequate hydration/elimination (poor skin turgor, fontanelles, dry mucous membranes, lethargy, irritability) • Yellowing of the skin **Intervention** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Day 3 – 5: 3 – 5 wet, clear, pale yellow diapers/day[32] • Day 5 – 7: 4 – 6 wet, clear, pale yellow diapers/day[33] • Day 7 – 28: many wet diapers daily and pale yellow[34] **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >24 – 72 hr • Uric acid crystals may indicate dehydration after 72 hours • Urine concentrated • < 5 wet diapers/day **Intervention** • Refer to >12 – 24 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond

ELIMINATION – STOOL
Assess
• Normal stooling for baby's age
 	
Assess mother's/ family/supports understanding of newborn physiology and capacity to identify variances that may require further assessments
 	
Refer to:
• **Feeding**
• **Weight**
	Norm and Normal Variations
	• Active bowel sounds
	
	Parent Education/ Anticipatory Guidance
	• Refer to >12 – 72 hr
		Norm and Normal Variations
		• ≥1 meconium passed within 24 hours[35]
		
		Parent Education/ Anticipatory Guidance
		• Assess feeding/oral intake
		• Relationship between feeding and output-elimination is a component of feeding assessment
		• Encourage
		  ▪ Breastfeeding
		  ▪ Skin-to-skin
		  ▪ Hand expression of colosturm
		• Expected stool pattern – colour, consistency, amount, changes
		• Encourage intake of colostrum – acts like a laxative
		
		Formula Fed
		• As above except for information directly related to breastfeeding
			Norm and Normal Variations
			• Meconium & transitional stools
			• Day 2 – 3 ≥1 meconium or greenish brown[36]
			
			Parent Education/ Anticipatory Guidance
			• Refer to >12 – 24 hr
			• Changes in bowel pattern
			• Frequent effective feeding
				Norm and Normal Variations
				Breastfed
				• Day 3 – 5: 3 – 4 loose, yellow transitional stools
				• Day 5 – 7: 3 – 6 yellow or golden
				• Day 7 – 28: 5 – 10+ yellow[37]
				• Stools colours vary – may be yellow/ mustard or brown with mustard seed consistency or occasionally green (may reflect mothers diet)
				• Around 3 – 4 weeks of age individual bowel pattern (may go several days without a soft/ loose bowel movement)
				Watery, mustard color
				• Mild odour
				• May pass stool with each feed
				
				Formula fed
				• Formed
				• Pale yellow to light brown
				• Strong odour
				• May be dark green with iron fortified formula
				• Often 1 – 2 daily for first weeks
				• Around 3 – 4 weeks baby may have a bowel movement every 1 – 2 days
				
				Parent Education/ Anticipatory Guidance
				• Refer to >12 – 72 hr
				• Provide parents with BC Infant Stool Colour Card and review with them; advise them to check baby's stool colour every day for the first month after birth and contact the BC Infant Stool Colour Card Screening program if baby has abnormal coloured stools

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Health: Elimination – Stool

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
ELIMINATION – STOOL (***Continued***)	**Variance** • Abdominal distension • Absence of bowel sounds **Intervention** • Check if meconium passed at birth • Nursing Assessment • Refer to PHCP prn	**Variance** • No stools passed within 24 hours **Intervention** • Nursing Assessment • Reassess within 24 hrs if no stool passed • Refer to PHCP prn	**Variance** • ≤ 1 stools passed within 48 hr • Diarrhea • Green, foul smelling, mucousy stool **Intervention** • Nursing Assessment • Assess feeding and assist family in developing plan to monitor output, report ongoing variance • Refer to PHCP prn	**Variance** • ≤ 3 stools on day 4 in combination without obvious breast filling • Does not have 2 or more stools per day after 4 – 5 days of age[38] • Displaying signs of jaundice lasting longer than two weeks (yellowing of the baby's skin or eyes), with pale yellow, chalk white, or clay coloured stools • A jaundiced baby tends to have increased frequency of stools ▪ may be loose, greenish in colour and sometimes explosive • Diarrhea (very loose, foul smelling) • Constipation – rare in exclusively breastfed infants (stools dry, hard difficulty in passing) • Bloody stool **Intervention** • Refer to >24 – 72 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
VITAL SIGNS Assess: • Vital signs and include – history and risks • Frequency of assessment following organization's policy *Suggested frequency for vital signs:* • Within 15 minutes in the first hour of life and • At 1 and 2 hours following the first vital signs and if stable • At hour 6 • Once per shift until hospital discharge including ▪ Temperature ▪ Respirations • Rate • Respiratory effort ▪ Circulation • Heart rate • Heart sounds *Include:* • Colour • Tone ▪ SpO_2 if required • Then as required by nursing judgement and hospital policy	**Norm and Normal Variations** ***General*** Centrally pink and good tone ***Temperature*** • Axilla 36.5 – 37.4ºC • Use of toque until infant stabilization achieved[39] and skin-to-skin care ***Circulation*** • Heart rate: 100 – 160 • Femoral and brachial pulses palpated • SpO_2: ≤ 1 h ≥88% > 1 h >94% ***Respirations*** • Effortless 30 – 60/min • Clear sounds • May be irregular • Some mucus • Easy respirations when mouth closed • Sneezing common (<3 – 4 times/ interval) • May have slightly wet sounding lungs for the first 15 – 30 min and is improving and there is good colour, tone and normal heart rate **Parent Education/ Anticipatory Guidance** • Nursing – hands on physical assessment with parent(s) in attendance • Initial bath after baby has completed a stable transition period (universal precautions until bath) • Use of toque/head covering indoors not required after infant stabilization • Refer to >12 – 24 hr	**Norm and Normal Variations** • Presents with normal newborn examination and no major CNS concerns – is one of the criteria to indicate the infant is ready to move to care by parent[40] • Refer to POS **Parent Education/ Anticipatory Guidance** • How (including normal values) and when to assess temperature, respirations • How to clear mucous ▪ Prone, head lowered, and stroke back ▪ Avoiding the use of mechanical aids in nose E.g. cotton tipped applicators & bulb aspirators • Heat control in infants ▪ Skin-to-skin with blanket over infant and mother ▪ Loosely wrap baby with hands free – avoid swaddling ▪ Feeling back of neck to determine if baby is too warm • Bathing ▪ Including information such as hygiene, mouth care, bonding and engagement, reflexes, behaviours and feeding cues and physiological changes (sight, hearing) • Identifying changes in newborn vital signs if utero exposure to psychotropic drug exposure (Opioids, benzodiazepines, SSRIs, SNRIs).[41] S & S of disorganized infant, such as ▪ Metabolic/ vasomotor/ respiratory (T, HR, RR, weight, sneezing) ▪ CNS (cry, tremors, muscle tone, sucking, swallowing) ▪ GI (feeding, vomiting, stooling, excoriation) • Although codeine no longer recommended, if exposure to codeine in breast milk ▪ CNS depression – exhibited as not feeding well, not waking up to be fed, not gaining weight gain, limpness ▪ Baby should be examined by PHCP if mother shows symptoms of CNS depression[42] • When newborn ready for discharge perform global (physical and feeding) assessment[43] with parent • When to seek help from PHCP ▪ See variances POS ▪ Fever	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr • If mom on SSRIs/ SNRIs, ensure a follow-up appointment is booked for 3 – 5 days post discharge	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr

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Physiological Health: Vital Signs

Physiological Health: Vital Signs

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
VITAL SIGNS ***(Continued)*** Review: • Maternal pregnancy and labour & birth history for ▪ Use of SSRIs / SNRIs in late pregnancy[44] ▪ Group B Strep or ROM >18 hours – vital signs q4h[45] ▪ Fever during labour & birth • Maternal use of codeine postpartum[46] Assess mother's/ family/ supports understanding of newborn physiology and capacity to identify variances that may require further assessments **Refer to:** • **Chest** • **Skin (jaundice)**	**Variance** • Temperature instability • Heart murmur ▪ Persistent tachycardia >160 or bradychardia ≤ 100 bpm ▪ Weak/absent femoral or brachial pulses • Mucousy/noisy respirations that are not improving • Signs of respiratory distress ▪ Indrawing ▪ Grunting ▪ Nasal flaring • Apneic episodes >15 sec • Bradypnea <25 per minute • Tachypnea >60 per minute • Diaphoresis • Mottling • Poor colour ▪ Dusky ▪ Jaundice • Poor feeding • Decreased activity • For infants exposed to SSRIs/SNRIs during pregnancy, monitor SpO_2: ▪ at one hour of life ▪ every 4 hours x 24 hours ▪ at discharge **Intervention** • Nursing Assessment • Refer to PHCP prn	**Variance** • Refer to POS • Uterine exposure to SSRI/ SNRIs **Intervention** • Refer to POS	**Variance** • Refer to POS **Intervention** • Refer to POS	**Variance** • Refer to POS **Intervention** • Refer to POS

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Physiological Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
WEIGHT Assess: • Weigh baby naked on tummy on a warm blanket (anecdotal reports indicate infants startle and cry less – giving a more accurate weight – and less stressful) • Weight gain/loss for appropriate age • Signs of adequate intake Assess mother's/ family/supports understanding of newborn physiology and capacity to identify variances that may require further assessments **Refer to:** • **Vital Signs** • **Feeding** • **Behavior** • **Elimination** • **Skin** • **Postpartum Nursing Care Pathway: Breasts**	**Norm and Normal Variations** • Refer to >72 hours – 7 days and beyond • Normal birth weight for term infants is 2500 – 4000 gm • Weighing of newborn after completion of initial feeding or skin-to-skin (may be up to 2 hours) **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >12 – 24 hr **Intervention** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Refer to >72 hr – 7 days and beyond **Parent Education/ Anticipatory Guidance** • Weight is only one component of a newborn's wellbeing and the feeding assessment • Mother aware that hydration & elimination affect weight (intake and output) • Feeding indicators of adequate hydration • Normal expected weight loss to day 3 – 4 (especially with exclusive breastfeeding) • Normal expected weight gain after day 3 – 4 (especially with exclusive breastfeeding) • Discharge weight prn **Variance** • Newborn Conditions that may require daily weight • Gestational age <37weeks • SGA • Receiving phototherapy **Intervention** • Nursing assessment • Ongoing feeding assessment • Teaching and support • Refer to PHCP prn	**Norm and Normal Variations** • Refer to >72 hr – 7 days and beyond **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >12 – 24 hr • Excessive weight loss may be due to ▪ poor feeding (inadequate milk transfer), poor latch, poor suck, infrequent feeds ▪ low maternal milk production ▪ illness **Intervention** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Evidenced-base expected weight loss and when weight should start to be regained are not yet established[47] • Consensus that return to birth weight by about 2 weeks[48] • When milk is in about day 3 – 4 expect wt gain of 20 – 30 gms/day (about an ounce)[49] • Consistent weight gain of about 140 – 200 gm/wk (about 4 – 7 ounces) per week for the first 4 months[50] **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr • Signs of adequate hydration • After stability is established, the newborn is weighed around 3 – 4 days and at around 7 – 10 days (this latter weighing may be done during the follow-up by the PHCP assessment within one week of discharge)[51,52] **Variance** • Refer to >24 – 72 hr • Weight loss that continues after day 3 – 4 warrants close assessment of the feeding situation[53] • No weight gain by day 5 • Has not returned to birth weight by about 2 weeks **Intervention** • Refer to >24 – 72 hr • Assess feeding and develop a feeding plan with mother • Have a follow-up plan • Depending on the variance, may need to initiate breast expression/ pumping q 3 – 4 hours and/ or supplemental feedings • A combination of hand expression, followed by pumping with breast compression while pumping supports the production of milk[54] • Refer to appropriate PHCP prn

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Behavioral Assessment

Behavioral Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
BEHAVIOR Assess Infant's: • Behavior states • Behavior cues • Response to consoling Assess mother's/ family/supports • Understanding of normal newborn behavior • Response to newborn cues/ needs • Capacity to identify variances that may require further assessments **Refer to:** • **Vital Signs** • **Crying** • **Elimination** • **Feeding** • **Head**	**Norm and Normal Variations** • Alert for the 1st 1 – 2 hours after birth • Sleeps much of the remaining POS (transition to extrauterine life) • May be sleepy or unsettled due to delivery • Responds to consoling efforts • Cry – strong and robust **Parent Education/ Anticipatory Guidance** • Expect baby to become more wakeful after POS • Feeding cues-refer to Norm and Normal Variations >12 – 24 hr • "Back to Sleep" • Responds to consoling	**Norm and Normal Variations** • Demonstrates ▪ Early feeding cues: infant wiggling, moving arms and legs, mouthing, rooting, fingers or hands to mouth[55] ▪ Later feeding cues: fussing, squeaky noises, restlessness, progressing to soft intermittent crying[56] ▪ Organized state movement from quiet alert to crying ▪ Minimal crying but is strong and robust (if occurs) ▪ Responds to consoling efforts **Parent Education/ Anticipatory Guidance** • Refer to POS • Review/discuss ▪ *Behavior states* • Deep sleep – if aroused will not feed • Quiet sleep • Drowsy • Quiet alert: optimal state for feeding and infant-parent interactions • Active alert: time for feeding • Crying: late feeding cue • Behavioral feeding cues indicating readiness to feed (refer to Norm and Normal Variations >12 – 24 hr, above) ▪ *Satiety Cues* • Sucking ceases • Muscles relax • Infant sleeps/removes self from breast[57] • Review/discuss infant attachment behavior – any behavior infant uses to seek and maintain contact with and elicit a response from mother/caregiver	**Norm and Normal Variations** • Refer to >12 – 24 hr • Wakes 8 or more times in 24 hours for feeding **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Refer to >24 – 72 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Behavioral Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
BEHAVIOR ***(Continued)***	**Variance** • Weak or irritable high pitched cry • Does not respond to consoling efforts • In utero exposure to SSRIs/SNRIs • Exposure to codeine in breastmilk • Exposure to substances **Intervention** • Complete a full newborn assessment • Refer to appropriate HCP prn • Mother/caregiver education re effect on newborn and follow-up care	**Variance** • Refer to POS • Arching **Intervention** • Refer to POS • Refer to Parent Education/Anticipatory Guidance • Assess factors which may influence behaviors ▪ Environmental stimuli ▪ Correct sleeping position ▪ Gestational age ▪ Medicated labor ▪ Pregnancy substance use • Refer to appropriate PHCP	**Variance** • Refer to 0 - 24 hr **Intervention** • Refer to 0 – 24 hr	**Variance** • Refer to 0 - 24 hr **Intervention** • Refer to 0 – 24 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Behavioral Assessment: Crying

Behavioral Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
CRYING Assess: • Crying patterns • Quality • Duration • Fussy periods • Parental • Interpretation of crying • Coping strategies Assess: mother's, family, supports understanding of normal newborn crying and her capacity to • Use consoling techniques • Identify variances that require further assessments **Refer to:** • **Behavior** • **Feeding** • **Maternal Postpartum Nursing Care Pathway: Bonding & Attachment**	**Norm and Normal Variations** • Minimal crying but is strong, robust • Responds to consoling – includes feeding **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Review infant behavior states • Breastfeeding/skin-to-skin during painful procedures • Crying ▪ Is a late feeding cue ▪ Assist parents in developing soothing techniques • Soothing and consoling techniques to establish trust/bonding[60] ▪ Skin-to-skin ▪ Feeding ▪ Showing mother's face ▪ Talking in a steady, soft voice ▪ Holding arms close to body ▪ Holding/carrying ▪ Movement: swaying, rocking, walking • Discuss ▪ That infants cry ▪ Importance of responding to infant crying, but that infant may continue to cry despite soothing efforts	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Refer to POS **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr • Crying is a late signal from infant • Family strategies to respond to crying • Review & discuss amount of crying ▪ *Period of PURPLE Crying* resource ▪ Begins at about 2 weeks ▪ Continues until about 3-4 months[61] • Discuss normal feeling of frustration and potential anger when infant inconsolable • If consoling techniques do not work and parents feel frustrated ensure baby is in a safe environment and leave the room • Infant may continue to cry despite soothing efforts (is not related to parenting capability) • Healthy infants can look like they are in pain when crying – even when they are not • Care for the caregivers ▪ Breaks ▪ Support system(s) ▪ Exercise • Web reference for parents on prevention of shaken baby syndrome/ infant crying: **www.purplecrying.info**

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Behavioral Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond

CRYING ***(Continued)***	**Variance**
	• Infant does not respond to consoling techniques
	• Unusual, high-pitched crying (neurological)
	• Weak irritable cry
	• No cry (along with other symptoms may reflect illness, e.g. sepsis)
	• Inappropriate parental/caregiver response to baby's crying
	  ▪ Not responding to infant crying
	  ▪ Making negative comments about infant's behavior
	
	Intervention
	• Refer to Parent Education/ Anticipatory Guidance >12 – 24 hr
	• Nursing Assessment
	• Refer to appropriate PHCP prn
		Parent Education/ Anticipatory Guidance (cont'd)
		• Review The Period of PURPLE Crying resource
		www.purplecrying.info
		
		Review signs that indicate that baby may be ill
		• Fever
		• Vomiting
		• Infant states
		
		Variance
		• Refer to POS
		
		Intervention
		• Refer to POS
			Variance
			• Refer to POS
			
			Intervention
			• Refer to POS
				Variance
				• Inconsolable constant crying
				• Refer to POS
				
				Intervention
				• Refer to POS
				• Rule out medical concerns – ensure baby is thriving, i.e. not crying due to hunger, medical concern
				• Discuss potential scenarios related to difficulty in consoling infant
				• Discuss choosing appropriate support people
				
				Variance – Baby at risk for harm
				• Shaking an infant
				
				Intervention – Baby at risk for harm
				• Nursing Assessment
				• Refer to appropriate PHCP prn
				• Encourage use of family/support network for support
				• Consider consulting social services/ child protection services

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Infant Feeding: Breastfeeding

Infant Feeding Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond

BREASTFEEDING
Assess feeding effectiveness
• Active feeding
• Positioning
• Latch
• Hydration
• Frequency
• Duration
• Sucking
• Swallowing
 	
Assess mother's ability to initiate & complete feeds
• Observe
  ▪ Feeding
  ▪ Mother's response to feeding
  ▪ If < 48h old to have 2 successful feeds documented before discharge[62,63]
 	
Refer to:
• **Elimination**
• **Weight**
• **Skin**
• **Behavior**
• **Postpartum Nursing Care Pathway: Breasts and Infant Feeding**
	Norm and Normal Variations
	• Skin-to-skin immediately after birth
	• Offer breast when he/she shows signs of readiness (usually with in first 1 – 2 hours)
	• Baby latchs and begins to suck
	• Actively feeds
	• Tolerates feeds
	• After initial feed baby may not be interested in further feeding during this period.
	• May have small emesis of mucous or undigested milk following feeds (10 mls or less)
	
	Parent Education/ Anticipatory Guidance
	• The benefits of skin-to-skin during the establishment of breastfeeding
		Norm and Normal Variations
		• Feeds ≥ 5 feedings in first 24 hours and may cluster feed[64]
		• Variable frequency and duration – different for each mother-infant dyad[65]
		• Wakes to complete feeds
		
		Parent Education/ Anticipatory Guidance
		• Refer to POS
		• Assist mother to watch/look for feeding cues
		  ▪ Wiggling arms and legs
		  ▪ Hands to mouth
		  ▪ Rooting
		  ▪ Mouthing[66]
		• Crying is a late feeding cue[67]
		• Infants aroused from deep sleep will not feed[68]
		• Support early & frequent breast feeding (provides antibodies)
		• Normal newborns eat 15±11gms over the first 24 hours
		  ▪ Stomach capacity and amount of each individual feeding are unknown[69]
		• Duration varies for each feeding and mother-infant dyad (may last ~20 – 50 min) [70]
		• Discuss that a satiated infant is relaxed, sleepy & disengages from breast
		• Burping positions
		• Elimination and hydration status should be components of the feeding assessment[71]
		
		PSBC (2013) Breastfeeding Healthy Term Infants
		www.healthlinkbc.ca/kbase/topic/special/hw91687/sec1.htm
			Norm and Normal Variations
			• Feeds 8 or more times/24 hours and frequently during the night initially
			• Shows signs of adequate hydration
			• Contented and satiated after feeding
			
			Parent Education/ Anticipatory Guidance
			• Refer to >12 – 24 hr
			• Amount eaten at each individual feeding increases as milk supply increases
			• Aware that frequent feedings assists in milk production
			• Breastfeeding throughout night – stimulates milk production, relieves breast fullness discomfort, helps prevent engorgement[72]
			• Signs of effective feeding
			  ▪ 8 or more feedings after the first 24 hours
			  ▪ Hear a "ca" sound during feeding
			  ▪ Coordinated suck and swallow
			  ▪ Refer to elimination re numbers of wet diapers and bowel movements
			  ▪ Returns to birthweight by about two weeks
			  ▪ Evidence of milk transfer
				Norm and Normal Variations
				• Refer to > 24 – 72 hours
				• Frequency of feeds may decrease once milk supply established
				• Baby gaining weight regularly
				• Content after most feedings
				• Pattern of breast usage may change (e.g. one or both breasts per feed)
				• Changes in feeding patterns where infants feeds more frequently for several days (commonly called growth spurts)

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Infant Feeding Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
BREASTFEEDING ***(Continued)*** Assess mother's/ family/supports understanding of • Breastfeeding • Need for vitamin supplement Assess mother's capacity to identify variances that may require further assessments and/ or intervention	**Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr • Importance of breastfeeding • Effective positioning • Active feeding • Effective latch • Positioning • Frequency and duration • Newborns who are breastfed or receiving breastmilk should receive a daily vitamin D supplement of 10 µg (400 IU) from birth to at least 12 months of age. • Hydration • Show all mothers how to hand express[73] (especially if newborn is LGA, SGA or risk for hypoglycemia – infants of diabetic mothers) **www.hc-sc.gc.ca/fn-an/nutrition/infant-nourisson/index-eng.php**			**Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr • Resources • PHN • Community Health Services • Support Groups • Exclusive breast feeding for the first six months[74] • Introduction of complementary solids recommended at or around six months with continued breastfeeding for up to two years and beyond **www.healthlinkbc.ca/healthfiles/hfile69c.stm**

Active Feeding – Breast – several bursts of sustained sucking at both breasts each feeding including effective positioning, latch and evidence of milk transfer

Positioning – chest to chest, skin-to-skin, nipple to nose

Effective Latch – Chest to chest, nose to nipple, wide open mouth, flanged lips, no dimpling of cheeks, may hear audible swallow, rhythmic sucking, baby doesn't easily slide off the breast, no nipple damage or distortion after feed

Adequate hydration – moist mucous membranes, elastic and responsive skin turgor

Evidence of milk transfer – audible swallowing, rhythmical sucking, adequate output (refer to Elimination) appropriate weight loss for age (refer to Weight)

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Infant Feeding: Breastfeeding

Infant Feeding Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
BREASTFEEDING ***(Continued)***	**Variance** • Infant shows no signs of interest in feeding • Poor/absent latch • Does not latch: prior to initial latch may lick, nuzzle or root for nipple • Poor feeding position • Uncoordinated suck/swallow/ breathing pattern • Coughing, choking • Respiratory distress with feeding • Does not settle following feeds • Congenital anomalies (e.g. tongue tie, cleft palate) • Mother chooses to provide additional milk when no medical indications for supplementation	**Variance** • Refer to POS • Dimpling of cheeks • Smacking sounds while feeding • Not feeding effectively **Parent Education/ Anticipatory Guidance** • 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.	**Variance** • Refer to 0 – 24 hr **Intervention** • Refer to 0 – 24 hr **Parent Education/ Anticipatory Guidance** **Vitamin D Supplement: Norm and Normal Variations** • Cases of Vitamin D deficiency still occur in Canada among infants who do no receive supplements • Vitamin D is an essential nutrient that helps the body use calcium and phosphorous to build and maintain strong bones and teeth **www.hc-sc.gc.ca/fn-an/nutrition/infant-nourisson/recom/index-eng.php** • For advice about vitamin D for infants and young children who are not breastfed or receiving breastmilk see: *In practice: Talking to families about infant nutrition.* **www.hc-sc.gc.ca/fn-an/nutrition/infant-nourisson/recom/index-eng.php#a12** • Newborns who are not given any breastmilk and are receiving commercial formula do not need a vitamin D supplement as the formula contains vitamin D.	**Variance** • Refer to 0 – 72 hr **Intervention** • Refer to 0 – 72 hr **Parent Education/ Anticipatory Guidance** • 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.

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Infant Feeding Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond
BREASTFEEDING ***(Continued)***	**Intervention** • Assess reason for variance • Assess feeding to reassure mother that infant's needs are met by breastfeeding • Ensure that concerns about feeding are addressed • Provide sufficient information to ensure that the mother is aware of the effects of unnecessary supplementation on mother and baby • Provide teaching as needed. • Follow-up in 24 – 24 hr • Refer to appropriate HCP prn	**Intervention** • Refer to POS/Parent Education/ Anticipatory Guidance >12 – 24 hr • Nursing Assessment to *include:* ▪ Position and Latch ▪ Encourage skin-to-skin ▪ Support the upper back and shoulders, cradling the neck/base of the skull, no pressure on baby's head ▪ Skin-to-skin or light clothing – baby is not wrapped ▪ Tummy to tummy with baby's bottom tucked close to mom ▪ If breast large, support breast (fingers well back from areola) ▪ Touch baby's lips with nipple ▪ Wait until mouth open wide ▪ Aim nipple towards the roof of infant's mouth – the bottom lip is well back from the base of the nipple • Waking/latching techniques[80] • Breast stimulation ▪ Refer to Postpartum Nursing Care Pathway • Refer to appropriate PHCP	**Variance** • Refer to 0 – 24 hr • Intervention • Refer to 0 – 24 hr • May require feeding alternatives (by mother's informed decision) if there is evidence that the baby needs more milk than he/she is getting (e.g. by spoon, cup, dropper, bottle) • Feeding plan in place, such as ▪ Improve latch & position ▪ Increase frequency of feeding ▪ Stimulate baby ▪ Hand express after feeding ▪ Express/pump q 2 – 3 hr ▪ Express and top up ▪ Top up with_____ • Refer to appropriate PHCP **Variance – Ineffective feeding** • Baby not getting enough milk based on clinical assessment **Intervention – Ineffective feeding** • Nursing Assessment • Assist with latch • Hand expression with breast compression • Assess for jaundice • Techniques for waking sleepy baby (stimulating baby – skin-to-skin, not over dressing) • Provide EBM if infant unable to effectively transfer milk • Medically indicated supplementation: use EBM, donor milk or formula (start with small amounts) • Refer to PHCP prn	**Variance** • Refer to 0 – 72 hr **Intervention** • Refer to 0 – 72 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Infant Feeding: Breast Milk Substitute

Infant Feeding Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72hours	>72 hours – 7 days and beyond
BREAST MILK SUBSTITUTE FEEDING (FORMULA) • Provide information as necessary for informed decision making and understanding the difficulty of reversing the decision to formula feed • Explore feeding options-address mother's specific concerns about infant feeding Assess • Coordinated suck and swallow (active feeding) • Hydration • Frequency • Duration • Able to consume appropriate volume for age/ weight	**Norm and Normal Variations** • Skin-to-skin for all babies regardless of feeding method • Tolerates feed **Parent Education/ Anticipatory Guidance** • Information about the importance and maternal and infant benefits of breast milk and breastfeeding • Address maternal specific concerns regarding feeding issues • Refer to >12 – 24 hr	**Norm and Normal Variations** • Every 2 – 4 hr • Cue based feeding • Signs of fullness **Parent Education/ Anticipatory Guidance – Formula Fed Infants** • Choice of formula (ready-to-feed and concentrated are sterile until opened; powdered formula is not sterile) • Equipment ▪ Equipment needed ▪ Cleaning of equipment • Preparation, storage and warming formula (refer to BC Health File) • Safety at room temperature • Positioning: ▪ Hold baby close during feeding ▪ Have baby's head higher than body, supporting baby's head ▪ Hold bottle so most of the artificial nipple is in baby's mouth and formula fills the nipple ▪ Never prop the bottle • Encourage mother to observe baby to recognize early feeding cues ▪ Infant wriggling and moving arms and legs ▪ Fingers or hand to mouth ▪ Rooting ▪ Mouthing[81, 82] • Crying is a late feeding cue[83] • Infants aroused from deep sleep will not feed[84] • Follow baby's cues re amount to give – newborns may drink small amounts at a feeding, as little as 30 ml at a feeding • Burping positions • Stop feeding when baby shows signs of fullness – closing mouth, turning away, pushing away, falling asleep • Not to coax to finish bottle **Resources: BC Health Files** • **Formula Feeding Your Baby: Getting Started** www.healthlinkbc.ca/healthfiles/hfile69a.stm • **Formula Feeding Your Baby: Safely Preparing and Storing Formula** www.healthlinkbc.ca/healthfiles/hfile69b.stm	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** *** If no variances** • Refer to >12 – 24 hrs • For lactation suppression – Refer to **Postpartum Nursing Care Pathway: Breasts**	**Norm and Normal Variations** • Baby is content between feedings • Formula prepared safely **Parent Education/ Anticipatory Guidance** • Formula feeding your baby **www.healthlinkbc.ca/healthfiles** search for Healthfile #69a and 69b • Refer to >12 – 24 hrs • Cue based feeding • Signs of fullness • 3 – 7 days ▪ 6 – 10 feedings per 24hrs ▪ 60 – 90 ml per feed • 1 – 2 weeks ▪ 6 – 8 feedings per 24 hrs ▪ 60 – 90 ml per feed • 3 weeks – 2 months ▪ 5 – 7 feedings per 24 hrs ▪ 120 – 150 ml per feed ▪ Introduction of complementary solids at about 6 months

Infant Feeding Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond

BREAST MILK SUBSTITUTE (FORMULA) FEEDING ***(Continued)***
 	
Assess mother's/ family/supports
• Awareness of the importance of breast milk and breast feeding
• Understanding of normal newborn feeding
• Knowledge of
  ▪ Appropriate formula
  ▪ Safe formula preparation
  ▪ Safe formula storage
  ▪ Cost
  ▪ Potential health concerns with formula
• Ability to initiate & complete feeds
• Observe
  ▪ Newborn feeding
  ▪ Mother's response to feeding
Refer to:
• **Elimination**
• **Weight**
• **Skin**
• **Behavior**
• **Postpartum Nursing Care Pathway: Infant Feeding**
	Variance
	• Babies at high risk for allergies
	
	Intervention
	• Correct hypo-allergenic formula (e.g. protein hydrolysate)
	
	Variance
	• Babies of vegan parents
	
	Intervention
	• May use soy based formula
		Variance
		• Inappropriate formula preparation or type
		
		www.healthlinkbc.ca/healthfiles/hfile69b.stm
		
		Vomiting or frequent large regurgitation
		• Fussy
		• Irritable, crying
		• Arching
		• Gassy
		• Loose stools
		
		Intervention
		• Nursing assessment
		• Assessing feeding and burping techniques
		• Assessing hunger cues vs satiated cues to avoid overfeeding
		• Inquire food intolerance/allergies in family
		• Follow-up assessment in 24 – 48 hr
		• Refer to nutritionist/ PHCP/other resources prn
			Variance
			• Refer to >0 – 24 hr
			
			Intervention
			• Refer to >0 – 24 hr
				Variance
				• Refer to 0 – 24 hr
				• Inappropriate formula
				• Incorrect preparation and storage
				• Overfeeding
				
				Intervention
				• Refer to 0 – 24 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Health Follow-Up Assessment

Health Follow-Up Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hours – 7 days and beyond

HEALTH FOLLOW-UP
 	
Baby to receive Vitamin K
 	
Assess mother's/ family/supports
• Understanding of appropriate health care follow-up
• Capacity to
  ▪ Identify variances that may require further assessments
  ▪ Access Health Care
 	
Follow agency policy for identification of high risk clients
E.g. Consider use of Nursing Priority Screening Tool (Parkyn, BC adaptation 2010)
	Norm and Normal Variations
	• Vitamin K given IM based on birth weight[85]
	• Administer after completion of initial feeding (within 6 hr of birth) [86] while skin-to-skin
	
	Parent Education/ Anticipatory Guidance
	• Vitamin K administration – prevention of hemorrhagic disease of the newborn
	
	Variance
	• Parents refuse IM injection
	
	Intervention
	• Oral dose Vitamin K is 2 mg at time of first feeding, repeated at 2 – 4 weeks and at 6 – 8 weeks
	
	Variance
	• Refer to >12 – 24 hr
	
	Intervention
	• Refer to >12 – 24 hr
		Norm and Normal Variations
		• Parents/caregiver have a plan for follow-up with PHCP
		• Newborn ready to move to be cared for by parent (caregiver)
		  ▪ Normal newborn exam
		  ▪ Caregiver recognition of normal newborn changes and informs PHCP of abnormal findings
		  ▪ Newborn feedings are successfully initiated and completed
		  ▪ Parent/caregiver response to newborn cues and needs
		  ▪ Support system in place
		
		Parent Education/Anticipatory Guidance
		• Parents/caregiver aware when discharged <48 hr after birth: arrangements made for evaluation (as per clinical care paths for assessment and care) within 48 hours of discharge by a Health Care Professional[87,88, 89]
		• Parents aware of the need for a newborn physical and feeding assessment around 3 – 4 days of life[90]
		• Growth and development of newborn
		www.healthlinkbc.ca/kbase/topic/special/hw42229/sec1.htm
		
		Variance
		• Parents do not have a PHCP or a plan for follow-up with PHCP
		• Parents do not have knowledge or capacity to identify variances in newborn
		
		Intervention
		• Nursing assessment
		• Identify barriers and support family with solutions
		• Alternative medical/ health care follow-up
		• Consult social workers/services
		• Ministry of Children and Family Development **www.gov.bc.ca/mcf/**
		• Childcare resources and referrals **www.ccrr.bc.ca/**
			Norm and Normal Variations
			• Refer to 0 – 24 hr
			
			Parent Education/ Anticipatory Guidance
			• Aware of need for a hands on assessment at 3 – 4 days and within 7 – 10 days[91,92, 93]
			• Need for further follow-up appointment with PHCP within first 6 weeks of newborn's life
			
			Variance
			• Refer to 0 – 24 hr
			
			Intervention
			• Refer to 0 – 24 hr
				Norm and Normal Variations
				• Refer to 0 – 24 hr
				
				Parent Education/ Anticipatory Guidance
				• Refer to 0 – 72 hr
				
				Variance
				• Refer to 0 – 24 hr
				
				Intervention
				• Refer to 0 – 24 hr

Health Follow-Up Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hr – 7 days and beyond
IMMUNIZATION AND COMMUNICABLE DISEASES Assess mother's/ family/supports understanding of: • Immunization (including informed consent) • Child Health Passport • Hepatitis B protocols prn • Hepatitis C protocols prn • HIV protocols prn • Varicella fetal / infant exposure Assess mother's capacity to identify variances that may require further assessments **Refer to:** • **Postpartum Nursing Care Pathway: Communicable Diseases**	**Norm and Normal Variations** • Refer to >12 – 24 hr • No exposure to Hepatitis B, Hepatitis C or HIV **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >72 hr – 7 days and beyond **Intervention** • Refer to >72 hr – 7 days and beyond **Variance – *Hep B Exposure*** • Fetal exposure ▪ Mother is HBsAg (Hepatitis B Surface Antigen) positive ▪ Mother has risk factors for Hepatitis infection (IV drug user, sex worker/status unknown) ▪ Primary care giver or household contact acute or chronic Hepatitis B infection ▪ Primary care giver has risk factors for Hepatitis B infection (such as IV drug user, sex worker, men who have sex with men) and infectious state unknown ▪ Household member(s) from an area where Hepatitis is endemic **Intervention – Hep B Exposure** • Administer Hep.B immunization and HBIG as per BCCDC protocol	**Norm and Normal Variations** • Aware of appropriate immunizations and schedules **Parent Education / Anticipatory Guidance** • Review ▪ Benefits of immunization **www.caringforkids.cps.ca/immunization/index.htm** ▪ Diseases for which immunizations available ▪ Schedule ▪ Side effects ▪ Where to access immunizations ▪ Child Health Passport **www.healthlinkbc.ca/kbase/topic/special/immun/sec1.htm** **Hepatitis B** • Disease transmission **www.healthlinkbc.ca/kbase/topic/detail/drug/zb1228/detail.htm** **www.bccdc.ca/NR/rdonlyres/328189F4-2840-44A1-9D13-D5AB9775B644/0/Epid_GF_HepBControl_June2004.pdf** **www.phac-aspc.gc.ca/hcai-iamss/bbp-pts/hepatitis/hep_b-eng.php** **www.who.int/csr/disease/hepatitis/whocdscsrlyo20022/en/index.html**	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to POS and >72 hr – 7 days and beyond **Intervention** • Refer to POS and >72 hr – 7 days and beyond	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to 0 – 24 hr **Intervention** • Refer to 0 – 24 hr **Variance – *No immunizations*** • Does not plan to have baby immunized **Intervention – *No immunizations*** • Explore reasons • Provide information prn • Refer to appropriate PHCP prn

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Health Follow-Up Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hr – 7 days and beyond
IMMUNIZATION AND COMMUNICABLE DISEASES (Continued)	**Variance- Hep C Exposure** • Fetal exposure to Hepatitis C **Intervention – Hep C Exposure** • Support breastfeeding (breastfeeding not contraindicated[94,95] • If nipples are cracked or bleeding - discard breast milk during this time as HCV is transmitted through blood • HCV is a blood borne pathogen and is not transmitted by urine or stools **Variance – HIV Exposure** • Fetal exposure to HIV **Intervention - HIV Exposure** • Breastfeeding contraindicated • Follow HIV Protocol: refer to >12 – 24 hr Parent Education/ Anticipatory Guidance **Variance – Varicella** • Fetal exposure to Varicella • Newborn exposure to Varicella **Intervention** • Follow Varicella Protocol – refer to > 12 – 24 hr Parent Education / Anticipatory Guidance	**Parent Education/ Anticipatory Guidance** **Hepatitis C** • Recommend: infant to have a blood test (for PCR/RNA) at 6 weeks and, unless initial test positive, antibody test at 12 months.[96] **www.cps.ca/english/statements/ID/id08-05.htmSOGC Guideline** **www.sogc.org/guidelines/public/96E-CPG-October2000.pdf** **HIV** • BCPHP Guideline **www.bcphp.ca//sites/bcrcp/files/Guidelines/Obstetrics/HIVJuly2003Final.pdf** • Oak Tree Clinic **www.bcwomens.ca/Services/HealthServices/OakTreeClinic/default.htm** **Varicella** • BCCDC Guideline **www.bccdc.ca/NR/rdonlyres/0065F4AD-0EEC-430F-B1B5-9634115528D4/0/Epid_GF_VaricellaZoster_July04.pdf**		

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Health Follow-Up Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 48 hours	>72 hr – 7 days and beyond
SAFETY AND INJURY PREVENTION Assess mother's/ family/ supports knowledge of common safety risks and ability to access support when needed **Refer to:** • **Postpartum Nursing Care Pathway: Lifestyle – Tobacco Use**	**Norm and Normal Variations** Newborn identified as per organization's policy • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >12 – 24 hr **Intervention** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Parents able to provide a safe environment for newborn **Parent Education/ Anticipatory Guidance** • SIDS prevention /Safe Sleep environment[97] ▪ Supine (back lying) position for sleep ▪ Safe sleeping environment: sleep surfaces, well fitting, firm mattress, bottom sheet firmly tucked in, blanket tucked in at the bottom, avoid pillow, toys, soft objects, bumper pads in crib ▪ Smoke free environment – second hand and third hand (parent/caregiver/other persons handling infant with smoke on clothing and skin after smoking, smoke lingering in a car)[98] ▪ Sleeping in close proximity in the same room (on a separate safe sleep surface) for the first six months: **www.perinatalservicesbc.ca**[99] • Hot liquid burns ▪ Keep hot adult beverages away from infant ▪ Adjust hot water temperature to prevent scalds during bathing – below 49°C • Shaken Baby Syndrome ▪ Period of PURPLE Crying resources: **www.purplecrying.info** • Supporting head and neck • Pets, siblings • Safety of baby products such as ▪ Car seat, crib, stroller, change table, soothers, powders, wipes • Community resources **Variance** • Parents unable to provide a safe environment for newborn **Intervention** • Nursing assessment • Identify barriers and support family with solutions ▪ Alternative medical/ health care follow-up ▪ Consult social workers/services ▪ Ministry of Children and Family Development: **www.gov.bc.ca/mcf/** ▪ Childcare resource and referral: **www.ccrr.bc.ca/**	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >12 – 24 hr **Intervention** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr • Need to reassess safety risks as infant's development changes (e.g. change table) • Encourage to read safety labels and warranties • Refer to *Baby's Best Chance* *Toddler's First Steps* *Safe Start* *Health Files* **Variance** • Refer to >12 – 24 hr **Intervention** • Refer to >12 – 24 hr

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Health Follow-Up: Safety and Injury Prevention

Screening/Other: Newborn Blood Spot Screening

Screening Assessment	0 - 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hr – 7 days and beyond
NEWBORN BLOOD SPOT SCREENING Assess mother's/ family/supports understanding of normal newborn screening and capacity to follow-up on variances that require further assessments BC's Newborn Screening Program screens for 22 disorders.[100]	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >12 – 24 hr **Intervention** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Newborns screened between 24 and 48 or prior to hospital discharge. If not completed during this timeframe, collection should be done no later than 7 days • Some Health Authorities have early home follow-up programs in place where staff can collect blood spot specimen in the home setting • For home births Registered Midwives will collect the specimens **Parent Education/ Anticipatory Guidance** • Parent adequately informed • PSBC Neonatal Guideline 9 Information Sheet • Newborn screening for HCP and families **www.newbornscreeningbc.ca** • Healthlink Newborn Screening Test **www.healthlinkbc.ca/healthfiles/hfile67.stm#E46E4** **Variance – Discharge before 24 hours of age** • Discharge less than 24 hours or transfer to another health care facility before 24 hours of age **Intervention – Discharge before 24 hours of age** • Specimen collected prior to discharge. The NB Screening Laboratory at BCCH will request, via the baby's primary care provider need for a repeat sample to be collected by 2 weeks (14 days) of age ▪ Rationale: The first blood screen will identify over 80% of disorders and will help prevent life threatening events The second screen optimizes detection of PKU, CF and Hcy which are time sensitive and cannot be reliably detected until ≥ 24 hours after birth[101] **Variance – Refusal / Deferral** • Parental informed refusal or request for deferral **Intervention – Refusal / Deferral** • Discuss & address questions • Parent(s) signs Informed Refusal or Informed Deferral Form also signed by PHCP (one copy on infant chart, one copy to PHCP)	**Norm and Normal Variations** • Refer to >12 – 24h **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24h **Variance** • Refer to >12 – 24h **Intervention** • Refer to >12 – 24h	**Norm and Normal Variations** • Refer to >12 – 24h **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24h **Variance** • Refer to >12 – 24h **Intervention** • Refer to >12 – 24h

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Screening Assessment	0 – 12 hours Period of Stability (POS)	>12 – 24 hours	>24 – 72 hours	>72 hr – 7 days and beyond
HEARING SCREENING Nursing assessment and follow-up not required. Newborn Hearing Screening is carried out by Hearing Program staff Screening Program staff will assess mother's/ family/ supports understanding of a normal newborn hearing screening assessment and capacity to follow-up variances requiring further assessments	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >12 – 24 hr **Intervention** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Newborn Hearing Screening completed by Hearing Screening Program (in smaller facilities screening of infants done in the community) • PSBC Newborn Record Completed by newborn screening staff **Parent Education/ Anticipatory Guidance** • Newborn Hearing Screen **www.phsa.ca/AgenciesServices/Services/BCEarlyHearingPrgs/ForFam/NewbornHearingScreening/default.htm** **Brochures** • **www.phsa.ca/AgenciesServices/Services/BCEarlyHearingPrgs/ForFam/Resources/Brochures.htm** **Variance** • Passed with risk factors for delayed onset • Newborn Hearing Screening not completed • Parental Refusal **Intervention** • No intervention required by nursing • Newborn Hearing Screening staff will: ▪ Discuss & address questions ▪ Refer to public health unit for hearing screening if missed in hospital ▪ Have parent(s) sign Informed Refusal ▪ Arrange follow-up at community level prn	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >12 – 24 hr **Intervention** • Refer to >12 – 24 hr	**Norm and Normal Variations** • Refer to >12 – 24 hr **Parent Education/ Anticipatory Guidance** • Refer to >12 – 24 hr **Variance** • Refer to >12 – 24 hr **Intervention** • Refer to >12 – 24 hr
BILIARY ATRESIA Assess mother's/ family/ supports understanding of the BC Infant Stool Colour card and capacity to identify variances in stool colour				**Variance** • Refer to Elimination - Stool section **Intervention** • Refer to Elimination - Stool section

Refer to: Healthy Families BC Website – **www.healthyfamiliesbc.ca/parenting**

Glossary of Abbreviations

BCCH	British Columbia Children's Hospital
Bpm	Beats per minute
BIIP	Behavioral Indicators of Infant Pain
CF	Cystic fibrosis
Cm	Centimetres
CNS	Central Nervous System
E.g.	For example
EBM	Expressed Breast milk
GI	Gastrointestinal
Gm	Gram(s)
>	Greater than
≥	Greater than or equal to
HBIG	Hepatitis B Immune Globulin
Hcy	Homocystinuria
HR	Heart Rate
Hr	Hours
i.e.	That is
IV	Intravenous
LGA	Large for Gestational Age
<	Less than or equal to
Min	Minute
Ml	Millilitre(s)
Mm	Millimetres
NICU	Neonatal Intensive Care Unit
POS	Period of Stability
PHCP	Primary Health Care Provider
PCR/**RNA**	The best approach to confirm the diagnosis of hepatitis C is to test for HCV RNA (Ribonucleic acid) using a sensitive assay such as polymerase chain reaction (PCR)
PKU	Phenylketonuria
Prn	As needed
PSBC	Perinatal Services BC
RR	Respiratory Rate
ROM	Rupture of Membranes
SGA	Small for Gestational Age
SSRI	Selective Serotonin Reuptake Inhibitors
SNRI	Selective Norepenephrine Reuptake Inhibitors
SIDS	Sudden Infant Death Syndrome
S&S	Signs and Symptoms
T	Temperature
Vs	Versus
WHO	World Health Organization

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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.