

***BRITISH COLUMBIA
NEWBORN CARE PATH***

***OUTCOMES, TEACHING &
INTERVENTIONS***

*British Columbia Reproductive Care Program
January 2001*

NEWBORN CARE PATH OUTCOMES, TEACHING & INTERVENTIONS

The following care pathway addresses the norms and family teaching for newborns. Where variances are noted, some common causes and interventions are indicated.

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Cry</p> <p><i>Assess:</i></p> <p><i>-crying patterns</i></p> <p><i>eg: quality, duration + fussy periods</i></p> <p><i>- parental interpretation</i></p> <p><i>of crying and coping strategies.</i></p>	<p><u>norm:</u></p> <ul style="list-style-type: none"> - strong, robust - responds to consoling - parents display appropriate consoling techniques <p><u>teaching:</u></p> <ul style="list-style-type: none"> - crying is normal - discuss reasons that infants cry - discuss the importance of responding to infant crying - discuss signs that the baby is unwell eg: constant, inconsolable crying, fever, vomiting - teach re: infant states (see Behavior) - crying is a late feeding cue - teach/role model consoling techniques: showing face to infant, talking to infant in a steady, soft voice, holding both infant's arms close to body, swaddling, holding, rocking, feeding - baby's crying assists parents in developing parenting skills - discuss Shaken Baby Syndrome <p><u>variance:</u></p> <ul style="list-style-type: none"> - infant does not respond to consoling techniques - unusual, high-pitched crying (neurological) - no cry (along with other symptoms may reflect illness eg: sepsis) - see Behavior section <p><u>intervention:</u></p> <ul style="list-style-type: none"> - reinforce points under Teaching section - refer to appropriate health care prn. 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours

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<p>Behavior</p> <p><i>Assess:</i></p> <ul style="list-style-type: none"> - wake/sleep patterns, fussiness, response to consoling + alertness. 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - normal wake/sleep pattern - may be sleepy or fussy due to delivery or to transition to extrauterine life - responds to consoling efforts - cry strong and robust <p><u>teaching:</u></p> <ul style="list-style-type: none"> - teach re: normal sleep/wake pattern - teach re: feeding cues - teach re: recommended sleeping position (on back) - observe response to consoling <p><u>variance:</u></p> <ul style="list-style-type: none"> - weak or irritable high-pitched cry - not responding to consoling efforts <p><u>intervention:</u></p> <ul style="list-style-type: none"> - complete a full newborn assessment - refer to appropriate health care provider prn 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - normal wake/sleep pattern - demonstrates feeding cues - demonstrates organized state movement from quiet alert to crying - strong and robust cry - responds to consoling efforts <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours - provide info. re: coping with a crying infant (never shake a baby) <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours - disorganized movement through state changes (sleep, active sleep, drowsy, quiet alert, active alert, crying) <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours - assess factors which may influence behaviors eg: environmental stimuli, sleeping position, gestational age, medicated labor, pregnancy substance use - teach re: normal sleep/wake pattern, feeding cues, consoling, state changes - provide info. re: dealing with a crying infant (never shake a baby) - refer to appropriate health care provider prn 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 24-48 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 24-48 hours - increasing awareness of environment - gradual increasing wakefulness, alert state & interactions <p><u>teaching:</u></p> <ul style="list-style-type: none"> - provide information/guidance about sleep pattern - as in 0-72 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours

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<p>Health follow-up</p> <p>Assess:</p> <ul style="list-style-type: none"> - knowledge of appropriate health care follow-up. 	<p>norm:</p> <ul style="list-style-type: none"> - follow-up by health care providers varies - if discharged under 48 h, ongoing assessment should be carried out by a qualified professional <p>teaching:</p> <ul style="list-style-type: none"> - identify primary health care provider - encourage follow-up as needed <p>variance:</p> <ul style="list-style-type: none"> - family does not have a primary health care provider - family does not seek follow-up as needed <p>intervention:</p> <ul style="list-style-type: none"> - provide information as needed 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours

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<p>Immunization</p> <p><i>Assess:</i></p> <ul style="list-style-type: none"> - parent's knowledge and/or attitudes regarding immunization including informed consent and the Health Passport. 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - no immunizations needed <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as requested <p><u>variance:</u></p> <ul style="list-style-type: none"> - family member Hepatitis B positive <p><u>intervention:</u></p> <ul style="list-style-type: none"> - 1st Hep.B immunization & HBIG given (usually in hospital) - teach re: Hep B immunization schedule 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - aware of appropriate immunizations & schedules <p><u>teaching:</u></p> <ul style="list-style-type: none"> - review benefits of immunization, diseases to be immunized for, schedule, side effects, where to go for immunizations, the Health Passport <p><u>variance:</u></p> <ul style="list-style-type: none"> - does not plan for appropriate immunizations <p><u>intervention:</u></p> <ul style="list-style-type: none"> - see Teaching section - explore reasons - provide information prn - refer to appropriate health care provider prn

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Safety and Injury Prevention <i>Assess:</i> - home environment for safety.	<u>norm:</u> - provides a safe environment	<u>norm:</u> - as in 0-24 hours	<u>norm:</u> - as in 0-24 hours	<u>norm:</u> - as in 0-24 hours
	<u>teaching:</u> - teach re: safety of baby products including: car seat, crib, stroller/ walker/ change table/ soothers, powders, wipes etc. - teach re: safe care of baby including Ø second-hand smoke, SIDS prevention, Shaken Baby Syndrome, supporting head/neck, bathing (water temperature to prevent scalds), choking, sleeping (back lying position, well fitting, firm mattress, Ø pillows or soft objects in crib, Ø gas-trapping objects in crib like pillows, toys, bumper pads, Ø small objects or hanging cords near baby), pets, strangers, siblings			
	<u>variance:</u> - home environment if unsafe <u>intervention:</u> - explore with family ways to improve safety - refer to appropriate resources - refer to appropriate health care provider prn	<u>variance:</u> - as in 0-24 hours <u>intervention:</u> - as in 0-24 hours	<u>variance:</u> - as in 0-24 hours <u>intervention:</u> - as in 0-24 hours	<u>variance:</u> - as in 0-24 hours <u>intervention:</u> - as in 0-24 hours

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<p>Head</p> <p>Assess: - shape, size and fontanelles.</p>	<p>norm:</p> <ul style="list-style-type: none"> - vaginal birth: may have molding; some overlapping of sutures - head round, symmetrical - anterior & posterior fontanelles flat and soft - neck short and thick, full range of motion <p>teaching:</p> <ul style="list-style-type: none"> - teach re: fontanelles, moulding or any variations if present - teach re: back sleep position and alternating head positions (to avoid flattened head) <p>variance:</p> <ul style="list-style-type: none"> - caput succedaneum, cephalohematoma (may take several weeks to recede), bruising, excoriation, lacerations - bulging or sunken fontanelles - neck webbing, limited range of motion, masses <p>intervention:</p> <ul style="list-style-type: none"> - refer to appropriate health care provider prn 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p>norm:</p> <ul style="list-style-type: none"> - moulding resolving - average head circumference once moulding disappears 33-35 cm <p>teaching:</p> <ul style="list-style-type: none"> - teach parent re: placing baby on abd. when awake for short periods each day (tummy time) to strengthen neck muscles and to avoid flattened head - as in 0-72 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-72 hours

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<p>Eyes</p> <p>Assess: - for symmetry and clarity.</p>	<p>norm:</p> <ul style="list-style-type: none"> - dark or slate blue color - blink reflex present - edematous lids - no tears; pupils equal and reactive to light - may see subconjunctival hemorrhage - may see chemical conjunctivitis due to eye ointment - may have transient strabismus <p>teaching:</p> <ul style="list-style-type: none"> - teach re: expected eye changes and newborn's ability to see - teach re: eye care <p>variance:</p> <ul style="list-style-type: none"> - hazy, dull cornea - pupils unequal, dilated or constricted <p>intervention</p> <ul style="list-style-type: none"> - refer to appropriate health care provider prn 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours - may have slight jaundice of cornea <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours - teach re: jaundice progression/treatment (see Skin section) - teach re: risks for eye problems eg: family hx of strabismus or eye problems <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours - conjunctivitis worsening <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours - if conjunctivitis teach re: eye care - refer to appropriate health care provider prn 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-48 hours - resolving or decreasing edema of eyelids and chemical conjunctivitis <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-72 hours - blocked tear duct - conjunctivitis <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-72 hours - if blocked tear duct teach massage and refer to primary health care provider prn - if no change in conjunctivitis or worsening refer to appropriate health care provider

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Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Ears/ Hearing</p> <p>Assess:</p> <ul style="list-style-type: none"> - ears for well-formed cartilage and level with the eyes. - for referral to audiology as per regional guidelines. - parents understanding of hearing developmental milestones. 	<p>norm:</p> <ul style="list-style-type: none"> - well formed cartilage - ears level with eyes - startles/reacts to loud noises <p>teaching:</p> <ul style="list-style-type: none"> - teach re: the norms - higher-pitched sounds generally gain the infant's attention rather than lower pitched sounds <p>variance:</p> <ul style="list-style-type: none"> - unresponsive to noise - malformed; ear tags; low set ears; drainage present <p>intervention:</p> <ul style="list-style-type: none"> - assess for referral to high-risk hearing program or audiology - refer to appropriate health care provider prn 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>teaching:</p> <ul style="list-style-type: none"> - teach re: cleaning of ears eg. do not use a Q-Tip - teach re: second hand smoke increases risk of ear infection <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-72 hours - able to distinguish mother and father's voice within 2 weeks & respond with distinct reaction pattern to each <p>variance:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-72 hours

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<p>Mouth</p> <p>Assess:</p> <ul style="list-style-type: none"> - mouth, oral health and care. - feeding (see Feeding section). 	<p>norm:</p> <ul style="list-style-type: none"> - mucosa moist smooth and pink; may have epithelial pearls - tongue midline and can extend out to edge of lower lip - intact lip/palate - rooting reflex present <p>teaching:</p> <ul style="list-style-type: none"> - teach re: norms - see Feeding section for more info. <p>variance:</p> <ul style="list-style-type: none"> - tight frenulum (tongue tie); cleft lip/palate, short or protruding tongue, receding chin - dry mucosa <p>intervention:</p> <ul style="list-style-type: none"> - teach re: feeding variations to cope with variances - if dry mucosa, assess hydration status (see Feeding section) - refer to appropriate health care provider prn 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours - may have “sucking blister” on lips <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-48 hours - tongue may be coated white from feeding <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>teaching:</p> <ul style="list-style-type: none"> - teach re: oral hygiene - teach re: prevention of baby bottle decay <p>variance:</p> <ul style="list-style-type: none"> - as in 0-72 hours - thrush (candida): white, cheesy patches on tongue, gums or mucous membranes <p>intervention:</p> <ul style="list-style-type: none"> - if thrush present discuss signs, symptoms & treatment; if breastfed, assess mother’s nipples for thrush - refer to primary health care provider prn

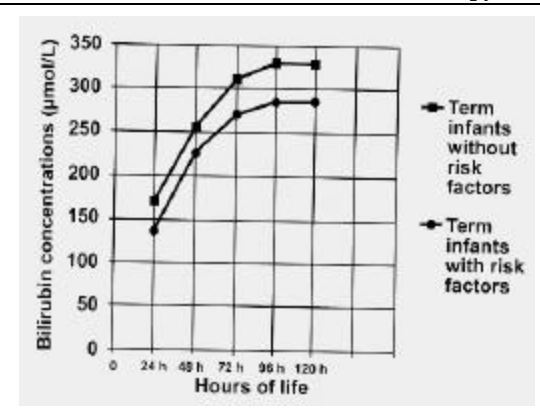
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Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Chest</p> <p><i>Assess:</i></p> <p>- for symmetry, shape, and respirations.</p> <p>- cardiovascular function (see Vital Signs section).</p>	<p>norm:</p> <ul style="list-style-type: none"> - round, symmetrical; protruding xiphoid process - hiccoughs and sneezing common - circumference ~ 1cm < head cir. - breasts may be swollen with clear/milky nipple discharge - chest sounds clear <p>teaching:</p> <ul style="list-style-type: none"> - teach re: hiccoughs - teach re: breasts - back sleeping for the prevention of SIDS <p>variance:</p> <ul style="list-style-type: none"> - deviation in shape of chest; asymmetrical movement; indrawing, grunting, nasal flaring - breasts inflamed; supernumerary nipples - coughing <p>intervention:</p> <ul style="list-style-type: none"> - assess respirations, heart rate (see Vital Signs) - refer to appropriate health care provider 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-72 hours - breast enlargement usually resolves by the 2nd week of life <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-72 hours

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<p>Umbilicus</p> <p><i>Assess:</i></p> <ul style="list-style-type: none"> - cord and umbilical area. - cord care. 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - clean and drying - cord clamp secure <p><u>teaching:</u></p> <ul style="list-style-type: none"> - review/demonstrate cord care - emphasizing importance of keeping cord clean & dry - teach re: S & S infection <p><u>variance:</u></p> <ul style="list-style-type: none"> - umbilical hernia, bleeding, drainage <p><u>intervention:</u></p> <ul style="list-style-type: none"> - refer to appropriate health care provider prn 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - clean and dry or slightly moist - cord clamp secure if present <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours - cord clamp, if present, may be removed if cord is dry <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours - foul odor, redness or swelling <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours - do not remove cord clamp if cord is moist or “mucky” 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 24-48 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - cord separates within 1-3 weeks; slight bleeding may occur with separation <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours - teach re: normal cord separation <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours

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<p>Skeletal/ Extremities</p> <p>Assess: - for symmetry. - intact and straight spine. - full range of motion.</p>	<p>norm:</p> <ul style="list-style-type: none"> - 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 <p>teaching:</p> <ul style="list-style-type: none"> - teach re: norms <p>variance:</p> <ul style="list-style-type: none"> - asymmetrical extremities - curvature of spine, non-intact spine, tufts of hair along an intact spine, coccygeal dimple - fractures - poor range of motion - skeletal abnormalities eg: talipes equinovarus (club foot), congenital hip dislocation <p>intervention:</p> <ul style="list-style-type: none"> - refer to appropriate health care provider prn 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-48hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-72 hours

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Skin</p> <p>Assess:</p> <ul style="list-style-type: none"> - skin color, turgor and integrity in natural light. 	<p>norm:</p> <ul style="list-style-type: none"> - may have peripheral cyanosis - skin intact; may be dry with some peeling; lanugo on back; vernix in the creases - may have: erythema toxicum, milia, mongolian spots, capillary hemangiomas, harlequin sign - skin pinch immediately returns to original state - skin is sensitive to touch <p>teaching:</p> <ul style="list-style-type: none"> - teach re: skin variations eg. cracks, peeling, hemangioma, Mongolian spots - review skin care: teach avoidance of perfumed products - teach re: need for tactile stimulation <p>variance:</p> <ul style="list-style-type: none"> - pallor (may be genetic) - generalized cyanosis or increased cyanosis with activity - unexplained skin rashes/lacerations/breaks in skin - any jaundice in first 24 hours <p>intervention:</p> <ul style="list-style-type: none"> - refer to appropriate health care provider if variance 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours - peripheral cyanosis resolved - bilirubin levels: see guidelines below <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours - teach re: relationship between feeding, hydration & jaundice – see Feeding section for more info - teach re: progression and management of jaundice eg: feeding, exposure to natural light, waking sleepy baby etc. - review newborn bathing prn <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours - bilirubin levels: see guidelines below <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours - see Teaching section - assess level of jaundice including skin color, hydration (including output), weight & feeding - refer to appropriate health care provider if variance <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Use as a guide only: Jaundice of the: -nose and face (90 uM/L) -chest, abdomen (110-190 uM/L) -legs, sclera (205-290 uM/L) -palms (350 uM/L)</p> </div>	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-48 hours - bilirubin levels: see guidelines below <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-48 hours - bilirubin levels: see guidelines below <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-48 hours - jaundice usually peaks day 3-4 resolves in one week - bilirubin levels: see guidelines below <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-72 hours - severe or increasing level of jaundice - bilirubin levels: see guidelines below - infant difficult to arouse - feeding poorly - new, unresolved or unexplained rashes <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-72 hours - refer to appropriate health care provider prn

Guidelines for the Initiation of Phototherapy in Neonatal Hyperbilirubinemia



Some risk factors include: gest.age <37 weeks, birth wt <2500 g, hemolysis, jaundice <24 hr of age, sepsis, and the need for resuscitation at birth.

Source: Canadian Paediatric Society (CPS). Approach to the management of hyperbilirubinemia in term newborn infants, *Paediatrics and Child Health*, 1999.

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Neuromuscular</p> <p><i>Assess:</i></p> <ul style="list-style-type: none"> - muscle tone and movement - that reflexes are present and appropriate for development/chronological age. 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - extremities symmetrical, full range of motion (ROM), flexed, good muscle tone infant reflexes present eg: Plantar, Stepping, Moro, Sucking, Rooting, Palmar <p><u>teaching:</u></p> <ul style="list-style-type: none"> - teach re: positioning, movement, reflexes, muscle tone <p><u>variance:</u></p> <ul style="list-style-type: none"> - asymmetrical facial/limb movement, abnormal foot posture, facial palsy, brachial palsy - limbs not flexed; lack of muscle tone/resistance; hypotonicity - seizure activity, jitteriness, hypertonicity - abnormal or absent reflexes <p><u>intervention:</u></p> <ul style="list-style-type: none"> - refer to appropriate health care provider if variance 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p><u>norm:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours <p><u>teaching:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours <p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Genitalia</p> <p>Assess: - genitalia and care of genitalia.</p>	<p>norm: - labia/scrotum swollen, pseudomenses, testes palpable, central urethral opening - anus patent</p> <p>teaching: - teach re: hygiene practices - instruct not to retract foreskin of uncircumcised baby - teach re: pseudomenses - review elimination patterns (see Elimination section)</p> <p>variance: - <u>female</u> - fusion of labia - <u>male</u> - urethral opening below/above tip of penis; unequal scrotal size; testes palpable in inguinal canal or not palpable; hydrocele</p> <p>intervention: - refer to appropriate health care provider if variance</p>	<p>norm: - as in 0-24 hours</p> <p>teaching: - as in 0-24 hours</p> <p>variance: - as in 0-24 hours - circumcision</p> <p>intervention: - as in 0-24 hours - if circumcised teach re: care and review signs and symptoms of complications eg: bleeding, infection, edema</p>	<p>norm: - as in 0-48 hours</p> <p>teaching: - as in 0-48 hours</p> <p>variance: - as in 0-48 hours</p> <p>intervention: - as in 0-48 hours</p>	<p>norm: - labia/scrotum swelling resolving - whitish mucoid or pseudomenses stops by end of first week</p> <p>teaching: - as in 0-72 hours</p> <p>variance: - as in 0-72hours - rash (see Skin section)</p> <p>intervention: - as in 0-72 hours - refer to appropriate health care provider prn</p>

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Elimination Urine</p> <p><i>Assess:</i></p> <ul style="list-style-type: none"> - if bladder output and color of urine is normal for baby's age. - parental knowledge regarding normal voiding patterns. 	<p>norm:</p> <ul style="list-style-type: none"> - at least one clear void with possible uric acid crystals (orange/brownish color) <p>teaching:</p> <ul style="list-style-type: none"> - teach re: relationship between feeding and output (see Feeding section) - teach re: expected minimum # wet diapers/day, placing tissue in diaper to determine wetness prn, consider if urine passed with stool - encourage parent to be aware of number of daily wet diapers/day <p>variance:</p> <ul style="list-style-type: none"> - no wet diapers/voiding in 24 hours <p>intervention:</p> <ul style="list-style-type: none"> - encourage parent to keep elimination record prn - see Feeding & Weight section for more info. - refer to appropriate health care provider - reassess within 24 hours if variance 	<p>norm:</p> <ul style="list-style-type: none"> - at least 2-3 clear voids with possible uric acid crystals <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>variance:</p> <ul style="list-style-type: none"> - less than 2 wet diapers in 24 hours - urine concentrated <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p>norm:</p> <ul style="list-style-type: none"> - at least 3-4 clear voids, with possible uric acid crystals <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-48 hours <p>variance:</p> <ul style="list-style-type: none"> - less than 3 wet diapers in 24 hours - urine concentrated <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p>norm:</p> <ul style="list-style-type: none"> - gradually increase until at least 6 or more voids/day by first week - urine pale yellow & odorless <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-72 hours <p>variance:</p> <ul style="list-style-type: none"> - uric acid crystals may indicate dehydration after 72 hours - urine concentrated - < 6 wet diapers/day <p>intervention:</p> <ul style="list-style-type: none"> - assess for inadequate hydration: <ul style="list-style-type: none"> • elimination • skin turgor • fontanelles • mucous membranes • behaviour • intake/milk transfer • change in feeding pattern • weight loss - as in 0 - 72 hours

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Elimination Stool</p> <p><i>Assess:</i> - parental knowledge regarding normal stooling patterns.</p>	<p>norm: - meconium passed within 24 hours - active bowel sounds</p> <p>teaching: - teach re: expected stool pattern, color, consistency, amount - encourage intake of colostrum (acts as a laxative) - teach re: the relationship between feeding and output (see Feeding section)</p> <p>variance: - no stool passed by 24 hours</p> <p>intervention: - assess for abdominal distension - check if meconium passed at birth - assess feeding/oral intake – see Feeding section for more info. - encourage intake of colostrum - refer to primary health care provider if variance</p>	<p>norm: - 1-2 transitional stools with color changing</p> <p>teaching: - as in 0-24 hours</p> <p>variance: - no stools or one stool passed within 48 hours</p> <p>intervention: - as in 0-24 hours - if variance, refer to primary health care provider & reassess within 24 hours if no further stool</p>	<p>norm: - as in 0-48 hours</p> <p>teaching: - as in 0-48 hours</p> <p>variance: - as in 0-48 hours</p> <p>intervention: - as in 0-48 hours</p>	<p>norm: - 4 days to 3 weeks of age: at least 2-3 stools/day, may have 8 or more/day - around 3-4 weeks of age individual bowel pattern developing - stools may be yellow/mustard or brown with mustard seed consistency - breastfed: watery, mustard color - formula fed: formed, yellow to brown - may be dark green with iron fortified formula</p> <p>teaching: - as in 0-72 hours - teach re: changes in bowel pattern</p> <p>variance: - constipation or diarrhea - green, foul smelling stool</p> <p>intervention: - as in 0-72 hours - teach re: changes in bowel pattern - teach re: emptying breasts as much as possible - refer to primary health care provider, if variance</p>

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Vital Signs</p> <p>Assess:</p> <p>Temperature</p> <p>- observe & touch for signs of variance.</p> <p>- assess environmental influences eg: room temperature, clothing.</p> <p>- assess fluid intake.</p> <p>Respirations</p> <p>Heart rate</p>	<p>norm:</p> <p>- within normal limits:</p> <p>temperature: axilla x 5 min. 36.5 - 37.2 C (97.6 - 99.0F)</p> <p>heart rate: 100-150; may be irregular for brief periods</p> <p>respirations: effortless 30-60/min. airway patent, clear sounds, may be irregular; nose midline nares patent; septum intact, some mucus; easy resps when mouth closed; sneezing common</p> <p>teaching:</p> <p>- teach parent how to assess temperature, respirations</p> <p>- teach re: norms</p> <p>- teach parent how to clear mucous - prone head lowered and stroke back</p> <p>- teach to avoid using mechanical aids in nose eg: Q tips & bulb aspirators</p> <p>- teach re: heat control in infants</p> <p>variance:</p> <p>- any variation outside of normal including diaphoresis, mottling, nasal flaring, indrawing, mucous or noisy resp., poor color, poor feeding, decreased activity, resp. distress</p> <p>intervention:</p> <p>- refer to primary health care provider if variance</p>	<p>norm:</p> <p>- as in 0-24 hours</p> <p>teaching:</p> <p>- as in 0-24 hours</p> <p>- discourage over-bundling baby</p> <p>- teach re: feeling back of neck to determine if baby is too warm</p> <p>variance:</p> <p>- as in 0-24 hours</p> <p>intervention:</p> <p>- as in 0-24 hours</p>	<p>norm:</p> <p>- as in 0-48 hours</p> <p>teaching:</p> <p>- as in 0-48 hours</p> <p>variance:</p> <p>- as in 0-48 hours</p> <p>intervention:</p> <p>- as in 0-48 hours</p>	<p>norm:</p> <p>- as in 0-72 hours</p> <p>teaching:</p> <p>- as in 0-72 hours</p> <p>variance:</p> <p>- as in 0-72 hours</p> <p>Intervention:</p> <p>- as in 0-72 hours</p>

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Weight</p> <p>Assess:</p> <ul style="list-style-type: none"> - nude weight. - weight gain/loss for appropriate age-specific weight. - for signs of inadequate intake. See Feeding, Behavior, Elimination and Skin sections. 	<p>norm:</p> <ul style="list-style-type: none"> - see > 72 hours - normal birth weight for term infants is 2500 – 4000g <p>teaching:</p> <ul style="list-style-type: none"> - see > 72 hours - teach re: feeding, indicators of adequate hydration (see Feeding, Elimination, Skin & Behavior section) - teach re: normal wt. loss <p>variance:</p> <ul style="list-style-type: none"> - see > 72 hours - inadequate intake may be due to: poor latch or suck, inadequate milk transfer, little breast stimulation, illness <p>intervention:</p> <ul style="list-style-type: none"> - see > 72 hours - if variance, ongoing feeding assessment, teaching & support (see Feeding, Elimination, Skin & Behaviour section for more info) - refer to appropriate health care provider prn 	<p>norm:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 0-24 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 0-24 hours 	<p>norm:</p> <ul style="list-style-type: none"> - as in 24-48 hours <p>teaching:</p> <ul style="list-style-type: none"> - as in 24-48 hours <p>variance:</p> <ul style="list-style-type: none"> - as in 24-48 hours <p>intervention:</p> <ul style="list-style-type: none"> - as in 24-48 hours 	<p>norm:</p> <ul style="list-style-type: none"> - some wt. loss - initial wt. loss during the first 10 days of up to 10% of birth wt - wt. usually stabilizes by day 3-4 - by fifth day, wt. gain of 15-30 gms/day - expect wt. gain of 120-240 g/week until infant doubles birth wt - babies return to their birth wt. by 2-3 weeks <p>teaching:</p> <ul style="list-style-type: none"> - teach re: norms for expected wt. gain and signs of adequate hydration <p>variance:</p> <ul style="list-style-type: none"> - >7-10% wt. loss <u>with signs of inadequate intake</u> - wt. loss of 7% during the 1st week warrants close assessment of the feeding situation - no wt. gain by day 5 - has not returned to birth wt. by 2-3 weeks <p>intervention:</p> <ul style="list-style-type: none"> - close monitoring of the feeding situation - depending on the variance, may need to initiate maternal breast pumping q3-4 hours (see Breasts section Maternal Care Path)

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
<p>Feeding</p> <p>Assess:</p> <ul style="list-style-type: none"> - success eg: positioning, hydration, frequency, duration, sucking and latch etc.; - need for vitamin supplement. - elimination, weight, skin and behavior. See these sections for more details. 	<p>norm:</p> <p>If breastfeeding or bottle feeding:</p> <ul style="list-style-type: none"> - good positioning - tolerates feeds - may have small emesis of mucous or undigested milk following feeds (10 mls or less) <p>0-2 h</p> <ul style="list-style-type: none"> - skin to skin as soon as possible after birth, baby to breast or nipple when he/she shows signs of readiness (usually in first 2 hours), may not latch (may lick, nuzzle or root for nipple) <p>2-12 h</p> <ul style="list-style-type: none"> - variable frequency and duration depending on the amount of time for recovery sleep, may graze/cluster feed, may have long or short feeds <p>12-24 h & beyond</p> <ul style="list-style-type: none"> - feeds every 2-3 hours (breastfeeding), every 2-4 hours (formula), may cluster feed, increased successful latch & suck (milk transfer, audible swallowing, tongue down; for breastfed babies – wide open mouth, flanged lips, no dimpling of cheeks, no smacking sounds) <p>If formula feeding:</p> <ul style="list-style-type: none"> - intake = 60-90 ml/kg/24 hours (~20-30 mls/feed) <p>teaching:</p> <ul style="list-style-type: none"> - explore feeding options, provide information as necessary for informed decision making - explore cultural beliefs re: feeding - teach feeding cues eg: rooting, mouthing - teach re: sleep states (see Behaviour section) – watch for light sleep behaviors 	<p>norm:</p> <p>If breastfeeding:</p> <ul style="list-style-type: none"> - as in 12-24 hours - increased audible swallowing - cue based feeding <p>If formula feeding:</p> <ul style="list-style-type: none"> - intake = 90-120ml/kg/24 hours (~ 20-60 mls/feed) - cue based feeding <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-24 hours - teaching based on Nutrition for Healthy Term Infants (1998) guidelines - discuss need for vitamin D supplement if breastfeeding - teach re: signs of adequate hydration 	<p>norm:</p> <p>If breastfeeding:</p> <ul style="list-style-type: none"> - as in 12-48 hours <p>If formula feeding:</p> <ul style="list-style-type: none"> - intake = 120-150 ml/kg/24 hours (~30-75 mls/feed) - cue based feeding <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p>norm:</p> <p>If breastfeeding:</p> <ul style="list-style-type: none"> - baby feeds on cue usually at least 8X /24 hours) with good latch, suck and milk transfer - shows signs of adequate hydration (see Elimination, Weight, Skin and Behavior sections) <p>If formula feeding:</p> <ul style="list-style-type: none"> - intake <u>gradually</u> increases to 1000-1250 ml/day and baby is content between feedings - 3-7 days, 6-10 feeds/24hrs, 60-90ml/feed - 1-2 wks, 6-8 feeds/24 hrs, 60-90ml/feed - 3 wks-2 mo, 5-7 feeds/24 hrs, 120-150 ml/feed - cue based feeding <p>teaching:</p> <ul style="list-style-type: none"> - as in 0-72 hours - provide anticipatory guidance re: the introduction of solids prn - teach re: growth spurts

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
Feeding: cont'd..	<ul style="list-style-type: none"> - teach re: signs of adequate hydration (see Elimination, Behavior, Skin and Weight section) - explain stomach capacity of newborn (“walnut” sized) - teach/assist with appropriate latch and positioning - teach burping positions - if bottle feeding: teach formula and bottle preparation, discourage bottle propping - see Breasts section (Maternal Care Path) for more information on breastfeeding <p><u>variance:</u></p> <ul style="list-style-type: none"> - poor/absent latch - poor feeding position - uncoordinated suck/swallow/ breath pattern - coughing, choking, respiratory distress with feeding - does not settle following feeds - congenital anomalies eg. tongue tie, cleft palate - inappropriate formula <p><u>intervention:</u></p> <ul style="list-style-type: none"> - assess reason for variance and provide teaching as needed (see Teaching section) - if variance, follow-up in 24-48 hours - if baby is not latching to breast: <ol style="list-style-type: none"> 1) teach breast stimulation/expression 2) teach feeding alternatives prn - teach waking techniques prn - refer to appropriate health care provider prn 	<p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours - observe a feeding if not latching, sucking &/or swallowing successfully - if formula feeding: demonstrates vomiting, frequent large regurgitation, fussy, irritable, crying or arching - gassy, loose stools <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-24 hours - inquire re: food intolerance/allergies in family - if exhibiting signs of formula intolerance, encourage to discuss options with nutritionist &/or primary care giver - refer to resources as indicated - if variance, follow-up assessment in 24-48 hours 	<p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-48 hours 	<p><u>variance:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours <p><u>intervention:</u></p> <ul style="list-style-type: none"> - as in 0-72 hours

NEWBORN CARE & OUTCOMES (Includes Norms, Teaching, Variances and Interventions)				
Assessment	0-24 HOURS	24-48 HOURS	48-72 HOURS	AFTER 72 HOURS
Other needs/ concerns <i>Any additional information/ concerns from assessment.</i>	<p><u>norm:</u> - no other needs/concerns</p> <p><u>teaching:</u> - review community resources & how to access if other needs/concerns arise</p> <p><u>variance:</u> - other need/concern identified</p> <p><u>intervention:</u> - dependent on need/concern - document on variance chart</p>	<p><u>norm:</u> - as in 0-24 hours</p> <p><u>teaching:</u> - as in 0-24 hours</p> <p><u>variance:</u> - as in 0-24 hours</p> <p><u>intervention:</u> - as in 0-24 hours</p>	<p><u>norm:</u> - as in 0-24 hours</p> <p><u>teaching:</u> - as in 0-24 hours</p> <p><u>variance:</u> - as in 0-24 hours</p> <p><u>intervention:</u> - as in 0-24 hours</p>	<p><u>norm:</u> - as in 0-24 hours</p> <p><u>teaching:</u> - as in 0-24 hours</p> <p><u>variance:</u> - as in 0-24 hours</p> <p><u>intervention:</u> - as in 0-24 hours</p>