PURPOSE:
To describe the process of auscultation of fetal heart tones using a Fetal Doppler.

EQUIPMENT:
Fetal Doppler
Alcohol pads
Water based ultrasound transmission gel

PROCEDURE:
1. Wash hands.
2. Adhere to Standard Precautions.
3. Identify patient and explain procedure to patient.
4. Assemble equipment and supplies.
5. Assist patient to a comfortable, supine position.
6. Palpate the abdomen using Leopold’s maneuvers to determine fetal position and document on the visit note.
7. Turn the Doppler on, adjust the volume and wait for self-test procedure to finish.
8. Place a liberal amount of transmission gel on the abdomen. Place the face of the transducer flat against the abdomen.
9. Adjust the transducer for the best position while listening for the fetal heart sound.
10. Once the fetal heart signal has been located, hold the transducer in place with as little movement as possible. The Fetal Heart Rate (FHR) will be displayed in the Liquid Crystal Display (LCD) screen.
11. Document the FHR on the visit note.
12. Turn unit off and wipe off excess gel from the patient’s abdomen and transducer.
13. Wipe transducer with germicidal wipes before returning to the carrying case.

Maintenance of the Fetal Doppler:
1. When the unit indicates low battery, the nurse will replace the battery as per manufacturer’s instructions.
2. On an annual basis and as needed, the agency will arrange for bioengineering inspection of the Fetal Doppler.
3. A log indicating the item serial/model number, date of inspection and disposition will be maintained by the agency.

AFTER CARE:
1. Document in patient's record:
   a. Procedure and observations.
   b. Patient's response to procedure.
   c. Instructions given to patient.
PURPOSE:
To provide skilled nursing care in the home to the expectant mother who has gestational diabetes.

CONSIDERATIONS:
1. Gestational diabetes (GDM) is defined as "carbohydrate intolerance of variable severity with onset or first recognition during the present pregnancy" (ADA, 1990). As with pre-gestational diabetes, glycolic control is extremely important in decreasing prenatal complications.
2. Women with GDM are at increased risk for preeclampsia and cesarean birth. Infants of gestational diabetics are at significant risk for fetal macrosomia, neonatal hypoglycemia, hypocalcemia, polycythemia and hyperbilirubinemia (ADA, 1990).
3. Goals for women with GDM:
   a. The patient and her family demonstrate/verbalize an understanding of diabetic pregnancy, the plan of care and the importance of glycemic control.
   b. She complies with the plan of care.
   c. She achieves and maintains glycemic control.
   d. She demonstrates effective coping.
   e. Neither she nor the infant experience complications.
4. Prior to discharge from the hospital, the homecare nurse should obtain a thorough medical and obstetrical history and be knowledgeable of the treatment plan to be followed in the home.
5. A major focus in homecare is educating the patient in all aspects of diabetic self care, the implications of diabetes for the growing fetus, expected changes in insulin dosages with advancing pregnancy, encouraging her compliance, and providing an atmosphere where questions and concerns can be discussed openly.
6. The nursing care provided during the home visit is performed according to specific protocols and physician orders.

EQUIPMENT:
- Scale
- Fetal Doppler (optional)
- Glucometer
- Urine dipsticks (optional)
- Stethoscope
- Sphygmomanometer
- Gloves
- Thermometer
- Paper tape measure

PROCEDURE:
1. Adhere to Standard Precautions.
2. Identify patient and review patient's diary. Ask her about her activity, medication, diet, glucose monitoring results since the last home visit and fetal activity.
3. Evaluate the glucose results to see if they are within the desired range.
4. Take vital signs.
5. Assess for signs of edema.
6. Weigh patient and check urine with dipstick for ketones and protein, as ordered.
7. Listen for fetal heart tones and note any fetal movement and uterine activity, as ordered/indicated.
8. Assess patient's understanding and feelings about the diagnosis of gestational diabetes.
9. Perform other assessments per physician's orders.

AFTER CARE:
1. Review the following information with the patient:
   a. Explanation of gestational diabetes and its effect on pregnancy.
   b. Purpose and effects of insulin on the body.
   c. Self administration of insulin.
   d. Use of glucometer to measure blood glucose.
   e. Adjustment of insulin dosage based on glucose results.
   f. Symptoms of hypoglycemia and what to do.
   g. Symptoms of hyperglycemia and what to do.
   h. Recommended diet.
   i. Recommended exercise plan.
   j. Recommended individual/patient blood sugar parameters.
2. Instruct the patient in the use of the diary and the importance of keeping an accurate record of blood sugar levels, diet, exercise, insulin doses and fetal activity.
3. Answer questions about gestational diabetes, the treatment plan, and effects on pregnancy and newborn.
4. Encourage the patient to verbalize fears and concerns about the pregnancy, clarify misconceptions, and encourage her to talk with her physician as well.
5. Instruct the patient about the symptoms that are to be reported to her physician.
6. Refer to dietician and diabetic educator, if indicated.
7. Document all findings, instructions and referrals in the patient's record.
Antepartum, Maternal And Newborn – Antepartum: Homecare of Woman with Hyperemesis Gravidarum

Strength of Evidence Level: 3

PURPOSE:
To provide skilled nursing care in the home to the expectant mother who has hyperemesis gravidarum.

CONSIDERATIONS:
1. When vomiting during pregnancy becomes excessive and causes electrolyte, metabolic and nutritional imbalances, it is termed hyperemesis gravidarum. It occurs in about 4/1,000 pregnancies and has a greater incidence in young women, first time mothers, and in those with increased body weight.
2. Psychological factors seem to contribute to the illness, especially if there are feelings of ambivalence toward pregnancy and/or parenthood. Women often affected are those whose normal reaction to stress involves gastrointestinal upsets.
3. When taking history ascertain if patient has or is taking any alternative remedies to alleviate symptoms. Inform patient of risks and inform physician of findings.
4. The goals of treatment include control of vomiting, restoration of electrolyte balance and maintenance of adequate nutrition.
5. Usually nothing is given by mouth for 48 hours. IV therapy is continued until all vomiting ceases.
6. If the woman’s condition does not respond to the initial therapy and medication, Total Parenteral Nutrition (TPN) may be needed. TPN is a safe and effective treatment and may be ordered as part of a post hospital discharge plan.
7. Initial fluid administration may be up to 3,000 mL in the first 24 hours.
8. If IV therapy lasts longer than 2 weeks, the physician may consider using a PICC or a central IV line.
9. Some cases are relatively mild and will resolve after the woman is hydrated for several days with IV fluids. For example, IV therapy may continue until the patient is drinking orally very well.
10. If IV therapy does not control severe nausea and vomiting, the physician may consider using antiemetics. Other medications may be used to control symptoms in severe cases.

EQUIPMENT:
Sphygmomanometer
Stethoscope
Gloves
Thermometer

PROCEDURE:
1. Adhere to Standard Precautions.
2. Identify patient and assess patient's understanding and feelings about the diagnosis, concerns for fetal well being and knowledge about the plan of care.
3. Review diet record, intake and output measurements, and medications, if applicable.
4. Take vital signs including blood pressure.
5. Weigh patient.
7. Proceed with IV therapy and medications, if applicable.

AFTER CARE:
1. Review instructions concerning diet and activity level.
2. Discuss home odors that might aggravate nausea, i.e., frying foods, cooking foods with strong odors, room deodorizers, colognes and perfumes, potpourri.
3. Encourage patient to discuss feelings and concerns related to the pregnancy with her physician.
4. Help her identify support persons who can be involved in her care.
5. Discuss breathing and relaxation exercises that might help her cope with stress.
6. Discuss signs and symptoms of dehydration and when to call nurse or doctor.
7. Discuss the use of small frequent meals and crackers at bedside to decrease nausea.
8. Arrange for social work or dietician referral, as needed.
10. Document all findings, instructions and referrals in the patient's record.
12. Teach the patient and a caregiver how to administer IV therapy, medication and the care of an IV line, if applicable.
PURPOSE:
To provide skilled nursing care in the home to the expectant mother who is on bedrest due to pregnancy induced hypertension (PIH).

CONSIDERATIONS:
1. The most effective therapy for PIH is to prevent progression of the condition.
2. Management at home for the woman with mild PIH can be successful and can be emotionally and financially advantageous compared to hospitalization.
3. Prior to discharge from the hospital, the homecare nurse should obtain a thorough medical and obstetrical history and be knowledgeable of the treatment plan to be followed in the home.
4. A major focus in homecare is educating the patient and encouraging her to participate in her care.
5. The nursing care provided during the home visit is performed according to specific protocols and physician orders.

EQUIPMENT:
- Measuring tape
- Scale
- Fetal Doppler (optional)
- Sphygmomanometer
- Stethoscope
- Urine dipsticks (optional)
- Gloves
- Thermometer

PROCEDURE:
1. Adhere to Standard Precautions.
2. Identify patient and explain procedure to patient.
3. Ask patient about her fetal activity, her own activity, medication, diet and elimination history since the last home visit.
4. Take vital signs.
5. Assess home situation to determine if the patient is receiving help with childcare, meal preparations, and housework, so that she can maintain bed rest as ordered.
6. Assess need for emotional support and refer to parent support groups that may be available to help women cope with prolonged bedrest.
7. Assess for signs of edema.
8. Assess deep tendon reflexes.
9. Ask patient if she has experienced any visual disturbances, headache or epigastric pain.
10. Weigh patient and check urine with dipstick for protein, glucose and ketones, as ordered.
11. Listen for fetal heart tones and note any fetal movement and uterine activity, as ordered/indicated.
12. Assess fetal movement records, as ordered.
13. Perform other assessments per physician's protocol orders.

AFTER CARE:
1. Patients are not always able to keep diaries. Teaching the patient the use of a self-care diary and the importance of keeping accurate records of blood pressure readings, urine dipstick results, weight, intake and output, and fetal movement may be appropriate in some cases.
2. Instruct the patient in:
   a. Bedrest in the lateral recumbent position - left side preferable - NOT on back.
   b. Diet high in protein and fiber, adequate fluid intake, and avoiding foods high in salt.
   c. Relaxation methods to help decrease stress.
3. Instruct the patient about symptoms that are to be reported to her physician immediately, i.e., rapid rise in blood pressure, rapid gain in weight, edema, epigastric pain, severe headache, visual disturbances, nausea, vomiting, and signs of premature labor.
4. Support the expectant mother in her efforts for prolonged bedrest and encourage ideas for quiet activities, i.e., crossword puzzles, reading, needlework, journal writing and music.
5. Report any problems to physician per protocol.
6. Document all findings, instructions, and referrals in the patient's record.
Antepartum, Maternal And Newborn – Antepartum: Homecare of Woman with Preterm Labor

SECTION: 19.05

Strength of Evidence Level: 3

PURPOSE:
To provide skilled nursing care in the home to the expectant mother who is on bedrest due to preterm labor.

CONSIDERATIONS:
1. Preterm labor may be controlled with early detection and treatment.
2. Homecare for preterm labor can decrease the cost of in-hospital tocolytic therapy, as well as prevent the emotional stress of being away from home.
3. Prior to discharge from the hospital, the homecare nurse should obtain a thorough medical and obstetrical history and be knowledgeable of the treatment plan to be followed in the home.
4. A major focus in homecare is educating the patient and encouraging her to participate in her care.
5. The nursing care provided during the home visit is performed according to specific protocols and physician orders.
6. If the physician requires specific "uterine monitoring" using an external monitor with a printout, individual arrangements should be made. It may be possible to use an external monitor in the home setting, depending on individual community standards.

EQUIPMENT:
- Scale
- Fetal Doppler (optional)
- Stethoscope
- Sphygmomanometer
- Urine dipsticks (optional)
- Gloves

PROCEDURE:
1. Adhere to Standard Precautions.
2. Identify patient and review her diary. Ask her about fetal activity and any uterine contractions, her own activity, medication, diet and elimination history since the last home visit.
3. Assess home situation to determine if the patient is receiving help with childcare, meal preparations, and housework, so that she can remain on bedrest, as ordered. Make referrals, as appropriate.
4. Assess need for emotional support and refer to parent support groups that may be available to help women cope with prolonged bedrest.
5. Evaluate the tocolytic schedule and history of uterine activity pattern to determine effectiveness of the maintenance dose, if ordered.
6. Take vital signs.
7. Assess cardiac and respiratory status.
8. Assess for signs of edema.
9. Listen for fetal heart tones and note any fetal movement and uterine activity, as ordered.
10. Weigh patient and check urine with dipstick for protein, glucose and ketones, as ordered/indicated.
11. Perform other assessments per physician's protocol orders.
12. Assess daily fetal movement records, as ordered.

AFTER CARE:
1. Reinforce the importance of bedrest lying in a left lateral position, elevation of the foot of the bed, and use of pillows under the hips to reduce pressure on the cervix.
2. Instruct the patient about the symptoms that are to be reported to her physician immediately.
3. Support the expectant mother in her efforts for prolonged bedrest and encourage ideas for quiet activities, i.e., crossword puzzles, reading, needlework, journal writing, and music.
4. Instruct patient regarding position changes and deep breathing periodically.
5. Instruct in manual palpations for contractions.
6. Report any problems to physician per protocol and per predetermined parameters.
   a. The physician should be notified if the pulse is over 120 beats per minute; the diastolic blood pressure is greater than 15 mm Hg; or the systolic pressure is greater than 30 mm Hg above patient's baseline.
   b. Notify physician of congestion, dyspnea or chest pain.
   c. Notify physician of signs of edema and/or rapid weight gain (> 1 pound in a week).
   d. Notify physician if glucose, ketones or protein are present in urine.
   e. Notify physician if fetal heart tones (FHTs) are < 120 beats per minute (BPM) or > 160 BPM and/or if decreased fetal movement is present.
7. Document all findings, instructions and referrals in the patient's record.
Strength of Evidence Level: 3

PURPOSE:
To teach a method of self-monitoring fetal well being by counting fetal kicks.

CONSIDERATIONS:
1. Expectant women generally begin to feel movement sometime between the sixteenth and twentieth weeks of pregnancy. Multiparas usually report movement earlier in their pregnancy.
2. Use of fetal kick counts typically begins between the 28 to 30 weeks of pregnancy.
3. Fetal kick counts are an important way an expectant mother can assist healthcare providers to determine if the baby is healthy.
4. Parameters should be set by physician as to what the “low” number of fetal kicks is and when to call the physician. If the number of fetal kicks is too low, other diagnostic tests may need to be initiated.
5. There is more than one method of doing fetal kick counts. The following instructions are based on the Sadovsky Method.

PROCEDURE:
1. Instruct the expectant mother in the following steps:
   a. Count the fetal movements 3 times each day - for 1 hour after breakfast, for 1 hour after lunch, and for 1 hour after dinner.
   b. Lie down on her left side, if possible, and concentrate on the baby’s movements. If she cannot lie down, she can sit quietly with feet and legs propped up or supported.
   c. Count each time the baby moves, including “kicks” or “rolling” or “turning” type of movements. If the baby has hiccoughs, stop counting until they stop – then start over.
   d. Record an “X” on the line for each movement she felt, on the kick count sheet.
   e. After counting and recording 4 baby movements stop counting for that 1 hour time period. (If physician has set different parameters use that number for setting guidelines.)
   f. If less than four movements in 1 hour are felt, continue counting for 1 more hour. If, at the end of the 2nd hour, the movements are still less than four, call the doctor.
2. Ask expectant mother to explain the procedure and answer any questions she has regarding it.
3. Stress the importance of compliance with the fetal kick counts, taking the record with her to her prenatal appointments, and notifying her physician as directed.

AFTER CARE:
1. Document in patient's record:
   a. Instructions given to patient.
   b. Patient’s ability to return explanation of procedure.
Purposes:
To provide for the comfort, safety and cleanliness of the newborn.

Considerations:
1. The instructional bath is an opportunity to demonstrate the newborn’s need for handling, affection and security.
2. Use soap, oils or lotions sparingly. DO NOT use soap on face. Soap tends to dry the skin; oils and lotions may clog pores or cause allergies.
3. Discourage use of powder. Put cornstarch in hand and gently rub on skin area. Cornstarch, in very small amounts, can be beneficial to help avoid chafing in skin folds, under chin, etc.
4. The newborn’s body should not be immersed until the cord is dry and detached, umbilicus is healed and circumcision healed (if applicable).

Equipment:
Basin
Mild/neutral soap
Washcloths (2)
Towel
Cotton balls
Baby clothes
Bath pad
Soft bristle hairbrush
Gloves
Cornstarch

Procedure:
1. Adhere to Standard Precautions.
2. Assemble equipment.
3. Place bath pad on a firm surface.
4. Fill basin with 1-2 inches of lukewarm water, testing temperature of water with elbow.
5. Place newborn on pad.
6. Undress newborn and provide for warmth by covering with a towel.
7. Cleanse eyes with cotton balls moistened with warm water. Clean from inner to outer canthus with one stroke, using one cotton ball per eye.
8. Wash face with clear water and washcloth.
9. Supporting newborn in football hold, position head over basin and gently wash newborn's hair with soap and water; rinse well and pat dry with towel. If the newborn has a lot of thick or curly hair, a soft-bristled hairbrush may be used to help prevent cradle cap.
10. Place washcloth in bottom of basin.
11. If umbilicus is healed, gently place baby into basin. If umbilicus is not healed, continue to sponge bathe the newborn without immersing the body into the water.
12. Wash body, legs and arms giving special attention to skin folds and creases.
13. Cleanse genital area with soap and water, using cotton balls if necessary. Female newborns should be cleansed gently from front to back paying special attention to wipe any stool from labia. Male newborns that have not been circumcised should never have the foreskin forcibly retracted. Gently retract until you meet resistance and clean area with soap and water. (See Circumcision Care.)
14. Wash back and buttocks.
15. After bathing, dry the newborn immediately by patting the skin dry. DO NOT rub. Dress newborn as indicated by weather conditions.

Aftercare:
1. Instruct the caregiver on the precautions for safe handling of the newborn while bathing.
   a. Show the football hold.
   b. Caution about wet and slippery newborn and need for a firm grip.
   c. Caution about never leaving the newborn unattended on a table, couch or in the bathtub.
2. Cleanse basin, place supplies, soiled and/or wet clothes and towels per caregiver’s preference.
3. Document in patient’s record:
   a. Condition of skin, diaper area and umbilical cord area.
   b. Newborn’s response to procedure.
   c. Caregiver’s response to procedure.
   d. Instructions given to caregiver.
   e. Report to physician any observed signs of cord infection or other problems noted.
PURPOSE:
To prevent contamination of infant formula.

CONSIDERATIONS:
1. This procedure is necessary only if risk of contamination is high or child is immunosuppressed.
2. There are various types of bottles that require different sterilization methods.
3. Disposable bottles require sterilization of nipples and caps only.
4. Thorough cleaning of the bottles and nipples with hot, soapy water, rinsing and then air drying is usually an adequate method of cleaning bottles and nipples for most newborns. Use of a dishwasher is also acceptable.

EQUIPMENT:
- Bottles with nipples, rings and caps
- Formula
- Bottle and nipple brushes
- Tongs
- Sterilizer
- Rack for sterilizer

PROCEDURES:
Terminal:
- High Risk of Contamination:
  1. Adhere to Standard Precautions.
  2. Rinse bottles, nipples, rings and caps in cold water to remove milk.
  3. Wash bottles, nipples, rings and caps in hot, soapy water; rinse and air dry or wash in the dishwasher.
  4. Pour formula into bottles. Put nipples, rings and caps on bottles loosely so that steam can escape from the bottles.
  5. To sterilize, place bottles on rack in sterilizer, add 3 inches of water and cover with tight-fitting lid.
  7. Remove from heat and allow to cool gradually, approximately 2 hours. Tighten caps.
  8. Refrigerate.

Simple:
1. Adhere to Standard Precautions.
2. Wash bottles in dishwasher or by hand in hot, soapy water.
3. Sterilize nipples, rings and caps in pan of boiling water for 5 minutes. If bottles washed by hand, sterilize in pan of boiling water for 5 minutes.
4. Pour formula in bottle and put nipple and cap on.
5. Refrigerate until ready to use.
6. Store extra nipples in jar until ready to use.

Disposable:
1. Adhere to Standard Precautions.
2. Sterilize nipples, rings and caps in pan of boiling water for 5 minutes.
3. Remove disposable bottle liner from box without touching inside of the sac.

AFTER CARE:
1. Document in patient's record:
   a. Type of bottles and sterilization procedure used.
   b. Instructions given to parent/caregiver.
**Antepartum, Maternal And Newborn – Newborn: Care of Newborn with Hyperbilirubinemia**  
SECTION: 19.10

**Strength of Evidence Level: 3**

**PURPOSE:**
To provide skilled nursing care to newborns with diagnoses of hyperbilirubinemia.

**CONSIDERATIONS:**
1. Newborn jaundice occurs when the newborn’s liver is not able to get rid of extra bilirubin on its own. Bilirubin is a yellow chemical that accumulates in the blood when red blood cells are naturally broken down as new red blood cells are formed.
2. In most cases, jaundice will appear at about the second or third day of life and disappear by 2 weeks of age. Visible jaundice develops in at least 50 percent of all infants.
3. A transcutaneous bilirubin (TcB) and/or Total Serum Bilirubin (TSB) should be performed with doctor’s orders if the jaundice appears excessive for the infant’s age. Visual estimation of bilirubin levels can lead to errors, particularly in darkly pigmented infants.
4. All bilirubin levels should be interpreted according to the infant’s age in HOURS.
5. Follow manufacturer’s instructions for use of TcB devices.

**EQUIPMENT:**
- Scale
- Stethoscope and sphygmomanometer
- Sterile lancet
- Pedi “bullet’ lab tubes
- Alcohol sponge
- Gauze or cotton ball
- Self-adhesive bandage
- Impervious trash bags
- Gloves
- Puncture-proof container
- Transcutaneous Bilirubin Device (optional)

**PROCEDURE:**
1. Adhere to Standard Precautions.
2. Identify the patient and explain the procedure to caregiver and patient, if age appropriate.
3. Assess patient for the following:
   b. Weigh the patient, to determine gain or loss.
   c. Adequacy of intake.
   d. Pattern of voiding and stooling.
4. Perform a TcB or a heelstick (See Capillary Blood Samples) or TSB, per physician order, for adequate bilirubin level.
5. Call physician with bilirubin result and obtain further instructions, which may include home phototherapy (See Antepartum, Maternal, Newborn- Home Phototherapy procedure) or a repeat TcB or TSB the following day.

**AFTER CARE:**
1. Instruct caregiver:
   a. To observe for signs of increased jaundice/bilirubin levels.
   b. To monitor wet diapers and stooling.
   c. Ensure adequate nutritional intake whether breastfeeding or formula feeding.
   d. To call physician if symptoms worsen or if newborn has decreased urinary output/stools or increased lethargy.
2. Document in patient’s record:
   a. Procedure and observations.
   b. Physician instructions for follow-up.
   c. Instructions given to caregiver.
PURPOSE:
To promote healing of circumcision site.

CONSIDERATIONS:
1. Yellowish, white exudate forms as part of the granulating process on/about the second day following circumcision. This is NOT a sign of infection and should not be forcibly removed.
2. Instruct the caregiver to observe for bleeding, swelling, redness, drainage or decreased urinary output, which should be reported to the physician.
3. Petroleum dressing should be changed with each diaper change, if physician orders continued dressings.
4. After petroleum dressing has been removed, petroleum jelly should be applied with each diaper change until the skin has returned to a normal color (approximately 4 to 5 days).
5. Instruct the caregiver to allow extra room in the front of the diaper so that it does not press circumcised area.
6. Instruct the caregiver that it will take at least 7 to 10 days for the circumcision to heal and the plastibell (if used) to come off. The caregiver needs to wait for the plastibell to come off naturally; it may "hang by a thread" for a day or two prior.
7. Instruct caregiver to notify the care provider if the plastibell is not off within 10 days.

EQUIPMENT:
- Water
- Petroleum gauze, 3/4 inch width (optional)
- Diaper
- Gloves
- Impervious trash bag
- Petroleum jelly

PROCEDURE:
1. Adhere to Standard Precautions.
2. Remove diaper slowly; if diaper is sticking to penis, use warm water soak to remove.
3. Remove old petroleum dressing gently. If unable to remove dressing, moisten with warm water.
4. Cleanse penis by gently dripping clean, warm water over it to remove dry urine and/or feces.
5. Reapply new petroleum dressing or ring of petroleum to the penis and around the foreskin. Loosely apply diaper to prevent friction against the penis.
6. If a plastibell was utilized, no dressing is required.
7. Discard soiled supplies in appropriate containers.

AFTER CARE:
1. Document in patient's record:
   a. Appearance of circumcision site.
   b. Treatment provided.
   d. Instructions given to caregiver.
   f. Physician notified of any signs of infection or healing issues.
PURPOSE:
To prepare formula in accurate dilutions, utilizing clean technique.

CONSIDERATIONS:
1. Several types of milk-based and milk-free formulas are available according to infant's special needs.
2. Formula must be ordered by name of product, calories per ounce, number of ounces per feeding, and number of feedings per day.
3. Normal dilution is 20 calories per ounce of formula.
4. Caution should be taken when using higher calorie formulas as osmolarity and renal solute load are increased.
5. Most hospitals have established guidelines for mixing formulas. Consult these guidelines.
6. If dilutions higher than 27 calories per ounce are desired, a dietician needs to calculate formula as other additives may be utilized, i.e., corn oil, MCT oil or polyose.
7. In most urban areas with safe water systems, terminal sterilization of formula is not always necessary.
8. Equipment should be cleansed with hot, soapy water and rinsed well with hot water or washed in a dishwasher.

EQUIPMENT:
Clean container
Clean or disposable bottles
Clean nipples

PROCEDURE:
1. Adhere to Standard Precautions.
2. Boil water for 3 to 5 minutes, if directed by physician or health department.
3. Cool the water to room temperature.
4. In clean container, pour the formula and cooled water according to the calorie and type of the formula:

<table>
<thead>
<tr>
<th>20 Calories/oz Formulas</th>
<th>Container Size</th>
<th>Dilution Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready-To-Feed</td>
<td>32 oz. can</td>
<td>No Dilution required</td>
</tr>
<tr>
<td></td>
<td>8 oz. can</td>
<td>No Dilution required</td>
</tr>
<tr>
<td>Concentrate</td>
<td>13 oz. can</td>
<td>One part concentrate to one part water</td>
</tr>
<tr>
<td>Powder</td>
<td>1 pound can</td>
<td>1 level scoop to 2 oz. water</td>
</tr>
<tr>
<td>Evaporated Milk</td>
<td>13 oz. can</td>
<td>13 oz. can of milk plus 1 to 2 tablespoons of corn syrup and 18 oz. of water</td>
</tr>
</tbody>
</table>

5. To dilute higher calorie formulas, it is more accurate to make the entire day's formula at one time. This avoids possible mistakes of mixing and measuring individual bottles:

<table>
<thead>
<tr>
<th>24 Calories/oz Formulas</th>
<th>Amt. Formula</th>
<th>Amt. Water</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid Concentrate</td>
<td>13 oz. can</td>
<td>9 oz.</td>
<td>22 oz.</td>
</tr>
<tr>
<td>Powder</td>
<td>17 scoops</td>
<td>28 oz.</td>
<td>32 oz.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>27 Calories/oz Formulas</th>
<th>Amt. Formula</th>
<th>Amt. Water</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid Concentrate</td>
<td>13 oz. can</td>
<td>6 oz.</td>
<td>19 oz.</td>
</tr>
<tr>
<td>Powder</td>
<td>19 scoops</td>
<td>28 oz.</td>
<td>32 oz.</td>
</tr>
</tbody>
</table>

6. After the mixing of formula and water in the container, pour it into individual bottles, 2-4 ounces per bottle according to infant's one-time consumption.
7. Put nipple and cap on.
8. Refrigerate until ready to use.

AFTER CARE:
1. Document in patient’s record:
   a. Method of formula preparation and amount prepared.
   b. Instructions given to caregiver.
   c. Return demonstration by caregiver of formula preparation, if greater than 20 calories per ounce formula.

Concentration of Infant Formulas

<table>
<thead>
<tr>
<th>Concentrates (40 cal/oz)</th>
<th>Caloric concentration (cal/oz)</th>
<th>Concentrate (oz)</th>
<th>Water (oz)</th>
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</thead>
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<tr>
<td>20</td>
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<td>26</td>
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<td>13</td>
<td>13</td>
<td>5.5</td>
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<tr>
<td>30</td>
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<td>13</td>
<td>4.3</td>
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Powder (40 cal/scoop)

<table>
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<tr>
<th>Caloric concentration (cal/oz)</th>
<th>Powder(scoop)</th>
<th>Water (oz)</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>24</td>
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</tr>
<tr>
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<td>10</td>
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<tr>
<td>30</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

a Does not apply to Similac Neosure
b 1 scoop = 1 tbsp
Purpose:
To pass nutrients directly to the stomach by a tube passed through the nasopharynx or the oropharynx.

Considerations:
1. Gavage feeding is indicated for the infant/child who is unable to suck because of prematurity, congenital deformity, easy fatiguability or illness. Gavage feeding is also indicated for the infant/child who risks aspiration because of gastro-esophageal reflux or lack of gag-reflex.
2. The nasogastric tube may be left in place or re-inserted with each feeding. Follow the manufacturer's guidelines for various types of tubes.
3. A feeding tube may kink, coil, or knot and become obstructed, preventing feeding.
4. The feeding tube can be passed through the nose or mouth. An indwelling tube should be passed through the nose. Infants are obligatory nose breathers and insertion through the mouth may cause less distress and help to stimulate sucking.
5. An indwelling nasogastric tube may cause airway obstruction and stomach irritation. Benefits need to be evaluated by a physician.
6. A weighted feeding tube may be utilized for long-term use. It may need to be changed only every 1-2 months.
7. A physician should be consulted for type of feeding tube to be utilized.
8. Unless contraindicated, allow the child to suck on a pacifier and smell the formula during the feeding.

Equipment:
Feeding tube (#5 or #6 French for nasogastric feeding of premature neonate; #8 or #10 French for others) - tubes may vary in composition of materials
Feeding reservoir or large 20 to 50 mL syringe
Prescribed formula or breast milk
Sterile water
2 to 5 mL syringe
Tape measure
Tape
Stethoscope
Gloves
Impervious trash bag

Procedure:
1. Adhere to Standard Precautions.
2. Explain procedure to caregiver and patient, in age appropriate manner.
3. Determine the length of tubing needed to ensure placement in the stomach, according to agency policy. (Common measurements used are from the tip of the nose to the top of the earlobe to the midpoint between the xiphoid process and the umbilicus; for the premature neonate from the bridge of the nose to the umbilicus.)
4. Mark the tube at the appropriate length with a piece of tape, measuring from the distal end.
5. If possible, support the infant/child in your lap in a sitting position to provide a feeling of warmth and security. Otherwise, place the infant/child in a supine position or tilted slightly to the right with head and chest slightly elevated. Infants and young children may be swaddled for the procedure.
6. Stabilize the infant/child's head with one hand and lubricate the feeding tube with water with the other hand.
7. Insert the tube smoothly and quickly up to the pre-measured mark. For oral insertion, pass the tube toward the back of the throat. For nasal insertion, pass the tube toward the occiput in a horizontal plane.
8. Synchronize tube insertion with throat movement, if infant swallows, to facilitate its passage into the stomach. During insertion, watch for choking and cyanosis, signs that the tube has entered the trachea. If these occur, remove the tube immediately. Reinsert when patient stabilized. Also watch for bradycardia and apnea resulting from vagal stimulation. If bradycardia occurs, leave the tube in place for one minute and check for return to normal heart rate. If bradycardia persists, remove the tube and notify the doctor.
9. If the tube is to remain in place, tape it flat to the infant/child's cheek. To prevent possible skin breakdown, do not tape the tube to the bridge of his/her nose.
10. Make sure the tube is in the stomach by aspirating residual stomach contents with the syringe. [Note: the volume obtained and then reinject it to avoid altering the neonate's buffer system and electrolyte balance. In general, if the volume of the residual is equal to or greater than 1/3 of the feeding volume, hold the feeding and notify the physician.]
11. Alternatively, or in addition to the above procedures, check placement of the feeding tube in the stomach by injecting air (1 to 2 mL for an infant and 5 mL in older children) into the tube while listening for air sounds in the stomach with the stethoscope.
12. If the tube does not appear to be in place, insert it several centimeters further and test again. DO NOT begin feeding until you are sure the tube is positioned properly.
13. When the tube is in place, fill the feeding reservoir or syringe with the formula or breast milk. Connect the feeding reservoir or syringe to the top of the tube, and then release the tube to start the feeding. Pinch the top of the tube or give a gentle push with the plunger to establish gentle flow.
14. If the infant/child is sitting on your lap, hold the container 4 inches (10 cm) above his/her abdomen. If lying down, hold it 6-8 inches (15-20 cm) above his/her head.
15. Regulate flow by raising and lowering the container so that the feeding takes 15 to 20 minutes, the average time for a bottle feeding. To prevent stomach distention, reflux and vomiting, DO NOT let...
the feeding proceed too rapidly. Use a pump if feeding is ordered to be administered over one hour or longer.

16. When the feeding is finished, clamp nasogastric tube, if it is to be removed. Pinch off the tubing before air enters the infant/child’s stomach to prevent distention. To avoid leakage of fluid from entering the pharynx during removal, with possible aspiration, withdraw the tube smoothly and quickly. If the tube is to remain in place, flush it with 1 to 2 mL of sterile water for small tube and 5 mL for larger tubes.

17. Unless contraindicated, place infant on stomach or right side one hour after feeding to facilitate gastric emptying and to prevent aspiration if regurgitation occurs. For an infant with gastroesophageal reflux or other problems, it may be necessary to position the infant upright for 1 to 2 hours.

18. Cleanse equipment with hot, soapy water, if it is to be reused.

19. Discard soiled supplies in appropriate containers.

AFTER CARE:

1. Document in patient's record:
   a. Size and type of tube inserted.
   b. Amount of residual and the amount of feeding administered.
   c. Type and amount of any vomitus.
   d. Any adverse reactions to tube insertion or feeding.
   e. Patient's response to procedure.
   f. Instructions given to caregiver.
   g. Mean's by which placement of tube was checked prior to initiation of feed.
PURPOSE:
To determine if the infant's head size is within normal limits compared to chest circumference.

CONSIDERATIONS:
1. Normal limits of head size for newborns are 33-35.5 cm. and are measured up to 18 months of age.
2. In a newborn, the circumference of the head equals or exceeds that of the chest or abdomen.
3. The head is measured at its greatest circumference.
4. Since head shape can affect the location of maximum circumference, more than one measurement should be taken.
5. Normal limits of chest size is 12"-13" or 30-33 cm.
6. The nipple line is the point of greatest circumference.

EQUIPMENT:
Paper tape measure with tenths of centimeter markings

PROCEDURE TO MEASURE HEAD:
1. Adhere to Standard Precautions.
2. Position the tape measure slightly above the eyebrows and pinna of the ears and around the occipital prominence at the back of the skull.
3. Note measurement.
4. Remeasure head for accuracy.

PROCEDURE TO MEASURE CHEST:
1. Adhere to Standard Precautions
2. Place tape under back and wrap snugly around the chest at nipple line.
3. Note measurement.
4. Remeasure for accuracy.

AFTER CARE:
1. Document measurement in the patient's record.
2. Report to physician if measurement is not within the normal limits.
PURPOSE:
To provide a safe home environment to effectively monitor apneic/bradycardic episodes in young infants/children; to promote caregiver's independence by maximizing learning potential through education and networking with the medical team; and to implement an appropriate written documentation system to measurably track apneic/bradycardic episodes.

CONSIDERATIONS:
1. Criteria for acceptance:
   a. Infant/child with documented symptomatic apnea/bradycardia.
   b. Infant/child with "at risk" diagnosis due to pertinent medical condition and/or substantial family history.
   c. Responsible and competent caregivers with the willingness and commitment to program guidelines.
   d. Safe physical environment with electricity and wiring. Telephone for emergency communications is preferable.
   e. Caregivers competent in Cardiac Pulmonary Resuscitation (CPR).
2. Physician's order is required for apnea monitoring in the home. Orders should include the times the infant is to be on the monitor and any alarm settings.
3. Incidence of apnea increases as gestational age decreases.
4. Home apnea monitoring is very stressful for the caregiver.
5. All apnea and bradycardia should be documented daily in a log by parent(s)/caregiver(s).

EQUIPMENT:
Varies slightly per the differences of manufacturers:
- Infant monitor (electrical equipment/3-way adapter battery pack [optional for travel])
- Stethoscope
- Monitor instruction manual
- Alarm documentation flow sheets
- Accessories (electrode patches or belt, lead wires [clip or belt], patient cable)

PROCEDURE:
Adhere to Standard Precautions.
Initial Visit:
1. Review general program format and nursing visitation guidelines.
2. Assess caregiver's physical environment for organization and safety measures.
3. Institute written documentation system per monitor company guidelines.
   [Note: All apneic/bradycardiac episodes and possible alarms must be documented on a daily basis.]
4. Visibly display telephone number of monitor company for easy accessibility.
5. Review previous teachings and instructions from monitor company and medical team.
6. Secure written materials and instructions in home with easy accessibility, paying particular attention to home safety, CPR and emergency intervention.
7. Institute emergency medical plans with neighborhood agencies, i.e., gas, electricity, telephone company and paramedics.
8. Assist caregivers to utilize community resources available for emotional support and respite needs as necessary.
9. Refer to rehabilitation team if indicated, i.e., social worker or physical therapy.
10. Report initial feedback to physician.
11. Obtain return demonstration of CPR skills.

Nursing Assessment:
1. Physical examination of infant/child. Check for skin irritation under the electrodes or belt.
2. Request demonstration from primary caregiver in the following areas:
   a. Application of electrodes or belt.
   b. Care of monitor and equipment per manufacturer's instructions.
   c. Utilization of alarm systems correctly.
   d. How to properly assess infant/child:
      (1.) Check color.
      (2.) Observe respiratory pattern (heart rate, signs and symptoms of distress).
      (3.) Utilization of appropriate stimulation techniques.
   e. Trouble shooting alarms.
   f. Utilization of the stethoscope.
   g. Initiating emergency intervention.
      (1.) CPR/airway obstruction.
      (2.) Paramedics.
   h. Review documentation procedure.

Follow-up as Necessary:
1. Nursing assessment of infant/child's condition and the caregiver's capabilities of handling apnea program.
2. Review signs and symptoms of respiratory complications or potential problems that should be reported to physician and/or medical team.
3. Answer any questions concerning aspects of the infant/child's care. Reinforce previous teachings and instructions.
4. Review daily care records (flow sheet).
5. Instruct additional caregivers as necessary.
6. Review CPR skills of caregivers.
7. Call physician and/or medical team for periodic updates.
8. Utilize monitor company as resource and network to provide consistent educational focus.

AFTER CARE:
1. Document in patient's record:
   a. Findings from nursing assessment.
b. Psychological status of home environment and caregiver's coping mechanisms.
c. Child's skin care status.
d. Apneic/bradycardic spells, actual and questionable.
e. Any communications with medical team.
f. All instructions (written and verbal) given to caregivers and their response.

2. Encourage the caregivers to recognize the healthy aspects of the child. Provide specific guidance to the caregivers to strengthen the bonding with child.
PURPOSE:
To provide treatment of physiologic jaundice found in the infant who is otherwise healthy through the use of phototherapy units designed for home use.

CONSIDERATIONS:
1. The infant and caregiver must meet criteria for acceptance.
2. The serum bilirubin should be monitored at least once a day while the newborn is receiving the treatment.
3. The infant must be examined daily by either the nurse or doctor while receiving the treatment.
4. Treatment period usually lasts approximately 3 days.
5. A physician may discontinue therapy if:
   a. Significant decrease in hemoglobin or hematocrit.
   b. Total bilirubin continues to increase with home phototherapy.
   c. Axillary temperature below 97.4 or above 99.6 degrees Fahrenheit.
   d. Significant weight loss greater than 10% of birth weight in the first 2 to 3 days of life and greater than 2-3 ounces thereafter.
   e. Respiratory distress.
   f. Dehydration.
   g. Evidence of improper use of equipment.
   h. Unsafe home environment.
   i. Bilirubin level falls within acceptable range.
6. It is imperative that the caregiver be fully instructed. Involve him/her during each step of the procedure.
7. Fiberoptic blanket may be utilized per physician order.
8. If fiberoptic blanket is used, infant can be fully dressed including diaper with a blanket directly on infant skin. No eye patches are required.
9. Skin color is not a valid indication of effectiveness of treatment.
10. Skin usually becomes dry and peels. Avoid use of ointment, creams, oils, as they act as light barriers.
11. Blood work drawn will need to be run STAT by laboratory with results reported to physician within 4 hours or per agency policy. Blood should not be exposed to sunlight or artificial light.
12. It is important that the newborn stay hydrated and fed frequently (usually every 2 to 3 hours).

CRITERIA FOR ACCEPTANCE OF PATIENT:
1. Otherwise healthy, term infant with clinically significant icterus.
   a. Term, appropriate-for-gestational-age, defined as greater than 37 weeks of gestational age by obstetrical dating and weight of 2,500-4,000 grams at birth.
   b. Five-minute Apgar score of 7 or greater.
   c. Normal findings on physical examination.
   d. Actively feeding infant.
   e. Stooling and Voiding by 24 hours of age.
   f. Greater than 48 hours of age but less than 7 days at the initiation of therapy.
   g. Bilirubin levels will vary at the start of therapy. Physician needs to determine if levels are appropriate for home phototherapy.
2. Competent caregiver who is willing and able to care for the infant at home.
3. Wiring in home to allow for adapter or 3-pronged plug.
4. Ability to adequately regulate environmental temperature.
5. Telephone must be easily accessible.
6. Blood work will be done while infant is receiving therapy per physician order, usually daily.

EQUIPMENT:
Portable home, fiberoptic blanket, or phototherapy bed (type of unit will be ordered by physician)
Patient record to be kept by caregiver
Disposable cover for blanket (only needed with fiberoptic blanket)

PROCEDURE:
1. Adhere to Standard Precautions.
2. Identify infant and explain to caregiver that you will be instructing them in all aspects of the procedure.
3. Undress and perform physical assessment of infant.
4. Assess and instruct for dehydration.
5. Check axillary temperature, instruct caregiver. (See Temperature Taking, Axillary or Oral.)
6. Draw any ordered blood work, usually per heelstick.
7. If fiberoptic blanket is used, apply blanket per manufacturer's instructions. Cloth covering should be placed over blanket to protect from soiling. Infant may have clothing placed over the fiberoptic blanket. A cloth blanket may then be wrapped around the infant.
8. If infant is placed on a phototherapy bed no eye patches are needed. Place the infant on his/her back, into the cover provided with a diaper on. Check the infant's temperature after 30 minutes regardless of the type of unit used to lower the bilirubin (normal axillary temperature should be between 97.4 and 99.0 degrees Fahrenheit). If the infant's temperature is less than 97.4 degrees Fahrenheit (Ax), have the parents place the unit in a warmer area of the house and recheck again in 30 minutes. If the infant's temperature is too warm, have the parents place the unit in a cooler area of the house and recheck in 30 minutes. If the infant's temperature has not then stabilized, notify physician.
13. If fiberoptic blanket is used, infant may wear a diaper.
14. A medical equipment company may set up phototherapy equipment.
AFTER CARE:

2. Instruct caregivers in patient care including:
   temperature taking, turning of infant as per
   instructions at least every 2 hours.
3. Review signs and symptoms of illness for infant.
4. Plan visit for next day for newborn assessment and
   to do blood work.
5. Review indications of terminating treatment and
   notification of doctor or nurse. (See Step 5 in
   Considerations).
6. Call physician with abnormal findings and time
   treatment started.
7. Document in patient's record:
   a. Findings on examination of infant.
   b. Plan of care that has been coordinated with
      physician.
   c. Caregiver’s response to procedure.
   d. All instructions given to caregiver and written
      materials left in home.
PURPOSE:
A blood test to detect several inherited deficiencies which are mandated under public health law except when a member of certain religious organizations.

CONSIDERATIONS:
1. If these conditions are not detected early and treated promptly with a special diet or replacement therapy, irreparable damage can result.
2. Nearly every state requires newborn screenings. This is usually done before the newborn leaves the hospital.
3. A physician’s order is needed to perform this procedure.

EQUIPMENT:
Gloves
Special screening filter paper (usually provided by state health department)
Alcohol wipe
Sterile lancet or spring-loaded automatic lancet device for newborns that will not puncture more than 2.4 mm
Bandage
Gauze or cotton
Puncture-proof container
Impervious trash bag

PROCEDURES:
1. Adhere to Standard Precautions.
2. Identify the infant and explain the procedure to the caregivers. Reassure the caregivers and provide written parent information sheet.
3. If caregivers refuse testing, have them sign newborn screening test refusal form.
4. Soak foot in warm water of a temperature not >42 Celsius or use warm compress for several minutes.
5. Identify the appropriate puncture site on the newborn’s heel by drawing an imaginary line from between the fourth and fifth toes that runs parallel to the lateral aspect of the heel. The appropriate puncture site is the outer aspect of the heel.
6. Open an alcohol wipe and cleanse the appropriate site for the puncture and allow to air dry.
7. Hold the limb in a dependent position to increase venous pressure.
8. Use aseptic technique, open the lancet and stick the heel gently but firmly.
9. Wipe away the first drop of blood and then gently touch filter paper to blood, making sure the blood soaks through the paper. Gentle intermittent pressure may be used to stimulate bleeding. DO NOT milk the site (which causes an admixture of tissue and fluid) or touch the same circle to blood several times (layering).
10. Allow the blood on the filter paper to dry away from heat and direct sunlight. Send the filter paper and the completed request form to the laboratory within 24 hours.
11. When finished, press gauze or cotton over site until bleeding stops. Apply bandage.
12. Discard soiled supplies in appropriate containers.

AFTER CARE:
1. Document in patient’s record:
   a. Date and time test completed.
   b. Site selected, procedure completed.
   c. Identity and location of laboratory where specimen and forms were sent.
   d. Document the infant’s response/tolerance to procedure.
   e. Provide parent with copy of test slip.
PURPOSE:
To aid in healing of skin eruption in the diaper area.

CONSIDERATIONS:
1. Diaper dermatitis (rash) can occur from various causes: wetness, increased Ph and fecal irritants.
2. If open blisters are apparent, notify the physician.
3. If rash is monilial, report to physician. Medication will need to be ordered.
4. Change diaper as soon as it becomes wet or soiled.
5. To aid the healing of diaper rash, increase the airflow to the diaper region by letting the child go without a diaper for short periods of time and using oversized diapers until the rash goes away.
6. If using disposable diapers, use "super absorbent" to reduce skin wetness.
7. If using cloth diapers, avoid rubber pants. Use only overwraps that allow air to circulate.
8. Expose healthy or only slightly irritated skin to air (not heat) to dry completely.
9. Avoid use of prepackaged diaper wipes due to possible exacerbation of rash.

EQUIPMENT:
Mild, unscented soap and water
Diaper
Ointments (consult with Pediatrician)
Gloves

PROCEDURE:
1. Adhere to Standard Precautions.
2. Remove diaper.
3. Wash diaper area with mild soap and water, rinse with water and gently pat dry.
   [Note: Heavy scrubbing or rubbing will only damage the skin more.]
4. Apply ointment to protect the skin.
5. Reapply diaper.
6. Change diaper at night when baby awakens.

AFTER CARE:
1. Properly dispose of diaper.
2. Rinse cloth diapers in cold water; soak in diluted powder bleach and water solution or diluted laundry soap and water solution. Launder in mild detergent and double rinse.
3. Document in patient's record:
   a. Description of skin in diaper area.
   b. Treatment provided.
   d. Teach caregiver how to prevent and treat diaper rash.
PURPOSE:
To prevent infection of umbilical stump site.

CONSIDERATIONS:
1. Caregiver should be instructed on signs of infection, e.g., fever, presence of a foul odor, purulent discharge, redness or swelling around stump, which should be reported to the physician.
2. Expose stump to air as much as possible to facilitate drying. Shirt should be rolled up above umbilical stump and diaper folded below umbilical stump.
3. The umbilical stump is usually separated completely in 7 to 10 days but can take up to 6 weeks.
4. As the umbilical stump separates, brown exudate may be noted.
5. Sponge baths are to be given until the umbilical stump has fallen off.
6. Using alcohol is no longer a recommended method to clean umbilical stump.

EQUIPMENT:
- Cotton swab or soft washcloth
- Mild/neutral soap
- Gloves

PROCEDURE:
1. Adhere to Standard Precautions.
2. Wipe base of cord or stump site with soaked cotton swab/washcloth with warm water and mild/neutral soap at each diaper change to facilitate the drying process.
3. Once stump has fallen off, wash umbilical area gently during normal bath. Dry thoroughly.

AFTER CARE:
1. Document in patient's record:
   a. Description of umbilical stump site.
   b. Treatment provided.
   d. Instructions given to caregiver.
   e. Physician notified of any observed signs of cord infection or other concerns.
PURPOSE:
To obtain accurate weight of infant and assess for weight gain or loss.

CONSIDERATIONS:
1. Weight may be recorded in grams, kilograms or ounces, per physician preference.
2. A newborn may lose up to 8-10 percent of their weight after birth but should return to birth weight and begin regaining weight by 10-14 days of age.
3. Average weight gain in a newborn is 0.5-1 ounce/day (14-28 grams/day).
4. The ideal time to weigh an infant is before a feeding.
5. The nurse should weigh all infants on the initial assessment.

EQUIPMENT:
Barrier
Towel or small blanket
Scale
Diaper

PROCEDURE:
1. Adhere to Standard Precautions.
2. Place scale on flat surface.
3. Place barrier on scale.
5. Undress infant completely.
6. Place infant on scale; maintain hand over scale to ensure infant’s safety.
7. Observe scale for weight.
8. Redress infant.

AFTER CARE:
1. Clean scale after each use. (See Cleaning and Disinfecting of Equipment and Instruments.)
2. Document in patient's record:
   a. Weight, time of weighing and time of last feeding.
   b. Plot weight on appropriate growth chart under "weight," if indicated.
   c. Report to physician any weight loss and/or weight gain that exceeds normal limits.
   d. Educate the caregiver/parent about normal weight changes for the newborn.
PURPOSE:
To express milk when unable to nurse infant; to relieve engorgement; and to stimulate milk production.

CONSIDERATIONS:
1. There are a variety of breast pumps, including manual, battery-operated and electric. The most effective manual pumps are cylindrical. Bulb-type pumps should NOT be used because of the possibility of trauma to the nipples and because sterility cannot be maintained due to milk that gets trapped in the bulb. Follow manufacturer's instructions for use and cleaning of pump.
2. Do not apply soap to nipples. Soap dries out the nipples and can increase problems with dryness and cracking.
3. Use only prescribed nipple creams or thin layer of breast milk after pumping to help prevent or heal irritated and cracking nipples.
4. Use of pumps may cause irritation and cracking of nipples, resulting in risk of infection, so the nipples should be assessed frequently for problems.
5. To promote "let down," the following methods may be utilized:
   a. Massaging breasts.
   b. Taking a warm shower.
   c. Applying warm compresses just prior to pumping.
   d. Minimizing distractions.
   e. Relaxing and focusing on the baby, e.g., pictures, tapes.
6. Pumping should not be uncomfortable or painful. Patient should discontinue pumping at first sign of discomfort.
7. Pump should be taken apart and thoroughly cleaned after every use. Follow manufacturer's instructions for use and cleaning of pump.
8. Patient should be advised not to use bra pads with plastic liners and to let nipples air dry 10 to 15 minutes after pumping to help prevent cracked nipples.
9. The manual pump is relatively efficient for short-term or intermittent use.
10. Hand expression and manual pumps require that the patient have ordinary strength and hand coordination.

EQUIPMENT:
Pump of choice
Bottle for milk storage
Towel
Gloves

PROCEDURE:
1. Adhere to Standard Precautions.
2. Identify patient and explain procedure to patient.
3. Remove bra flap and nursing pads carefully. If nipple is sticking to the bra or pad, use warm water to gently dislodge.
4. Observe nipples for irritation and/or cracks.
5. To improve suction, have patient moisten breast before applying flange.
6. Put pump to breast over nipple and areola, ensuring the nipple is centered in the flange so that it does not rub against the side. Only use as much suction as needed to maintain milk flow into collection container. Time limit of 15 minutes on each breast is recommended.
7. Switch breasts when milk flow decreases and switch again several times during each session to effectively stimulate the let down reflex.
8. Allow breasts and nipples to air dry. Apply thin layer of breast milk or prescribed nipple cream.

AFTER CARE:
1. Store milk in plastic bottles or plastic bottle liners.
2. Expressed milk can be stored in the refrigerator (39 degrees Fahrenheit or -4 degrees Celsius) if used within 5 days or frozen for longer storage periods. Frozen milk may be stored in the freezer compartment of a refrigerator (5 degrees Fahrenheit or -15 degrees Celsius) for 2 weeks or in the freezer compartment of refrigerator with separate doors (0 degrees Fahrenheit or -18 degrees Celsius) for 3 months. Frozen milk may be stored in a deep freezer (-4 degrees Fahrenheit or -20 degrees Celsius) for 6 months. Store it at the back of the freezer, never in the door section. Instruct patient to date each bottle or plastic liner. Use the oldest milk first.
3. If transporting milk to the hospital, use an ice chest.
4. Once thawed, never refreeze milk. To defrost, thaw in refrigerator (up to 12 hours) or under warm running water. DO NOT boil or warm in microwave. Use thawed milk within 24 hours.
5. Document in patient's record:
   a. Condition of nipples, amount of milk pumped and ease of procedure.
   b. Instructions given to patient.
PURPOSE:
To express breast milk when unable to nurse infant; to relieve engorgement; and to stimulate milk production.

CONSIDERATIONS:
1. Manual expression takes practice and, with encouragement, can be very effective.
2. Manual expression can be used when breasts are engorged, when weaning, when breast milk is needed during periods of separation from the infant or after nursing if infant did not nurse well.
3. Massaging breast or applying warm compresses prior to expression aids in the "let down" process.
4. Manual expression is a learned skill; effectiveness improves with practice.

EQUIPMENT:
Clean container (jar or glass that has been through the dishwasher or washed with hot, soapy water and air-dried)
Towel
Plastic bottle
Plastic bottle liner
Gloves

PROCEDURE:
1. Adhere to Standard Precautions.
2. Identify patient and explain procedure to patient.
3. Instruct patient in importance of washing her hands before expressing milk.
4. Seat patient comfortably. Apply warm compresses to her breast and instruct her in breast massage as follows:
   a. Use flattened hands to exert gentle pressure in a circular motion on the breast starting at the chest wall and spiraling around the breast toward the areola. Use palms of hands, not fingers, for firm pressure. The warm compresses and breast massage should help stimulate "let down."
   b. Position thumb pad 1 inch behind the nipple and finger pad 1 inch behind the nipple to form a "C." Avoid cupping the breast.
   c. Push straight in toward chest wall without spreading fingers apart. Roll the thumb and fingers forward simultaneously to compress and empty milk reservoirs without hurting breast tissue.
   d. Rhythmically repeat position, push, roll and rotate the thumb and finger position to empty other milk reservoirs.
   e. DO NOT slide fingers on skin, keep them gently against skin.
   f. Switch to other breast after 3 to 5 minutes. Alternate using massage and expression until breasts are empty or engorgement relieved.
5. Transfer expressed milk into clean plastic bottle or plastic bottle liner, which can be tied with rubber band and frozen.
6. Expressed milk can be stored in the refrigerator (39 degrees Fahrenheit or -4 degrees Celsius) if used within 5 days or frozen for longer storage periods. Frozen milk may be stored in the freezer compartment of a refrigerator (5 degrees Fahrenheit or -15 degrees Celsius) for 2 weeks or in the freezer compartment of refrigerator with separate doors (0 degrees Fahrenheit or -18 degrees Celsius) for 3 months. Frozen milk may be stored in a deep freezer (-4 degrees Fahrenheit or -20 degrees Celsius) for 6 months. Store it at the back of the freezer, never in the door section. Instruct patient to date each bottle or plastic liner. Use the oldest milk first.
7. DO NOT re-freeze breast milk.
8. DO NOT save milk from used bottle for use at another feeding.

AFTER CARE:
1. Instruct the patient in the procedure and proper storage of breast milk.
2. Document in patient’s record:
   a. Condition of nipples, amount of breast milk expressed and ease of procedure.
   b. Instructions given to patient.
   c. Patient’s ability to express milk.

RELATED PROCEDURE:
Postpartum: Breast Pump Use
PURPOSE:
To promote cleanliness and comfort, and prevent infection in the postpartum mother.

CONSIDERATIONS:
1. Perineal cleansing should be done after each bowel or bladder elimination.
2. Perineal cleansing, drying, and pad applications should be done from front to back to prevent contamination.

EQUIPMENT:
Clean washcloth
Clean towel
Mild soap
Warm running water
Perineal pads
Impervious trash bag
Jar or squeeze-bottle
Gloves

PROCEDURE:
Perineal Care:
1. Adhere to Standard Precautions.
2. Identify patient and explain procedure to patient.
3. Remove soiled perineal pad and place in appropriate container.
4. Observe the perineal area for redness, edema, ecchymosis, drainage, approximation of wound, if applicable, and hemorrhoids. Postpartum patients may develop edema and hematomas without having an episiotomy or laceration.
5. Instruct patient to check type and amount of lochia and to report anything unusual.
7. Cleanse perineal area with clean washcloth moistened with warm water and soap.
8. Rinse cloth and perineal area well. May use jar or squeeze-bottle of warm, tap water for squirting or pouring water over the perineum while seated on toilet.
9. Dry area well with clean towel.
10. Apply medication, if prescribed.
11. Apply perineal pad, instruct patient to avoid touching the side of the perineal pad that will be worn next to the perineum.

Sitz Bath: if ordered
In addition to the above, if patient has sutures, instruct her to take Sitz bath after perineal care, for 20 minutes, at least two times a day.
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Clean tub prior to and after use.
4. Fill tub with water. Water should be 4-6 inches deep with patient sitting in the tub.
5. Test water before use. Cold sitz baths have been found to relieve perineal episiotomy pain better than warm baths.
PURPOSE:
To provide skilled nursing care in a follow-up home visit to the postpartum mother and infant.

CONSIDERATIONS:
1. Postpartum mother and infant leave the hospital within 72 hours of delivery and their next scheduled medical appointments may not be for several weeks.
2. The birth of a baby with the resultant family life changes is one of life's major transitions. Many concerns, questions and adaptations of the family occur in the first several weeks.
3. The home healthcare nurse can help the family adapt to the realities of the home situation to the healthcare needs of the mother and infant.
4. A home visit on postpartum day three may be most effective as jaundice may occur at this time and mother's milk may be appearing.

EQUIPMENT:
- Measuring tape
- Infant scale
- Stethoscope
- Gloves
- Sphygmomanometer
- Thermometer

PROCEDURE:
1. Adhere to Standard Precautions.
2. Identify patients (mother and infant) and explain procedure to patient (mother).
3. Begin the home visit by encouraging the family to talk about how things have been going and to get information about any special concerns of questions they have.
4. Perform a physical assessment of both mother and infant to determine physiologic adjustments and the presence of any existing complications.
5. Assess mother's psychological adjustment according to the usual postpartum states and screen for any signs of postpartum depression.
6. Assess family interactions, family-infant bonding and sibling adjustment.
7. Assess adequacy of infant care-taking abilities, support systems and resources.
8. Observe home environment for safety hazards.
9. Provide care to mother and/or infant, as prescribed by their primary care provider or according to agency procedures.
10. Provide appropriate instructions based on identified needs regarding self and infant care.
11. Observe a feeding session (breast or bottle) to assess accuracy and success with feeding method.
12. Teach importance of both maternal and infant nutrition.

AFTER CARE:
1. Notify physician of the presence of possible physiological conditions/symptoms found on assessment of either newborn or mother.
2. Instruct the patient about the symptoms that she should report to her physician or to the infant's physician immediately, e.g., high fever, difficulty breathing, difficulty arousing infant, diarrhea and/or vomiting.
3. Give family written information that reinforces the verbal instructions.
4. Refer family to appropriate community agencies and resources.
5. Document all findings, instructions and referrals in the patient's record.
PURPOSE:
The Edinburgh Postnatal Depression Scale has been developed to assist primary care health professional to detect mothers suffering from postnatal depression, a distressing disorder more prolonged than the “blues” which occurs in the first week after delivery and is less severe than puerperal psychosis. Research studies reveal that postnatal depression affects between 10%-20% of women and that many depressed mothers remain untreated. These mothers may cope with their baby and with household tasks, but their enjoyment of life is seriously affected and it is possible that there are long-term effects on the family.

GENERAL GUIDELINES:
The EPDS consists of ten short statements. The mother underlines which of the four possible responses is closest to how she has been feeling during the past week for all ten questions. Most mothers can complete the scale without difficulty in less than five minutes. The validation study showed that mothers who scored above threshold 92.3% were likely to be suffering from a depressive illness of varying severity. A careful clinical assessment should be carried out to confirm the diagnosis. The scale indicates how the mother has felt during the previous week and may be repeated after two weeks. This scale will not detect mothers with anxiety neuroses, phobias, or personality disorder.

EQUIPMENT:
The Edinburgh Postnatal Depression Scale

RECORD:
Have the mother fill in her name, address, baby’s age, date, and then answer the ten questions. The completed form will be forwarded to the mother’s Physician with the original to be kept in the Mother’s chart and stored in Medical Records Department.

FAMILY EDUCATION:
The family is to be given the state published educational material on Postpartum Depression, signs/symptoms, resources available in the community and the PPD Public Hotline Number: 800-328-3838.

PROCEDURE:
Explain the purpose of the scale to the mother, she should not discuss her answers with others, and she is to answer all ten questions. Inform the mother/family that the completed form will be given to her Physician. Administer the EPDS to the mother.

A feeding tube supplies food or medicine directly to the stomach.
The Edinburgh Postnatal Depression Scale has been developed to assist primary care health professionals to detect mothers suffering from postnatal depression, a distressing disorder more prolonged than the “blues” (which occur in the first week after delivery) but less severe than puerperal psychosis. Previous studies have shown that postnatal depression affects at least 10% of women and that many depressed mothers remain untreated. These mothers may cope with their baby and with household tasks, but their enjoyment of life is seriously affected and it is possible that there are long term effects on the family.

The EPDS was developed at health centers in Livingston and Edinburgh. It consists of ten short statements. The mother underlines which of the four possible responses is closest to how she has been feeling during the past week. Most mothers complete the scale without difficulty in less than 5 minutes. The validation study showed that mothers who scored above threshold 92.3% were likely to be suffering from a depressive illness of varying severity. Nevertheless, the EPDS score should not override clinical judgment. A careful clinical assessment should be carried out to confirm the diagnosis. The scale indicates how the mother has felt during the previous week and in doubtful cases, it may be usefully repeated after 2 weeks. The scale will not detect mothers with anxiety neuroses, phobias or personality disorders.

**Instructions for Users:**

1. The mother is asked to underline the response that comes closest to how she has been feeling in the previous 7 days.
2. All ten items must be completed.
3. Care should be taken to avoid the possibility of the mother discussing her answers with others.
4. The mother should complete the scale herself, unless she has limited English or has difficulty with reading.
5. The EPDS may be used at 6-8 weeks to screen postnatal women. The child health clinic, postnatal check-up or a home visit may provide suitable opportunities for its completion.

**Guidelines for Evaluation:**

Response categories are scored 1, 2 and 3 according to increased severity of symptom. Questions 3,5,6,7,8,9,10 are reverse scored (i.e., 3,2,1,0)

Individual items are totaled to give an overall score. A score of 12+ indicates the likelihood of depression, but not its severity. The EPDS score is designed to assist, not replace, clinical judgment. Women should be further assessed before deciding on treatment.
As you have recently had a baby, we would like to know how you are feeling. Please UNDERLINE the answer that comes closest to how you have felt IN THE PAST 7 DAYS.

1. I have been able to laugh and see the funny side of things.
   - As much as I always could
   - Not quite so much now
   - Definitely not so much now
   - Hardly at all

2. I have looked forward with enjoyment to things.
   - As much as I ever did
   - Rather less than I used to
   - Definitely less than I used to
   - Hardly at all

3. *I have blamed myself unnecessarily when things went wrong.
   - Yes, most of the time
   - Yes, some of the time
   - Not very often
   - No, never

4. I have been anxious or worried for no good reason.
   - No, not at all
   - Hardly ever
   - Yes, sometimes
   - Yes, very often

5. *I have felt scared or panicky for no very good reason.
   - Yes, quite a lot
   - Yes, sometimes
   - No, not much
   - No, not at all
6. *Things have been getting on top of me.

Yes, most of the time I haven’t been able to cope at all
Yes, sometimes I haven’t been coping as well as usual
No, most of the time I have coped quite well
No, I have been coping as well as ever

7. *I have been so unhappy that I have had difficulty sleeping.

Yes, most of the time
Yes, sometimes
Not very often
No, not at all

8. *I have felt sad or miserable.

Yes, most of the time
Yes, quite often
Not very often
No, not at all

9. *I have been so unhappy that I have been crying.

Yes, most of the time
Yes, quite often
Only occasionally
No, never

10. *The thought of harming myself has occurred to me.

Yes, quite often
Sometimes
Hardly ever
Never