Learning Activities

1. The infant mortality rate, or the deaths within 1 year per 1,000 births, is considered to be a good indicator of a country’s overall health. The neonatal mortality rate is the death rate within 28 days (or 1 month) per 1,000 births.

2.

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<th>Reflex</th>
<th>Description</th>
<th>Age at Disappearance</th>
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<tr>
<td>a. Moro</td>
<td>A reaction to sudden movement in which the infant’s arms and legs extend and abduct and the fingers are splayed in a C position. Then the infant’s arms return to the midline in an embracing position.</td>
<td>1–3 months</td>
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<td>b. Rooting</td>
<td>Infant’s head turns in direction of anything stroking cheek. May be depressed if baby has just been fed.</td>
<td>7–8 months (asleep)</td>
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<td>c. Tonic neck</td>
<td>When sleeping or quiet, the infant’s head turns to one side and the arm and leg on that side are extended, while the opposite arm and leg are flexed.</td>
<td>5 months (20 weeks)</td>
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<td>d. Palmar grasp</td>
<td>Place object in the hand of the newborn, and the newborn will grasp it tightly (plantar reflex involves curling of the toes when pressure is applied to the sole of the foot).</td>
<td>4 months</td>
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3. 12.5

4. a. Allow head to adapt to diameters of the birth canal during birth
   b. Allow for future brain growth

5. a. Diamond
   b. Junction of two parietal and two frontal bones
   c. 12–18 months

6. a. Triangular
   b. Junction of two parietal bones and one occipital bone
   c. By end of second month

7. a. Depress bulb.
   b. Insert tip into side of mouth (nose is suctioned after mouth).
   c. Release bulb to remove secretions.

8. a. Murmur is normal, or functional, and due to blood passing through normal heart valves; most common
   b. Abnormal, or organic, murmur is due to abnormal openings or normal openings that have not yet closed; less common than functional murmurs

9. a. Facilities may require taking the initial newborn temperature by the rectal route
   b. Axillary
   c. i. Rectal: gently insert the lubricated tip of the thermometer into the rectum (about ½ inch is appropriate for the term newborn).
   ii. Axillary: hold thermometer firmly in the center of the axilla; digital thermometers are ready to read when the signal sounds. Recheck if out of the facility’s range of normal for the newborn.
11. a. 46, 56; 19, 21.5
   b. 2722, 4082; 6, 9

12. a. Random and uncoordinated; inadequate muscle control to hold head steady
   b. May appear cross-eyed because their eye muscle coordination is not well-developed
   c. Tremors during crying are normal, constant tremors during sleep may not be normal
   d. Should not be limp

13. a. About ¾ of adult renal blood flow
   b. Short renal tubules limit the capacity to reabsorb substances such as glucose, amino acids, phosphate, and bicarbonate
   c. Limited ability to concentrate urine
   d. Limited ability to cope with fluid imbalances

14. a. Prevention of cancer, fewer urinary tract infections, reduced occurrence of sexually transmitted infections later in life
   b. Hemorrhage and infection
   c. Done on eighth day of life; boy is given Jewish name at that time

15. a. Topical anesthetic may be used by physician to minimize pain.
   b. Hold and soothe the baby; use a pacifier if the mother plans to use one.
   c. Place blanket on circumcision board and a heat lamp over baby.
   d. Apply gentle pressure to any bleeding site, using a gauze pad and finger pressure.
   e. Observe for first urination, the stream, its character, and the amount of urine.

16. a. Excess red blood cells are destroyed after birth because the baby breathes air and gets oxygen directly. The high hematocrit (larger number of erythrocytes) is unnecessary after birth.
   b. 2–3, 1

17. a. Dark greenish-black, thick, sticky; passed 8–24 hours after birth
   b. Loose and greenish yellow; contain mucus; change within the first week during neonatal period
   c. Yellow, soft, and pasty; may have 3–6 each day
   d. Yellow to brown, more solid and fewer in number than those of breastfed baby

18. a. Small putty-like stools
   b. Diarrhea
   c. Bloody stools

19. Stools are hard and dry. Stool frequency and amount of apparent straining are not the criteria for constipation because newborns vary in stool frequency as adults do, and straining is often simply the infant’s immature abdominal muscles.

20. 90, 2–3

21. Infections that are minor in an adult may be fatal to a newborn. Response to infection and inflammation is slow because of the immaturity of the immune system.

Review Questions
1. Answer: 2
   Rationale: These infant movements are the classic “embrace” of the Moro reflex.

2. Answer: 4
   Rationale: The infant roots to seek the nipple when nursing. This reflex may be depressed or absent if the infant has just been fed; crying would best identify equality of mouth movement. The gag reflex helps the baby from inhaling mucus or milk. Turning away is the opposite of rooting.

3. Answer: 1
   Rationale: Molding is needed for the fetal head to adapt to the pelvic diameters. Fluid buildup best describes hydrocephalus. Bleeding in the spaces between skull bones best describes cephalhematoma. Notifying the pediatrician is not indicated for this expected variation.

4. Answer: 3
   Rationale: The infant’s first visual preference is for the human face, especially the eyes. Infants also like contrasting colors. Geometric objects are not necessarily preferred. Pastels would not have the strong contrast that infants prefer. Infants prefer moving objects.

5. Answer: 1
   Rationale: This is the best way to use the bulb syringe without stimulating the gag reflex or...
pushing secretions farther into the upper respiratory tract. Depressing the bulb after insertion into the mouth would blow air and/or secretions into the mouth. Placing the tip into the center of the mouth is likely to stimulate the gag reflex.

6. Answer: 2  
Rationale: The infant is hypothermic and should be warmed right away. This temperature is cool and should be dealt with; removing blankets and sources of heat would cool the baby and this baby is hypothermic. Rechecking the temperature is appropriate, but the correct answer is better because the baby is also being warmed.

7. Answer: 2  
Rationale: Direct pressure is usually sufficient to control bleeding from a circumcision. The amount of bleeding may seem tiny by adult standards, but can be significant in relation to a baby’s total blood volume of 300 mL. Continued bleeding should be reported, but finger pressure controls most circumcision bleeding. Petroleum jelly gauze is not routinely used for Plastibell circumcisions (increases the risk for the ring slipping onto shaft of penis).

8. Answer: 4  
Rationale: Physiologic jaundice is the normal response until the newborn’s liver catches up with excretion of bilirubin released from broken-down excess red blood cells (erythrocytes). Although excess bruising or a large cephalhematoma can increase the degree of jaundice, there is nothing in the question’s stem to indicate that these conditions are a problem. Retained meconium can increase the degree of jaundice because the bilirubin is “recycled,” but the root cause is still bilirubin released from the now-excess erythrocytes. The infant’s skin color may change with maturation, but yellow is not one of the normal colors.

9. Answer: 4  
Rationale: Water on a soft cloth or cotton ball is sufficient to clean the newborn’s external ears. Nothing should be inserted into them by a non-professional because they might inadvertently puncture the tympanic membrane. Irrigation with a bulb syringe is done only with medical advice for indicated conditions (such as impacted wax); it is not done for routine cleansing. Baby oil on a cotton ball might help loosen wax, but should be limited to the external ear, not the canal.

10. Answer: 1  
Rationale: “Tenting” like this is a classic sign of dehydration in infants, children, and adults. A young infant may also have a depressed fontanel. Because the infant is 6 days old, the evaluation suggests dehydration, likely related to inadequate intake. Edema would not cause this sign; it could cause “pitting” when the skin was pressed if edema is extreme. Newborns rarely take too much formula or breast milk and even if one did, the “tenting” described here would not be the result. Postterm gestation is the closest condition that might be linked to reduced vernix because the vernix begins to disappear just before term.

11. Answer: 2  
Rationale: Keeping the cord dry until it falls off and the site heals reduces the risk for infection. Warm tap water is best except for use of a mild soap on the most heavily soiled areas. Avoiding a bath is not needed and might contribute to rashes from irritants on the skin.

12. Answer: 4  
Rationale: The broken skin can allow microorganisms to enter, as in older children or adults. Microorganisms that would not cause problems in an older infant can cause sepsis in the newborn. Anemia is not likely from this small cut because bleeding stopped so quickly. As described in the stem, the skin bleeding would have been dealt with in a warmed environment of some kind. Erythrocytes were not destroyed within the body and retained—bleeding allowed their escape. Therefore, this minor problem (not unusual) would not add to jaundice.

13. Answer: 2  
Rationale: These simple measures are usually enough to comfort the infant who has undergone a painful procedure. Although crying is an infant’s communication of need, this statement does nothing to relieve the baby’s pain. Both preterm and term infants feel pain, although the preterm infant may be too weak to cry.

14. Answer: 4  
Rationale: Acrocyanosis is normal at this age. Oxygen would be needed for central cyanosis, tachypnea, or other signs of cardiopulmonary distress. Warmth should be maintained, but not to alleviate acrocyanosis; extremities are always cooler than the central body. Assessment of the pulse and respiratory rates is not needed only for the acrocyanosis because it is normal.

15. Answer: 1  
Rationale: The upper limit of expected weight loss for a term newborn is 10% of the birth weight with a range of 5–10%, or 377 g in this infant. This infant has lost 454 g. A pulse of 130 bpm is within normal limits for a term newborn. Bluish areas on lower back describes Mongolian spots, more common in dark-
skinned infants. Tiny, white, raised papules are milia.

16. Answer: 4
Rationale: Tremors of the mouth, arms, and legs are common during crying. No need to contact the doctor if the tremors are only intermittent and with crying. Tremors when crying do not necessarily indicate how much the baby is upset. Infants are uncoordinated, but a term infant’s muscles are easily strong enough to move freely.

17. Answer: 3
Rationale: The average time of passage of the first meconium is 8–24 hours after birth. Infants may pass the first meconium during this time span, but it is not abnormal for them to take up to 24 hours. Thirty-six hours is beyond the upper limit of normal.

18. Answer: 3
Rationale: During pregnancy, the uterus of a female fetus responds to maternal hormones, similar to the way it will when her menstrual period begins at puberty. When the supply of these hormones stops after birth, a bloody vaginal discharge may occur briefly (pseudo-menstruation). It is not significant and soon stops. The description in the stem does not suggest any abnormality or injury so the physician does not need a report for the pseudomenstruation alone.

19. Answer: 1
Rationale: Baby powder can irritate the respiratory tract if an infant breathes it in and is unnecessary. The infant could be allergic to the powder, but the particulate matter is of more concern now. If left in the folds for a long period of time powder can accumulate and cake, but this is not the primary reason to advise against it. Powders would not be drying but are not needed and not desirable.

20. Answer: 2
Rationale: This is a classic description of the quiet alert state which is ideal for parent-infant interaction. 1. The infant would probably not gaze at the mother if significant hearing impairment is present; 3. Excessive stimulation is not typically communicated by these behaviors but by withdrawal or crying; 4. This infant is showing a response by remaining quiet.

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**Crossword Puzzle**

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**Case Study**

1. a. i. Safety: Be aware that infant can roll off any surface. Suffocation is possible if infant sleeps with parents. Avoid items that can easily be swallowed as baby grows and matures (wall tacks, small items on floor, hot items on table, etc.). Install electric outlet protectors and other safety items before they are actually necessary.
   ii. Bulb syringe: Use can be taught at the time of birth and reinforced throughout the stay (see Skill 12-2 for correct use). Parents should be instructed to be sure the bulb is where their baby is for quick suctioning.
   iii. Axillary temperature is standard until a child can safely hold an oral thermometer under his/her tongue. After the early newborn period, skin and ear temperature sensors are available.
iv. Low temperature is more likely in the earliest newborn hours. A hat prevents a great deal of heat loss through the head. A hat is removed if a low temperature or procedure requires a radiant warmer. Two blankets are common for newborns, although removing blankets will be needed if the infant temperature rises too high. A temperature that remains too low is cause for concern about infection in the neonatal period.

b. Encourage parents to participate in a hands-on way as soon as possible in the birthing room. Continue to reinforce their learning during the postpartum period. Be patient if they are slow, keeping the infant’s temperature in mind while they work.

c. Ask what they have read or seen in videos that compares with what you teach. Ask for their questions or concerns about what they have heard from others.

d. Wash with water and keep diaper loose over penis. Do not remove yellow crust around penis. Watch for bleeding and apply pressure. Watch for redness or drainage that may be signs of infection. The baby should have at least 6 wet diapers per day.

**Applying Knowledge**

Answers will vary.