THE VISITING NURSE ASSOCIATIONS OF AMERICA

19TH EDITION VNAA CLINICAL PROCEDURE MANUAL

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SECTION 11: MATERNAL & NEWBORN

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KEY POINTS

1. Fetal movement counting:
   a. Method by which a pregnant mother quantifies the movements she feels to assess the condition of the baby.
   b. The purpose is to reduce perinatal mortality by alerting caregivers to when the baby is experiencing complications, in time to intervene before fetal death.
2. Reduction in fetal movement is associated with:
   a. Fetal complications
   b. Fetal hypoxia
   c. Intrauterine growth restriction
   d. Fetal death
3. Fetal movements vary in healthy fetuses.
   a. Some babies are more active than others.
   b. Some mothers are better at recognizing fetal movements.
   c. Most primigravidaes begin perceiving fetal movement at 18 – 20 weeks; multigravidaes at 16 – 18 weeks.
   d. Evidence indicates babies are most active at 28 – 34 weeks gestation, with a decrease in late pregnancy.
4. The Cardiff Count-to-10 is one method for counting fetal movements and is used in this procedure.
   a. Several methods are reported in the literature, but evidence indicates good adherence with this method.
   b. Start using the method at 27 – 28 weeks gestation.
   c. Fetal movements include kicks, rolls and turns as perceived by the mother.
   d. Best to perform procedure:
      1) At same time each day
      2) About one hour after a meal
      3) While lying quietly on left-side
   e. May be ordered once a day, or 2-3 times a day
   f. Keep a record of the counts for each day.
   g. Report if fetal movements are decreasing each day, or if it takes longer to note 10 movements.
5. Other guidelines for reporting decreased fetal movements to primary care provider include when there are:
   a. No movements in the morning.
   b. Fewer than 10 movements in 3 hours.
   c. Fewer than 8 movements in 8 hours.
   d. Parameters for when to report to the primary care provider should be set by the provider.

EQUIPMENT

Fetal Movement Counting: Your Baby's Activity Record
Clock
Scrap paper
Pen or pencil

PROCEDURE

1. Identify the patient. Adhere to standard precautions. Perform hand hygiene.
2. Explain to mother the purpose of performing the procedure. "A slowing or stopping of fetal movement may mean the baby needs some attention from the primary care provider."
3. Provide mother with written instructions and a chart, such as *Fetal Movement Counting: Your Baby's Activity Record*, for recording fetal movements.
4. Instruct the mother to:
   a. Choose a place and a time of day when she can pay attention to the fetal movements.
      1) Best place is lying down.
      2) Best time is about one hour after a meal.
   b. Empty bladder and lie down on left side. If unable to lie down, sit quietly with feet and legs propped up or supported.
   c. Mark starting time on the *Baby's Activity Record.*
   d. Start counting each movement (kicks, rolling or turning), ticking them on the scrap paper, until 10 fetal movements are reached.
   e. Mark ending time on chart.
   f. Determine and chart number of "Minutes to Reach 10."
5. Ask expectant mother to provide a teach-back of the procedure.
6. If mother has difficulty understanding procedure, help mother identify kicks and movements while palpating mother's uterus.

AFTER CARE

1. Communicate with primary care provider about:
   a. Parameters about when to report
   b. Significant decrease in fetal movements
2. Instruct patient to:
   a. Bring the *Baby's Activity Record* to appointments with primary care provider.
   b. Contact primary health care provider if count is less than parameters established.
3. Document in the patient's medical record:
   a. Instructions given to patient
   b. Patient's ability to teach back instructions given and correctly identify movement
   c. Communication with primary care provider

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PATIENT EDUCATION RESOURCE

Utah Department of Health. (n.d.). *Fetal movement counting: Your baby's activity record.*

KEY POINTS

1. Fetal heart rate (FHR) is an indication of the fetus' health.
   a. Doppler devices are non-invasive devices used in home care to determine FHR.
   b. Dopplers use ultrasound waves to transmit the sounds made by the fetal heart.
   c. Doppler ultrasound waves have no known adverse effects on mother or baby.
2. FHR Dopplers:
   a. Hand-held devices that can be carried in the clinician's visit bag
   b. Consist of a probe and a digital display screen which shows the FHR
   c. Need to use ultrasound transmission gel to better transmit the sound.
   d. Built-in speakers enable hearing of the FHR.
   e. Most models use regular 1.5 volt alkaline batteries.
   f. Some come with probe shields; some require cleaning and disinfection.
3. Listening for FHR:
   a. Dopplers are usually used in home care after the 20th week gestation.
   b. Fetal heart sounds are best heard at the center of the baby's back.
   c. If possible, try to determine the baby's position by palpation.
      1) FHR is heard best over the baby's back.
      2) Usually heard in lower quadrants, between synthesis pubis and umbilicus, on either side of the uterus (i.e. laterally).
      3) If the head is down, and the baby's back is to the right side, the FHR will best be heard in the lower right quadrant.
      4) If the head is up, and the baby's back is to the left side, the FHR will be heard best in the upper left quadrant.
   d. Ensure the fetal pulse has been obtained and not the mother's.
      1) Check mother's pulse against rate from Doppler.
      2) If mother's pulse and Doppler reading are the same, readjust the Doppler probe.
4. FHR is usually between 110 – 160 beats per minute.
   a. >160 is fetal tachycardia
   b. <110 is fetal bradycardia
   c. An irregular pulse is abnormal.
   d. Obtain acceptable parameters from the primary care provider.

EQUIPMENT

Fetal Doppler
Ultrasonic gel
Alcohol pads or antimicrobial pads
Disposable probe shield, if available for model
Batteries, back-up in case needed

PROCEDURE

1. Identify the patient. Explain the procedure. Adhere to standard precautions. Perform hand hygiene.
2. Assist patient into a comfortable, supine position.
3. Palpate the abdomen trying to identify the baby's head, buttocks and back.
4. Turn the Doppler on, adjust the volume, and wait for self-test procedure to finish.
5. Place a liberal amount of ultrasound transmission gel on the abdomen.
6. Cover the transducer with a disposable shield (if available with model).
7. Place the face of the transducer flat against the abdomen where you believe you palpated the baby's back.
8. If unable to obtain the FHR, adjust the placement of the transducer while listening for the fetal heart sound.
9. Once the fetal heart signal has been located, hold the transducer in place with as little movement as possible.
10. Note the FHR displayed in the screen.
11. Turn unit off.
12. Wipe excess gel from the patient's abdomen and transducer.
13. Wipe transducer with antimicrobial wipe before returning to the carrying case.

AFTER CARE

1. Communicate with primary care provider about:
   a. Parameters for notification
   b. FHR < 110 or >160
2. Review with primary care provider signs and symptoms to report to primary care provider.
3. Document in patient's medical record:
   a. Fetus position
   b. Heart rate and location
   c. Patient's response to procedure
   d. Patient education provider
   e. Communication with primary care provider

REFERENCES

Bindler, R., Ball, J., & Ladewig, P. (2011). *Clinical skills manual for maternal & child nursing care.* Upper Saddle River, NJ: Pearson.

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KEY POINTS

1. This procedure outlines the expected interventions that should occur during a routine visit of a patient being seen for gestational diabetes.
2. Gestational diabetes (GDM):
   a. GDM is defined as any glucose tolerance with onset during pregnancy.
   b. Usually diagnosed in second half of pregnancy.
   c. Caused by hormonal changes which increase insulin resistance even as insulin requirements increase.
   d. Treated with diet, oral antihyperglycemics and insulin.
3. Risk factors for GDM:
   a. BMI > 29
   b. Older maternal age
   c. Family history of DM
   d. Previous GDM
   e. High intake of dietary fat
   f. Low level of physical activity
4. Common risks of GMD include:
   a. Maternal risks:
      1) Hydramnias (increased amniotic fluid) associated with premature rupture of members and labor
      2) Preeclampsia and eclampsia
      3) Ketoacididosis
      4) Urinary tract infection and monilial vaginitis
   b. Fetal/neonatal risks:
      1) Congenital anomalies of heart, nervous and skeletal systems, especially sacral agenesi
      2) Macrosomia (large for gestational age) caused by baby producing extra insulin that uses mother's excessive glucose for growth
      3) Shoulder and traumatic birth injuries, or need for cesarean birth related to macrosomia
      4) Hyperinsulinemia, which can cause severe hypoglycemia after birth
      5) Respiratory distress syndrome caused by hyperinsulinemia, which decreases surfactant production
      6) Polycythemia in response to mother's glycosylated hemoglobin, which decreases oxygen release
      7) Hyperbilirubinemia related to polycythemia
5. Goals for care include:
   a. Effective self-management, maintaining glucose within parameters
   b. Healthy fetal development and birth
6. Orders for the women with GDM should include:
   a. Frequency of blood glucose monitoring (usually 4 times/day: fasting, and 1 – 2 hours after meals
   b. Parameters for blood glucose level
      1) Fasting: ≤ 95 mg/dL
      2) 1 hour post meal: ≤ 140 mg/dL
      3) 2 hours post meal: ≤ 120 mg/dL
   c. Urine dipstick orders (optional)
   d. Oral antiglycemic and insulin orders: Usually based on blood glucose levels and anticipated activities.
   e. Diet orders
      1) Usually Carbohydrate Counting or *MyPlate* methods
      2) Refer to Dietician (optional)
   f. Physical activity orders
   g. Teaching for effective hyperglycemia management and healthy fetal development
   h. Referral to Diabetic Educator (optional)
7. A *Pregnancy Logbook* helps mothers and clinicians promote a healthy pregnancy and baby.
   a. Logbook for GDM should include
      1) Times and results of blood glucose tests
      2) Time and dose of insulin administration
      3) Time and symptoms of hypoglycemic incidents
      4) Diet and exercise logs
      5) *Fetal Movement Counts*
   b. Clinician should review and provide feedback about the trends and interventions the mother has taken to control glucose and promote a healthy pregnancy.
8. An education plan should be developed for the patient's planned length of stay in home care.
   a. Education topics should be prioritized to meet the patient's safety needs and gradually increase knowledge and confidence.
   b. Topics include:
      1) Implications of hyperglycemia for mother and baby
      2) Diabetes self-care
         a) Blood Glucose Testing
         b) Insulin Injection
         c) Hyperglycemia Assessment and Management
         d) Hypoglycemia Assessment and Management
         e) Diet, Carbohydrate Counting or MyPlate Method
         f) Exercise plan
   c. Provide a supportive relationship:
      1) Encourage adherence to *Plan of Care.*
      2) Encourage questions and concerns.

EQUIPMENT

Diabetes procedures and patient resources as per individualized education plan
Patient Log Book
Scale
Tape measure
Glucometer and test strips
Urine dipstick (optional)
Fetal Doppler (optional)

PROCEDURE

1. Identify the patient. Adhere to standard precautions. Check orders on *Plan of Care.*
2. Review patient's *Log Book*, identifying patterns and concerns related to:
   a. Blood glucose levels.
   b. Insulin schedule/doses
   c. Diet
   d. Activity/exercise level
   e. Fetal activity
3. Ask the patient about her concerns and questions.
4. Perform physical assessment, including:
   a. Vital signs, weight, urine dipstick
   b. Fundal height
   c. Fetal heart rate (using Doppler)
   d. Fetal movement
5. Assess patient's understanding and feelings, including cultural and religious implications, about the diagnosis of gestational diabetes.
6. Provide teaching according to education plan and health literacy needs.
   a. Ask for teach-back.
   b. Encourage patient to verbalize fears and concerns about the pregnancy.
   c. Clarify misconceptions.

AFTER CARE

1. Communicate with primary care provider about:
   a. Glucose levels outside parameters.
   b. Referral to Diabetic Educator, if indicated
   c. Referral to Dietician, if indicated
2. Instruct the patient to maintain *Log Book* and to report problematic symptoms.
3. Document in patient's medical record:
   a. Assessment data
   b. Blood glucose ranges
   c. Patient's ability to cope with demands of condition
   d. Patient teaching provided, including evaluation of learning with teach-back
   e. Communication with the primary care provider

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American College of Obstetricians and Gynecologists. (2013). *Gestational diabetes mellitus.* Retrieved from http://www.guideline.gov/content.aspx?id=47014

American Diabetes Association. (2014). Standards of medical care in diabetes. *Diabetes Care, 37*, S14 – S80.

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KEY POINTS

1. This procedure outlines the expected interventions that should occur during a routine visit to a patient with pregnancy-induced hypertension (PIH).
2. Two types of PIH:
   a. Gestational hypertension:
      1) Hypertension occurring for the first time after mid-pregnancy, without proteinuria
      2) Returns to normal blood pressure within 3 months of birth. If does not return to normal, mother is diagnosed with chronic hypertension.
      3) Usually treated with life style changes – diet, exercise, and reducing stress
   b. Pre-eclampsia
      1) Hypertension occurring for the first time after 20 weeks gestation with proteinuria
      2) Progressive disorder, classified as mild or severe. Most severe stage is eclampsia, characterized by seizures and coma.
      3) Resolves within 48 hours of birth and delivery of placenta
      4) Cause is unknown, but is probably related to hormones produced by placenta, which interfere with angiotensin control and other mechanisms of homeostasis.
      5) Effects on mother include CNS, vascular, renal, and liver abnormalities, which can lead to renal failure, abruptio placentae, DIC, ruptured liver, and pulmonary embolism.
      6) Effects on fetus include malnutrition, hypoxia, fetal distress and demise.
3. Mild preeclampsia signs/symptoms:
   a. BP 140/90 or higher
   b. Proteinuria 1+
   c. Mild elevation in liver enzymes
   d. Edema
   e. Usually no symptoms; mother feels fine
4. Severe preeclampsia signs/symptoms:
   a. BP 160/110 or higher
   b. Proteinuria 3+ to 4+, on 2 samples 4 hours apart
   c. Decreased urine output, < 500 mL/24 hours
   d. Impaired liver function, leading to thrombocytopenia and hemolysis
   e. Headache, blurred vision, hyperreflexia
   f. Epigastric or right upper quadrant pain (sign of imminent convulsion)
5. Severe preeclampsia requires hospitalization, but mild preeclampsia can be at home and usually includes:
   a. Bedrest to reduce stress and lower blood pressure
   b. Resting as much as possible in left side-lying position, to reduce pressure on vena cava
   c. Monitoring of blood pressure, weight and urine protein to determine signs of preeclampsia progression
   d. Teaching patient to self-monitor and record in Patient Log Book:
      1) Blood pressure
      2) Weight
      3) Urine protein
      4) Fetal movement
6. A *Pregnancy Logbook* helps mothers and clinicians promote a healthy pregnancy and baby.
   a. Logbook for PIH should include
      1) Logs/charts for daily BP, weight, urine dipstick results
      2) I and O, and bowel movement records
      3) Diet and exercise logs
      4) *Fetal Movement Counts*
   b. Clinician should review and provide feedback about the information and trends within the *Log Book* to help promote best pregnancy outcomes.
7. Orders from primary care provider should include:
   a. Orders and parameters for notification:
      1) Blood pressure
      2) Weight: Usually gain of 3 lb in a day, or 4 lb in 3 days
      3) Urine protein
      4) Fetal movement and heart rate
   b. Diet: Regular or low sodium
   c. Activity: With or without ambulation to bathroom
   d. Referral to MSW for assistance with
      1) Obtaining self-monitoring devices
      2) Child care and housekeeping responsibilities
   e. Teaching and coping/problem-solving
8. An education plan should be developed for the patient's anticipated length of stay in home care.
   a. Education topics should be prioritized to meet the patient's safety needs.
   b. Topics include:
      1) Bedrest in the lateral recumbent position, left side preferable; not on back.
      2) Diet high in protein and fiber; and adequate fluid intake
      3) Self-monitoring of BP, weight, urine protein, intake and output, and fetal movement
      4) How to keep a *Patient Log Book*
      5) Breathing/relaxation exercises and guided imagery/visualization exercises to decrease stress and lower blood pressure
      6) Activities to perform during bedrest: Online support groups, journal writing, needlework, crossword puzzles, music and reading

EQUIPMENT

Gloves
Patient's Log Book
Reflex hammer
Measuring tape
Scale
Urine dipsticks (optional)

PROCEDURE

1. Identify the patient. Explain the procedure. Check orders on *Plan of Care*.
2. Assess patient's psychosocial health:
   a. Mood, understanding and feelings about the condition
   b. Home situation and how assistance with childcare, meal preparations, and housework is being provided
   c. Problems adhering to the *Plan of Care*, including cultural or religious concerns
3. Review *Patient Log Book*.
   a. Note patterns related to:
      1) BP, weight, urine protein, I&O measurements
      2) Fetal movement counts
      3) Adherence to activity restriction and diet
   b. Discuss concerns related to reported data, asking questions and providing support.
4. Ask about symptoms of pre-eclampsia and other concerns related to pregnancy.
   a. Headache and visual disturbances
   b. Nausea, vomiting, epigastric pain
   c. Backache or contractions
   d. Constipation or leg tenderness/pain
5. Perform patient assessment including:
   a. Vital signs and weight
   b. Measurement of edema
   c. Deep tendon reflexes
   d. Fundus height
   e. Fetal heart rate
   f. Urine dipstick, if ordered
6. Provide teaching according to education plan and health literacy needs.
   a. Ask for teach-back.
   b. Encourage patient to verbalize fears and concerns about the pregnancy.
   c. Clarify misconceptions.
7. Provide emotional support.

AFTER CARE

1. Communicate with primary care provider about:
   a. Measurements outside parameters
   b. Abnormal assessment findings
   c. Non-adherence to *Plan of Care*
   d. Referral to MSW for household duty assistance, as needed
2. Instruct patient and ask for teach-back about
   a. Symptoms to report immediately
   b. Maintaining a Patient Log Book
3. Document in patient's medical record:
   a. Assessment data
   b. Patient's mood and coping ability
   c. Barriers to adhering to *Plan of Care* and strategies recommended to overcome problems
   d. Education provided to patient/caregiver and evaluation of ability to perform teach-back
   e. Communication with primary care provider

REFERENCES

London, M. L., Ladewig, P., Davidson, M., Ball, J., Blindler, R., & Cowen, K. (2014). *Maternal and child nursing.* Upper Saddle River, NJ: Pearson.

Society of Obstetricians and Gynaecologists of Canada. (2014). *Treatment of the hypertensive disorders of pregnancy.* Retrieved from http://www.guideline.gov/content.aspx?id=48057&search=preeclampsia#Section420

KEY POINTS

1. This procedure outlines the expected interventions that should occur during a routine visit of a patient with hyperemesis gravidarium.
2. Hyperemesis gravidarium (HG):
   a. Although nausea and vomiting are common at the start of pregnancy, HG is defined as:
      1) Intractable vomiting during first half of pregnancy
      2) Dehydration and ketonuria
      3) Weight loss of 5% > pre-pregnancy weight
   b. Excessive vomiting during pregnancy can cause serious fluid- electrolyte imbalance, including alkalosis, hypotension, and hypokalemia.
   c. Dehydration and severe protein and vitamin deficiencies can cause fetal developmental problems or death.
   d. HG usually peaks at 9 weeks gestation and subsides by 20 weeks.
   e. Affects between 0.3% and 2.30% of all pregnancies
   f. Women who experience hyperemesis gravidarum have a higher risk for recurrence in subsequent pregnancies.
3. Risks of hyperemesis gravidarum:
   a. Maternal risks include
      1) Dehydration, hypotension
      2) Alkalosis, hypokalemia
      3) Malnutrition, including severe protein and vitamin deficiencies
   b. Fetal risks include:
      1) Developmental anomalies
      2) Small for gestational age
      3) Low birth weight
      4) 5 minute apgar score of < 7
      5) Death
4. Goals of care include:
   a. Control of vomiting
   b. Restoration of electrolyte balance
   c. Maintenance of adequate hydration and nutrition
5. Treatments usually consist of:
   a. Nothing is given by mouth for 48 hours.
   b. IV therapy hydration therapy, via a peripheral line, until all vomiting ceases.
      1) Initial fluid administration may be up to 3,000 mL, with potassium chloride added in the first 24 hours.
      2) Some cases resolve after the patient is hydrated for several days with IV fluids, and then is able to tolerate oral fluids well.
      3) Anti-emetics may be considered. Safer choices include phenothiazines and antihistamines, but are avoided prior to 12 – 14 weeks gestation.
      4) Total parental nutrition (TPN) may be considered if symptoms persist.
      5) If IV therapy lasts longer than 2 weeks, consider PICC or a central IV line
6. An education plan should be developed for the patient's planned length of stay in home care.
   a. Education topics should be prioritized to meet the patient's safety needs and gradually increase knowledge and confidence.
   b. Topics include:
      1) Self-management of home IV therapy
      2) Possible nausea/vomiting triggers
         a) Foods high in acids, fats or seasonings
         b) Odors from cooking fried foods or foods with strong odors
         c) Odors from room deodorizers, colognes, candles , perfumes and potpourri
      3) Foods/fluids that may reduce symptoms include:
         a) Carbonated drinks that contain electrolytes
         b) Dry salty crackers eaten before getting out of bed in morning
         c) Protein-rich meals, nuts, dairy products and beans
      4) Use of breathing/relaxation and guided imagery/visualization to control symptoms and enhance coping.

EQUIPMENT

Infusion/TPN procedures
IV equipment, as indicated in appropriate procedure
Patient's *Pregnancy Log Book*
Scale
Tape measure
Fetal Doppler (optional)

PROCEDURE

1. Identify the patient. Adhere to standard precautions. Check orders on *Plan of Care*.
2. Assess patient's:
   a. Understanding and feelings about the condition
   b. Concerns for fetal well-being
   c. Knowledge and confidence with the plan of care
3. Answer questions and provide support.
4. Encourage patient to keep a *Pregnancy Log Book*, including an Intake-Output record, dietary intake, time and amount of emesis, and fetal movements.
5. Review patient's *Log Book*, reviewing trends and identifying areas of concern.
   a. Discuss areas of concern or interest.
   b. Reinforce teaching based on patient's use of record and data recorded.
6. Perform patient assessment including:
   a. Vital signs and weight
   b. Signs of dehydration
   c. Fundus height
   d. Fetal activity

   e. Fetal heart rate
   f. IV site
7. If ordered, obtain lab work.
8. Administer IV therapy as ordered, using appropriate procedure.
9. During infusion, provide patient teaching according to education plan.

AFTER CARE

1. Communicate with primary care provider about:
   a. Parameters for notification
   b. Assessment data outside parameters
   c. Progress toward goals
   d. Referrals to Dietician for diet guidance or MSW
2. Communicate and coordinate care with infusion company.
3. Ask for teach-back of teaching provided.
4. Document in patient's medical record:
   a. Assessment data captured during physical assessment
   b. Patient's ability to cope with condition and its treatment
   c. Patient's ability to provide teach-back on patient education
   d. Communication with primary care provider

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KEY POINTS

1. This procedure outlines the expected interventions that should occur during a routine visit to an expectant mother at 20 to 37 weeks gestation, who is on bedrest for preterm labor.
2. Preterm labor is diagnosed if all three of following criteria are present:
   a. Pregnancy is between 20th – 37th week
   b. Uterine contractions of 4 in 20 minutes or 8 in one hour are documented.
   c. Cervical dilation > 1 cm or cervical effacement of 80% or more
3. Risk factors for preterm labor are numerous.
   a. The more risk factors, the more likely preterm birth.
   b. Some risk factors can be controlled or managed to reduce risk.
   c. Common risk factors include:
      1) Age: < 17 or > 35 years
      2) Interval of < 6– 9 months between pregnancies
      3) Previous history of preterm birth
      4) Short cervix length
      5) Febrile or infectious illness
      6) Hypertension, diabetes, anemia
      7) Stress and lack of social support
      8) Substance abuse or domestic violence
      9) Low maternal weight/poor weight gain
      10) Long working hours and periods of standing
4. A fetal fibronectin (fFN) test is sometimes used to determine risk of preterm birth.
   a. Cervicovaginal fluid with fFN, a protein produced by fetal membranes, is predictive of birth within 7 to 14 days.
   b. Obtained using method similar to Pap smear
   c. If test is negative, risk for preterm birth in next 7 days is significantly less.
5. Signs/symptoms of labor include:
   a. Low, dull backache
   b. Menstrual-like cramps in lower abdomen
   c. Uterine contractions every 10 minutes or less
   d. Rupture of membranes
   e. Change in vaginal discharge, especially with pinkish tinge or more watery, clear and thin
   f. Feelings of pelvic pressure that feel like the baby is pressing down
6. Orders for care should include:
   a. Activity: when patient is allowed to ambulate
   b. Medications to inhibit contractions, if ordered
   c. Teaching of self-care strategies to lower risk
   d. Evaluation of home environment and ability to adhere *to Plan of Care*
7. Self-care strategies and treatments to decrease risk of preterm labor:
   a. Bedrest or frequent rest periods.
      1) Lie on left side when resting to facilitate maternal/fetal circulation.
      2) Elevate hips to decrease pressure on cervix.
   b. Maintain good hydration with 8 to 12 cups of non-caffeinated beverage/day.
   c. Empty bladder every 2 hours, while awake.
   d. Do not lift heavy objects. Instead of lifting children, sit down and have them climb on lap
   e. Avoid activities that can stimulate uterus contractions:
      1) Avoid nipple stimulation including "toughing" of nipples for breast-feeding.
      2) Curtail sexual activity that leads to orgasm.
   f. Maintain "good spirits."
      1) Discover and engage in enjoyable activities despite "bedrest."
      2) Get dressed each morning and maintain "bedrest" each day on the couch so as not to feel isolated.
      3) Consider relaxation and guided imagery exercises to decrease stress, lower blood pressure, and to enhance mood.
   g. Medication therapy:
      1) Prophylactically, if cervix is short, vaginal progesterone gel may be prescribed.
      2) Medications that decrease contractions include:
         a) Calcium channel blockers, especially nifedipine (Procardia)
         b) β-mimetics
         c) Magnesium sulfate
         d) Hyroxyprogesterone caproate (Makena) injection once a week
      3) Corticosteriods may be administered to decrease risk of preterm infant to respiratory distress syndrome and necrotizing enterocolitis.
8. An education plan should be developed for the patient's anticipated length of stay in home care.
   a. Education topics should be prioritized to meet the patient's safety needs and gradually increase knowledge and confidence.
   b. Topics include:
      1) Bedrest in the lateral recumbent position, with elevation of the foot of the bed, and use of pillows under the hips to reduce pressure on the cervix
      2) Evaluation of contractions, but palpating uterus and feeling for hardening/tightening of uterus
      3) Early symptoms of labor
      4) Keeping a *Pregnancy Log Book*, including number of contractions/hour, vaginal discharge, activities, fetal movements
      5) Self-care measures to decrease risk
      6) Self-care measures to decrease risk of depression
      7) Activities to perform during bedrest: online support groups, journal writing, needlework, crossword puzzles, music and reading.

EQUIPMENT

Gloves
Scale
Tape measure
Urine dipsticks, if ordered
Fetal Doppler
Patient's *Pregnancy Log Book*
Procedures and resources as needed, such as:
Breathing/Relaxation Exercises
Guided Imagery/Visualization Exercises
Assessment and Management of Depression
Self-Care for Depression
Teaching and Evaluation of Learning

PROCEDURE

1. Identify the patient. Explain the procedure. Check orders on *Plan of Care*.
2. Assess patient's:
   a. Mood, understanding and feelings about the condition and concerns for fetus
   b. Home situation and how assistance with childcare, meal preparations, and housework is being provided
   c. Problems adhering to the *Plan of Care*
3. Review *Pregnancy Log Book*, noting trends and concerns related to patient's recorded data.
4. Discuss concerns related to reported data, asking questions and providing support.
5. Perform patient assessment including:
   a. Vital signs and weight.
   b. Presence of edema
   c. Fundus height
   d. Fetal activity
   e. Fetal heart rate
6. Check urine with dipstick, if ordered, for protein, glucose and ketones.
7. Provide teaching according to patient's individualized education plan.
8. Provide emotional support.

AFTER CARE

1. Communicate with primary care provider:
   a. Parameters for notification
   b. Signs and symptoms of premature labor, fetal distress, or maternal complications
2. Reinforce teaching by asking for teach-back of education performed.
3. Document in patient's medical record:
   a. Assessment data
   b. Frequency and duration of contractions
   c. Education provided and evaluation of learning
   d. Communication with primary care provider, if any

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KEY POINTS

1. Mental health and supportive relationships have long-term consequences for mother and child health and well-being.
   a. Home health clinicians can identify expectant mothers who have, or are at-risk for having, psycho-social problems.
   b. Early identification and prevention strategies can enable these mothers and their babies to achieve their optimal level of health and well-being.
2. All expectant mothers should be screened for:
   a. Depression and risk for postpartum depression
   b. Domestic abuse
   c. Risk for child abuse and neglect
3. When screening is positive (patient is "at-risk"), home health clinicians, in consultation with primary care provider, can make appropriate referrals to appropriate specialists, such as:
   a. Agency psych-mental health nurses (PMHNs) or MSWs
   b. Community-based maternal-child programs for at-risk mothers and babies
   c. Community-based psychiatrists or mental health programs
4. Screening for depression:
   a. Depression screening tools include the *Edinburgh Scale* and the PHQ-9.
   b. Both of these scales can be used pre- and post-natally.
5. Screening for domestic abuse:
   a. ACOG (2014) recommends using three specific questions to determine if a woman is being physically or sexually abused. These questions are reflected in the procedure below.
   b. ACOG recommends asking these questions intermittently, as women may deny abuse at first question, but with thought, will answer more openly at the next asking.
   c. A home in which physical abuse occurs is also a risk factor for future child abuse and neglect.
   d. State laws may regulate actions that must be taken.
6. Screening for risk of child abuse and neglect:
   a. Multiple risk factors put parents at risk for abusing and neglecting their children.
   b. The more risk factors, the more likely abuse and neglect may occur. In general, risk increases with:
      1) The more stressors the mother has in her life
      2) The less tools and resources she has for dealing and coping with those stressors
   c. Risk factors for the potential of abusing or neglecting children include:
      1) Young parental age
      2) History of being abused or neglected as a child
      3) Mental health problems, e.g., depression, poor impulse control, low self-esteem, low self-efficacy
      4) Substance abuse problems
      5) Lack of family and social support, including single parenting
      6) Lack of knowledge of normal child development and ways to cope with "frustrating" behaviors
      7) Poverty, unemployment, and financial problems
      8) Having a child with "special needs"
7. Screening tools, such as the *Edinburgh*, can be:
   a. Completed and scored during the visit, discussing results immediately
   b. Completed by patient after the visit, picked up at next visit, scored after visit, and discussed at next visit

EQUIPMENT

Edinburgh Postnatal Depression Scale
Patient Health Questionnaire-9

PROCEDURE

1. Establish a therapeutic relationship. Assure privacy.
2. Explain to expectant mother that you would like to ask some simple questions and for her to complete some simple forms.
   a. Explain purpose of forms and questions is to ensure the best health of her baby and herself. "The purpose is to help identify additional ways the health team can help you and your baby."
   b. Encourage questions.
   c. Assist the patient as needed, due to literacy or health needs, to understand the questions and to complete the forms.
3. To screen for depression:
   a. Give patient the questionnaire, keeping the scoring instructions for later use.
   b. If indicated, give patient the option of completing the form now or after the visit.
   c. Ensure return of the form, and score it with instructions that came with the form.
   d. If screen is positive,
      1) Discuss responses further as appropriate, and helpful to patient.
      2) Indicate that score indicates that mom may benefit from additional interventions and you will discuss with primary care provider.
      3) Provide and discuss the *Depression Self-Care Plan,* if appropriate.
4. To screen for domestic violence:
   a. Introduce the screening by stating: "Because violence is so common in many women's lives, and because there is help available for women being abused, I ask all my patients about domestic violence."

   b. Ask the three screening questions:
      1) Within the past year, have you been hit, slapped, kicked, or otherwise physically hurt by someone?
      2) Are you in a relationship with a person who threatens or physically hurts you?
      3) Has anyone forced you to have sexual activities that made you feel uncomfortable?
   c. If the patient answers "yes" to any of the questions, further interventions are needed.
      1) Mother and child are both at high risk for injuries.
      2) Skills of MSW may be indicated.
      3) Community health and domestic abuse preventions programs may be indicated.
      4) State laws may mandate actions that must be taken.
      5) Provide mother with National Domestic Violence Hotline number: 1-800-799-SAFE (7233) or www.thehotline.org.
5. To screen for child abuse and neglect:
   a. From the patient's medical record, determine the presence of any risk factors, including:
      1) Young age or developmental issues
      2) History of depression or substance abuse problems
   b. Observe the mother, family, and the home for risk factors including:
      1) Lack of financial resources, living "in poverty"
      2) Lack of family, friends, and other sources of social support to assist mother physically and emotionally
      3) Lack of knowledge of childhood development and ways to cope with "frustrating" behaviors
   c. If number and severity of risk factors suggest a high risk, initiate supportive preventive interventions:
      1) Consult with agency MSW.
      2) Refer to community health programs for mothers and families in need of support such as Healthy Families or Nurse-Family Partnership programs.

AFTER CARE

1. Communicate with primary care provider and team members if screening positive:
   a. Report screening tool used and results.
   b. Discuss options and programs to provide support.
   c. Recommend referrals to agency resources such as PMHN or MSW.
2. Explain to patient that options for help are available and that you can help her get the help she needs.
3. Document in patient's medical record:
   a. Name of each screening tool used
   b. Score on each tool, and interpretation
   c. Patient's response to the screening
   d. Any teaching/instructions provided
   e. Any communication with primary care provider or team members

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KEY POINTS

1. Newborn assessment includes:
   a. Measurements indicating if newborn is growing normally
   b. Physical assessment
   c. Assessment of the baby's behaviors
   d. Blood testing, if ordered
2. Newborn measurements include:
   a. Length
   b. Weight
   c. Head circumference
   d. Chest circumference, as indicated
   e. Abdomen circumference, as indicated
3. Weight:
   a. After birth, can lose 8 – 10% of birth weight, but should return to birth weight by 10 to 14 days.
   b. After 10 – 14 days, weight gain should be ½ – 1 ounce/day (14-28 grams/day) or 7 oz/week.
   c. Obtain weight just before feeding to promote accurate weights.
   d. The Joint Commission (2008) highly recommends always weighing and recording children's weight in kilograms to promote medication safety.
      1) Pediatric medication doses are based on mg/kg.
      2) Conversion calculations are associated with many pediatric medication errors.
4. Physical assessment of the newborn includes:
   a. Temperature, pulse, and respirations. BP is not usually assessed in the newborn, unless specifically indicated by condition or orders.
   b. Skin color and condition, especially inspecting for signs of hyperbilirubinemia, or infection of umbilicus or circumcision sites
   c. Symmetry of head, shoulders, arms, and legs
   d. Cardiopulmonary and abdominal assessment, auscultating for heart, lung, and bowel sounds
   e. Reflexes, including rooting, grasp, blinking with sudden noise
   f. Muscle tone and symmetry of shoulders and hips, including signs of hip dysplasia
5. Assessment of baby's behavioral patterns:
   a. Sleeping
   b. Feeding
   c. Urination
   d. Bowel movements
6. Blood testing by heel stick for capillary blood may be ordered by the primary provider under certain conditions.
   a. See procedure for *Capillary Blood Specimen.*
   b. Blood test may be ordered for state-mandated screenings or for bilirubin levels.
7. Normal assessment parameters of Newborn to within first 10 days:

Assessment	Range
Length	46 – 56 cm (18 – 22 inches)
Weight	2500 – 4000 g (5 lbs 8 oz - 8 lbs 13 oz)
Head circumference	32 – 37 cm (12.5 – 14.5 inches) Should be 2 cm < head circumf.
Chest circumference	30 – 35 cm (12- 14 inches)
Temperature (axillary)	36.4° – 37.2° C (97.5° – 99° F)
Pulse	110 – 160 beats/minute; may elevate to 180 when crying
Respirations	30 – 60 respirations
Grasping reflex	Grasps and holds a finger
Moro (startle) reflex	Responds to loud noise by straighten arms and flexing knees; then arms return to chest and fingers form a C.
Rooting reflex	Responds to touch of cheek or mouth by turning and opening mouth.
Stepping reflex	When held in upright position with foot against flat surface, responds by putting one foot in front of other.
Sleeping	Average is about 16 hours/day; even more in first 2-3 days of life.
Feeding	• Erratic feeding schedules are the norm. • Breastfed: "Cluster feedings" of very frequent feedings for 2 – 3 hours, and then periods of sleep common in first days, up to 2 weeks. Pattern evolves into feedings about every 1 ½ - 3 hours, or 8 - 12 feedings/ day • Formula fed: Generally every 3 to 4 hours.
Stooling	• Breastfed: 6 – 10 small semi-liquid yellow stools/day • Formula-fed: Usually 2 – 3 semi-formed yellow/brown stools/day.
Urinating	6 – 8 times/day

EQUIPMENT

Growth Charts, as applicable to gender
Boys: Head Circumference & Weight for Length
Boys: Length & Width for Age
Girls: Head Circumference & Weight for Length
Girls: Length & Width for Age
Gloves and antimicrobial wipes
Digital thermometer

Stethoscope
Tape measure, with 1/10 centimeter markings, disposable or dedicated to patient
Scale, with measuring boards, or paper roll which can be marked to measure length
Towel or small blanket

PROCEDURE

1. Identify infant. Explain procedure and its purpose to caregiver. Adhere to Standard Precautions. Perform hand hygiene.
2. Inspect newborn's skin and muscle tone, while obtaining measurements and vital signs.
   a. Inspect for jaundice: Check sclera, conjunctival sacs, hard palate, and color of skin after blanching with finger pressure.
   b. Inspect umbilicus and circumcision sites for signs of infection.
3. Inspect/palpate head and obtain head circumference:
   a. Position the tape measure slightly above the eyebrows and pinna of the ears, and around the occipital prominence at the back of the skull.
   b. Take measurements in more than one location to ensure location of maximal circumference since infants' heads have different shapes.
4. Obtain baby's length.
   a. Place baby on a flat surface.
   b. Push down gently on knees until legs are straight.
   c. Measure from crown of head to heels.
5. Obtain weight:
   a. Place scale on flat, secure surface.
   b. Place towel on scale.
   c. Balance scale.
   d. Undress infant completely.
   e. Place infant on scale; maintain hand over scale to ensure infant's safety.
   f. Note and record weight.
6. Obtain chest circumference:
   a. Wrap the tape measure around the chest.
   b. Place it just under the axilla and at the nipple line.
7. Obtain vital signs and perform auscultation.
   a. Obtain baby's axillary temperature, while teaching mother how to use and take the baby's temperature.
   b. Obtain apical pulse, while listening for any irregularity or murmurs.
   c. Listen to breath sounds, noting respiratory rate.
   d. Listen for bowel sounds, and note frequency.
8. Check for hip dysplasia.
   a. Flex baby's knees and adduct hips.
   b. Check gluteal and thigh creases for symmetry.
9. Ask mother/parents about baby's patterns related to:
   a. Sleeping
   b. Feeding
   c. Urination
   d. Bowel movements
10. Observe mother's/father's attachment behaviors and caregiving interactions with baby.
11. Observe environment of home, and where baby sleeps.
12. Enter/plot head circumference and length/weight measurements, and compare to norms.
13. Provide teaching and address questions and concerns.
14. Clean scale and other reusable equipment. See *Cleaning and Disinfecting of Equipment.*

AFTER CARE

1. Communicate with primary care provider about:
   a. Measurements outside norms
   b. Weight loss or lack of weight gain
   c. Abnormal assessment findings
   d. Concerns about attachment, care of baby, or home environment
2. Instruct mother and father about:
   a. How to take baby's temperature
   b. Skin care, care of the umbilicus and circumcision
   c. Feeding on demand
   d. Safe sleeping
3. Document in infant's medical record:
   a. Assessment data and measurements
   b. Observations and concerns related to

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KEY POINTS

1. New mothers may be anxious about how to care for their babies. Areas of concern include:
   a. Care of baby's umbilical cord care
   b. Care of baby's circumcision
   c. How to bathe the baby
   d. How to prevent and treat cradle cap
   e. How to prevent and treat diaper rash
2. Plan adequate time to teach the mother about skin care and bathing:
   a. First, focus on instructing and modeling skin care and bathing while meeting the baby's needs for safe handling, security, and affection.
   b. Second, shift focus to return-demonstration of skin care and bathing while providing affirmation, encouragement, and guidance.
3. Umbilical cord stump:
   a. After the umbilical cord is clamped at birth, the cord stump dries and falls off within 14 days, usually at 7 to 10 days. As it dries, the cord changes from yellowish green to brown to black.
   b. Care of stump:
      1) Keep stump clean and dry.
      2) If stump becomes soiled:
         a) Wipe it clean with a water-moistened gauze. Do not immerse or soak stump.
         b) Dry completely by gently pressing a soft clean cloth around it to absorb moisture.
      3) Evidence indicates alcohol may delay healing. Do not encourage use of alcohol.
      4) Facilitate umbilicus drying.
         a) Expose as much as possible to air.
         b) Fold baby's shirt up above umbilicus and fold diaper down below it.
      5) Complications could include
         a) Infection; note purulent drainage, foul odor, or peri-umbilical redness and swelling.
         b) Bleeding, usually noted as persistent bright red oozing.
4. Circumcision care
   a. In 2012, the American Academy of Pediatrics concluded that the benefits of newborn circumcision outweigh the risks, but they indicated parents appropriately choose different options.
   b. Two methods of circumcision are common:
      1) Clamping and cutting. Circumcision normally heals in 4 to 5 days.
      2) Plastibell application. The bell's rim remains in place until the healing occurs and falls off, usually in 3 to 4 days. Allow plastibell to come off naturally even if it "hangs by a thread" for a day or two.
      3) Whitish yellow exudate is common in initial stages of healing.
   c. Care after circumcision:
      1) Goal is to keep site clean and protected with petroleum jelly until healing complete.
      2) Clean with water at each dressing change.
      3) Apply petroleum dressing or jelly to site.
      4) Diaper should not press on site. Allow extra room in diaper.
   d. Complications include:
      1) Infection; note purulent drainage, foul odor, or peri-umbilical redness and swelling.
      2) Inability to void
      3) Plastibell does not fall off, as intended, within week.
5. Guidelines for infant bathing:
   a. Do not immerse baby in water until cord stump detaches, and umbilicus and circumcision heal.
      1) Sponge bathe baby until umbilicus and circumcision heal.
      2) May provide "tub bath" in small basin after both umbilicus and circumcision healed.
   b. Keep baby from becoming chilled.
      1) Keep baby wrapped in blanket when without clothes and away from drafts.
      2) Put bath water into a container or basin. Do not run water from faucet directly over baby to prevent burns.
      3) Water should be lukewarm – about body temperature or 100 degrees.
      4) Test temperature with own hand, forearm, or elbow before using it on baby.
   c. Baby's skin is fragile; babies less than 32 weeks gestation have very fragile skin.
      1) May only need complete bath twice a week or every other day.
      2) Use mild cleansing agents sparingly.
      3) Use neutral hypoallergenic soap without perfumes or dyes.
      4) Areas of the baby's body may not need any soap; warm water will be sufficient.
   d. Oils and lotions are rarely indicated. They can clog pores or cause allergies.
      1) If skin is very dry or peeling, may use a little A&D or petroleum jelly.
      2) May use petroleum jelly or mineral oil lightly and for only several minutes for cradle cap. Then shampoo and rinse away.
   e. Avoid using powder!
      1) Inhaled powder can cause respiratory distress or illness.
      2) Never shake powder onto a baby!
6. Cradle cap – infantile seborrheic dermatitis:
   a. Presents as patchy white or yellow scales on baby's scalp
   b. Etiology probably related to influence of maternal hormones on baby's sebaceous glands and/or fungal colonization.

c. Prevention and treatment:
   1) Shampoo daily with a mild shampoo.
   2) Use very soft brush to gently brush scalp – a soft toothbrush works well.
   3) Rinse scalp thoroughly.
d. If cradle cap persists despite daily shampooing:
   1) Apply petroleum jelly or mineral oil lightly to scalp.
   2) Allow to "sit" for several minutes.
   3) Shampoo, brush scalp with a soft brush gently to lift scales and rinse.

7. Diaper rash – diaper dermatitis:
   a. Presents as inflammation in the diaper area.
   b. Multiple causes include:
      1) Irritation of skin from wetness, feces, type of diaper, irritants in foods mother eats, etc.
      2) May be associated with candida or secondary infection with staphlococus.
   c. Prevention and treatment:
      1) Keep skin clean and dry, by changing diapers frequently and rinsing baby's bottom with water during diaper change.
      2) Apply A&D, petroleum jelly, or zinc oxide ointment to clean skin before diapering.
      3) Encourage air circulation. Leave diaper area open to air for short time. Use over-sized diapers. Avoid rubber/plastic pants. Wash cloth diapers with a little bleach and double rinse.
      4) Notify provider if rash worsens despite care, or if blisters or pustules appear.

EQUIPMENT

Bath blanket or towels, to wrap and dry baby
Mild soap and clean washcloth
Cotton balls, for eye care, optional
Container or basin, to hold water for sponge bath
Clean sink, basin or baby bath, for "tub bath"
Soft baby hairbrush or soft toothbrush, for cradle ca
A&D ointment, petroleum jelly, mineral oil, zinc oxide, s
needed for dry skin, cradle cap or diaper rash
Diaper and clothes

PROCEDURE

1. Identify patient. Adhere to standard precautions. Perform hand hygiene.
2. Assess baby's age, umbilical status, and circumcision status.
3. Determine type of bath to give – sponge or "tub."
4. Clean a sink or use a basin; ensure clean working surface next to sink/basin. Assemble supplies.
5. Fill clean sink or basin with about 3 to 4 inches of lukewarm water. Test water.
6. Place newborn on a towel or pad.
7. Undress baby and provide warmth by wrapping in a baby bath blanket or covering with a towel.
8. Cleanse baby's eyes.
   a. Wrap a clean washcloth around index finger and moisten it with water or
   b. Moisten cotton balls with water.
   c. Clean from inner to outer canthus with one stroke, using a new place on washcloth or a new cotton ball for each eye.
9. Wash face with clear water and washcloth.
10. Wash baby's hair.
    a. Support baby in a football hold (head in hand) and position head over basin.
    b. Scoop a little water onto baby's head and apply small amount of baby shampoo.
    c. Gently wash baby's hair with soap and water.
    d. May use a soft-bristled brush to lightly brush scalp to prevent or treat cradle cap.
11. Wash rest of baby's body:
    a. If giving sponge bath:
       1) Place baby wrapped in blanket, on pad.
       2) Keep as much of the baby's body covered as possible while sponge bathing to keep warm and feeling of secure.
    b. If giving bath in sink or basin:
       1) Remove bath blanket.
       2) Cradle baby in non-dominant arm, using cradle hold (head in crook of arm).
       3) Gently immerse baby in water, while supporting and making baby feel secure.
       4) Immerse to level of chest to decrease evaporative heat loss.
12. Wash body, legs, and arms giving special attention to skin folds and creases.
13. Cleanse genital area with soap and water.
    a. Female babies: Cleanse gently from front to back; wipe any stool from labia.
    b. Male babies:
       1) New circumcision: Gently clean with water.
       2) No circumcision: Never forcibly retract foreskin. Gently retract until resistance met, and clean penis with soap and water.
14. Wash back and buttocks with a little soap.
15. After bathing, dry the newborn immediately by patting the skin dry. Do not rub.
16. If baby's umbilicus has not healed, wipe clean, if necessary. Dry by absorbing moisture.
17. If baby's circumcision has not healed, apply petroleum gauze or jelly to site.
18. If baby has diaper rash, apply A&D ointment, zinc oxide ointment, or petroleum jelly to protect skin.
19. If baby has dry, peeling or chaffing areas, apply a scant amount of A&D ointment or petroleum jelly.
20. Diaper and dress baby as indicated by weather conditions.

AFTER CARE

1. Communicate with primary care provider if:
   a. Any signs of complications of umbilicus or circumcision such as infection or persistent bright red oozing from umbilicus
   b. Signs of candida or staphylococcus skin infections such as blisters, pustules, or non-healing skin condition
   c. Persistent bright red oozing from umbilicus
2. Instruct the caregiver on the precautions for safe handling of the newborn while bathing.
   a. Demonstrate the football hold and cradle holds.
   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.
3. Instruct caregiver in
   a. Umbilical care, circumcision care, prevention of cradle cap and diaper rash, as needed
   b. Signs of skin infection or complications to report
4. Document in patient's record:
   a. Condition of umbilicus
   b. Condition of circumcision if applicable
   c. Condition of baby's skin, especially scalp and diaper areas
   d. Type of bath given and by whom
   e. Mother and baby's response to care
   f. Any teaching provided, and evaluation of learning with teach-back or return demonstration
   g. Any communication with primary care provider

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KEY POINTS

1. Bottle-feeding a newborn may be a choice or a necessity.
   a. Mother's personal situation may preclude breast-feeding; other caregivers may need to feed the baby.
   b. Medical needs of baby can make breast-feeding extremely difficult or impossible.
   c. Mother's medical history or needs may present contraindications or problems such as:
      1) Previous breast surgery
      2) Need to take medications contraindicated in breast-feeding
      3) Certain illnesses, e.g., HIV, tuberculosis
      4) Certain medical treatments, e.g. certain medications, chemotherapy or radiation therapy
2. Aspects of bottle-feeding that require home health nurse's attention:
   a. Type of nipple and bottle; method of cleaning
   b. Type of formula
   c. Preparation and storage of formula
   d. Feeding the baby
3. Nipples and bottles:
   a. Nipple types include low, medium, and high flow nipples. In general, select a low-flow nipple to prevent choking from too much milk.
   b. Multiple types of bottles are available:
      1) Multiple sizes: Generally choose a bottle of 4 ounces.
      2) Made of multiple materials:
         a) Glass, plastic, disposable liners, etc.
         b) Glass and plastic bottles need to be carefully washed and cleaned.
         c) Disposable liners reduce cleaning; only nipples require careful cleaning.
         d) Plastic bottles – unless labeled BPH-free – could be harmful.
      3) Made with special features, such as vented bottles, to prevent the baby from swallowing air.
   c. The American Academy of Pediatrics (2012) indicates than in most cases, sterilization of nipples and bottles is not necessary.
      1) Certain infant or environmental conditions may make sterilization necessary.
      2) Read manufacturer's directions to determine if and how long the items can be boiled.
      3) Sterilization can be performed by boiling in hot water or by using specialized sterilization appliances.
   d. In general, nipples, caps, bottles, and items used to prepare formula can be adequately cleaned in one of two ways:
      1) Fill clean sink with hot water and add dishwashing liquid. Put all feeding items in sink and wash bottles with a bottle brush. Rinse thoroughly under running water. Place on a clean rack to air dry.
      2) Place feeding items in a dishwasher, which uses heated water and a hot drying cycle.
      3) Nipples and any areas in which milk collects need special attention. Clean with nipple brush or swish water through nipple until clean.
4. Type of formula is best determined by the parents in conjunction with the baby's primary care provider.
   a. Factors for choosing formula include baby's special needs, cost, and ease of preparation.
   b. Formulas available include milk-based and milk-free formulas.
   c. Three types of formula preparations are available:
      1) Ready-to-use formula: Easiest to use – just open and pour – but most expensive. Safest choice for immunocompromised baby or pre-term infant since contamination risk is minimized.
      2) Concentrated formula: Requires dilution with water.
      3) Powdered formula: Requires reconstitution with water. Cheapest formula, but takes the most time and effort to prepare. Presents the most risk of contamination if not prepared carefully.
   d. Read and carefully follow manufacturer's directions for formula preparation.
      1) Almost always, the prepared formula will yield 20 calories/ounce.
      2) Under or over dilution can cause the baby serious problems.
   e. In general, municipal water supplies are safe for babies and can be used for formula reconstitution "straight from the tap."
      1) Other sources of water may include excessive mineral or bacterial content.
      2) If using well water, bottled water or boiled water may be indicated to reconstitute formula.
      3) To boil water for formula preparation, bring water to rolling boil for only 1 minute (boiling more can increase mineral content). Allow to cool for 30 minutes before mixing with formula.
5. Storage of formula:
   a. Follow manufacturer's directions.
   b. "Just in time" preparation – adding formula and tap water straight to a cleaned, air-dried bottle just before feeding – cuts down concerns about storage and potential waste.
   c. Once a bottle is served to the baby, discard remainder after 1 hour.
   d. Prepared formula, not yet given to the baby, can be stored in the refrigerator for up to 24 hours and then should be discarded.

e. An open container of ready-to-feed concentrated or ready-to-use formula can be covered, refrigerated for up to 48 hours, and then should be discarded.

6. Feeding the baby:
   a. Best practice is to feed the baby "on demand" – feeding when indicating hunger and as much as baby wants during feeding. Do not coax the baby to finish the bottle.
   b. Generally, in the first month, the baby will take 2 to 3 ounces about every 3 to 4 hours. By one month, the amount will increase to about 4 ounces every 4 hours.
   c. Most babies prefer a warm bottle, but some babies will take a refrigerated bottle.
7. Orders for bottle-fed babies should include:
   a. Name of formula and calories per ounce
   b. In general, amount/feeding and number of feedings/day is not specified, as best practice is feed bottle-fed babies "on demand" – feeding when indicating hunger and as much as baby wants during feeding.
   c. For some babies with special needs, the dilution of the formula, amount/feeding and number feedings/day, may be specified in the primary care provider's orders.
   d. If more than 20 calories/ounce are ordered, consultation with a dietician may be indicated.

EQUIPMENT

Low flow nipples
Bottles (note special features and material from which bottles made)
Formula, type determined in consultation with primary care provider; one of three types:
- Read- to-feed
- Concentrate(1 part concentrate to 1 part water)
- Powder (1 level scoop to 2 oz water)

PROCEDURE

1. Identify the infant and mother (or other caregiver). Review *Plan of Care*, including orders for formula or special feeding orders.
2. Adhere to standard precautions. Model and teach hand hygiene to mother.
3. Ask mother how feedings are going if she has any questions or concerns. Address these questions and concerns before providing other teaching.
4. Ask about feedings:
   a. How often does the baby feed?
   b. How much does the baby take?
   c. How does the mother determine when the baby has taken enough of the bottle?
5. Ask mother to show you how she prepares the formula.
   a. Determine if she prepares one bottle at a time or if she prepares all the bottles for a day.
   b. Note where the formula is stored.
   c. Read the instructions with the mother about how to prepare the formula.
   d. If water is used for dilution or reconstitution, ask mother the source of the water and determine if source is appropriate.
   e. Note cleanliness of items used to prepare formula.
   f. Provide teaching as indicated.
6. Ask mother to show you how she feeds the baby.
   a. Note how she prepares/warms the bottle.
   b. Position she uses to feed the baby and interaction with baby while feeding
   c. When and how she burps the baby
   d. Provide guidance and teaching.

Preparation of formula

1. Wash hands for 20 seconds.
2. Place all supplies on a clean surface: Formula, water, nipples and bottle, and other items needed to prepare formula.
3. Check the expiration date on the formula container.
4. If formula is in a can, clean the top of the can with clean water and a paper towel.
5. Check instructions for type of water to be used.
   a. If tap water is permitted:
      1) Run water for several seconds to flush water that has been sitting in home's plumbing.
      2) Water for formula should be mixed at room temperature, or may be mixed to body temperature if preparing a "just in time" feeding.
   b. If boiled water is recommended:
      1) Boil water for one minute.
      2) Allow to cool for 30 minutes before mixing with formula.
6. Add the exact amount of formula as instructed on the label or the amount instructed by the pediatrician or dietician.
7. If multiple bottles prepared, refrigerate immediately.

Feeding the baby

1. Check the temperature of the bottle, to ensure it is not too hot or cold for the baby.
   a. A couple of drops against your wrist should be comfortable.
   b. If too cold, warm in a basin of hot water for a short time.
   c. Do not microwave, which can cause "hot spots."
2. Sit in a chair that is comfortable for both mother and baby.
3. Cradle the baby in your arm, with head in the crook of your elbow, in a semi-upright position.
4. Gently tap the nipple to the baby's cheek, which will stimulate the baby to open his/her mouth.

5. Hold the bottle at a 45° angle so the milk completely covers the nipple to prevent the baby from swallowing air.
6. Make eye contact with the baby, smile, and talk to the baby during the feeding.
7. Burp the baby after about 2 ounces, 3 minutes, or if baby shows signs of discomfort.
8. Offer the bottle again until the baby loses interest in feeding or falls asleep.

AFTER CARE

1. Document in patient's medical record:
   a. Brand and type of formula
   b. Evaluation of formula preparation, including methods used to clean nipples and bottles
   c. Mother's and baby's comfort with feeding
   d. Teaching provided and evaluation of learning with teach-back and return demonstrations

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PATIENT EDUCATION RESOURCE

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KEY POINTS

1. Healthy People 2020 and the AAP (2012):
   a. Encourage breastfeeding:
      1) Exclusively for first 6 months
      2) Continuing for the first year
   b. Recommendations are based on breast-feedings' overwhelming evidence of:
      1) Nutritional benefits
      2) Immunologic benefits
      3) Psychosocial benefits
2. Pain during breastfeeding is abnormal.
   a. Pain indicates a problem, which can and should be resolved (momentary pain during latch-on may occur, but should be fleeting).
   b. Cracked, bleeding, or exceedingly sore nipples or pain during nursing is usually caused by an "improper latch-on."
   c. Although a baby placed against a mother's abdomen can usually "find" and latch-on to the mother's breast almost independently, mother-led latch-on can resolve painful nursing.
   d. Mother can be taught how to help baby latch on correctly to minimize and resolve pain.
3. Feedings should be "on demand."
   a. Especially in first two weeks, feed early and often.
   b. The more often the baby feeds in first several days and the first couple of weeks, the better and more rapid the mother's milk production.
   c. In first 1 – 2 weeks, baby's schedule will likely be erratic and may include "clustered" feedings where baby looks to feed many times in a couple of hours – a normal and helpful behavior, which helps to establish milk production.
   d. Expect a minimum of 8 – 12 feedings or more; every 1 ½ - 3 hours or more with clustered feedings.
   e. Night feedings are important to baby's physiologic needs and mother's milk production.
   f. In general, the baby is the best judge of when and how much to nurse.
   g. Some babies are "sleepy" in the first several days and need to be encouraged to nurse by waking the baby (change diaper, remove swaddling blankets).
4. The baby can be put to the breast in multiple positions.
   a. Effective breast-feeding positions include:
      1) Cross-cradle hold
      2) Cradle-hold
      3) Football hold
      4) Side-lying position
   b. Cross-cradle position may facilitate breast-feeding and latch-on, and is used in this procedure.
5. Breast feeding teaching tips:
   a. Expect baby to nurse for about 15 – 20 minutes, before becoming totally relaxed, sleepy, and letting go.
   b. If you need to stop nursing while baby is sucking, slide one finger between your breast and baby's mouth to break "suction" before pulling baby from breast.
   c. Allow one breast to "empty" completely (breast will feel soft) at each feeding before switching to other side.
      1) Alternate breasts that you start with at each feeding so each side has a chance to empty regularly.
      2) Emptying breasts can prevent "milk plugs."
      3) Only one breast or both can be used during a nursing session, as best promotes comfort for the mother.
   d. Two common practices can interfere with adequate milk production – giving the baby supplementary feedings or using a pacifier.
      1) Whenever the baby wants to suck, let the baby suck on your breast to stimulate milk production.
      2) Pacifiers should only be considered after 4 – 6 weeks.
6. Signs that baby is getting enough milk include:
   a. 6 or more wet diapers/day by 4 - 6 days old
   b. 3 or more stools/day by 4 – 6 days old
   c. 8 – 12 feedings around the clock for first 2 to 3 months
   d. Baby gaining weight ½ - 1 oz/day
   e. Baby sucks vigorously and swallowing sounds can be heard in a quiet room.
   f. Mother feels let-down, and breasts feel softer after feeding.
7. This procedure focuses on steps in helping the mother breastfeed baby. For breast problems related to breastfeeding, see procedure *Breast Care for Breast Feeding Mother.*

EQUIPMENT

Breastfeeding Survival Guide for First Two Weeks
Positioning and Mother-Led Latch-On

PROCEDURE

1. Adhere to Standard Precautions. Wash hands. Review *Plan of Care* for special instructions.
2. Ask mother about problems and concerns with breastfeeding:
   a. Are you experiencing any pain or discomfort?
   b. Has your milk "come in?"
   c. How often is the baby nursing?
   d. For how long does the baby nurse?
   e. How often do you find the baby has a wet diaper?
   f. How often does the baby have a bowel movement?

   g. Are you getting enough sleep?
3. Examine and gently palpate mothers' breasts for signs of engorgement (hard, uncomfortably full breasts).
4. Ask mother to show you how she feeds the baby.
   a. Note how she positions the baby.
   b. Evaluate how well the baby latches-on, looking for:
      1) 140° angle of the baby's mouth to breast
      2) Most of areola is within baby's mouth.
      3) Baby's lips are rolled back because of amount of breast in baby's mouth.
5. If the mother reports painful nipples or feedings, or if you note the latch-on is not optimal, teach mother about the cross-cradle hold and mother-led latch-on.

Cross-cradle positioning and mother-led latch-on

1. Assist mother into optimal position.
   a. Sit in comfortable chair or sofa that supports back.
   b. Place feet on a hammock or footstool so lap is slightly inclined towards you.
   c. Position pillows to support arms, shoulders, and baby.
2. Hold baby in arm opposite to the breast you will use for the feeding.
   a. Hold baby's head in your hand with your fingers behind the baby's ears.
   b. Place baby's legs under your elbow.
3. Place baby's head just under breast.
   a. Baby's nose should be level with mother's nipple.
   b. Tilt head back slightly so the baby needs to "reach up" slightly to grasp the nipple.
4. Compress your areola slightly to make a "nipple sandwich."
   a. Place your thumb on top of breast and fingers under breast to compress.
   b. Keep your fingers behind the areola (1 – 1 ½ inches behind nipple) so baby can grasp most of areola.
5. Pull baby into you, so baby's body faces your body (tummy to tummy).
   a. First part of baby's face to touch your breast should be baby's chin.
   b. Touch your nipple to the skin between his nose and lip, stimulating the baby to open his/her mouth widely.
   c. Baby's mouth should look like a yawn and tongue should come forward.
   d. If baby does not open widely enough, tickle area between nose and mouth with your nipple again.
6. When baby opens mouth widely, bring his/her mouth to your nipple.
   a. Baby should get a "big mouthful" of the areola in his/her mouth.
   b. Bring baby to breast; not breast to baby.
7. Let go of fingers compressing breast.
   a. Do not worry about baby not being able to breathe.
   b. Baby can breathe well through corners of nose.
   c. Baby will "let go" if can't breathe.
8. Check that latch-on is correct.
   a. Most of your areola should be in baby's mouth, not just the nipple.
   b. Baby's lips should be "rolled back" around the breast tissue (because baby has so much of breast in mouth)!
   c. You should feel a deep "pulling" sensation. There should be no "sharp" pain during nursing. Any pain should be momentary and fleeting.

AFTER CARE

1. Indications that the mother may benefit from a referral to a lactation consultant (IBLIC) include:
   a. Mother has flat or inverted nipples, painful nipples, or other problems unrelieved by nurse's recommendations for latch on and positioning.
   b. Baby will not latch on or is not gaining weight.
   c. Mother or baby has "special needs" requiring specialist consultation.
2. Consult with primary care provider about:
   a. Baby is not gaining about ½ to 1 oz per day after the first several days when weight loss expected.
   b. Baby is gaining more than 1 ½ ounces/day.
   c. Urination or stools are not adequate.
   d. Signs of breast infection – fever, area of redness and tenderness, malaise.
   e. Request referral for Lactation Consultant, if indicated.
3. Provide teaching as appropriate, answering mother's concerns and questions.
   a. Evaluate learning *using teach-back and return demonstration* techniques.
   b. Tell mother about free National Breastfeeding Helpline 800-994-9662, which offers breastfeeding peer counselors trained by La Leche League who can give support and answer questions in English and Spanish. Available Monday – Friday, 9 am – 6 pm EST.
4. Document in mother's medical record:
   a. Assessment data for mother and baby
   b. Condition of mother's breasts and nipples
   c. Effectiveness of baby's latch-on and sucking efforts
   d. Indicators of baby's nourishment: number of wet diapers, number and color of stools, baby's weight, and comparison to previous weight
   e. Mothers feelings about breastfeeding
   f. Teaching provided
   g. Any communication with primary care provider or lactation consultant

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PATIENT EDUCATION RESOURCES

Lactation Education Resources. (2012-2013).

- *Breastfeeding survival guide for first two weeks*
- *Positioning and mother-led latch-on*
- Multiple handouts also available in Spanish and Chinese and for specific situations and problems at: http://www.lactationtraining.com/resources/handouts

Office of Women's Health. (2010).

- *Breastfeeding: Frequently answered questions*
- *Your Guide to Breastfeeding* (48 pages)
- *Your Guide to Breastfeeding for African Americans* (48 pages)

CLINICIAN EDUCATION RESOURCES

Lactation Education Resources

- *When to call a lactation consultant*
- Multiple other resources at http://www.lactationtraining.com/resources/resources-professionals

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KEY POINTS

1. Neonatal jaundice is common.
   a. Over 50% of infants develop visible jaundice.
   b. Most jaundice occurs because infants' livers are unable to metabolize and excrete bilirubin at the rate produced from natural breakdown of red blood cells (RBCs).
      1) Exacerbated by inadequate feedings
      2) Alleviated by frequent feedings, which facilitate bilirubin excretion via stools
      3) Usually peaks at day 3 – 5; and resolves on its own within 2 weeks with good feedings
   c. Jaundice can be related to other causes such as blood type incompatibilities, problems with liver, or breast milk with a high fatty acid composition.
2. Jaundice and total serum bilirubin levels:
   a. Bilirubin at birth is usually < 3 mg/dL
   b. Jaundice usually appears when bilirubin levels are about 4 – 6 mg/dL
   c. Criteria for hyperbilirubinemia depend on baby's age and population.
   d. Levels > 10 mg/dL usually deserve frequent monitoring.
   e. Toxicity and risk for kernicterus (brain injury) usually defined as 20 mg/dL.
   f. Early signs of hyperbilirubinemia include poor sucking, excessive sleepiness and hypotonia.
   g. Late signs of high levels include high-pitched cry, hyperextension posturing and seizure.
3. Assessment of jaundice in newborn:
   a. Physical inspection of eyes, skin, mouth, soles of feet and palms of hands for presence of jaundice
   b. Bilirubin measurement is indicated if:
      1) Jaundice appears unduly significant.
      2) Jaundice is exacerbating one day to next.
      3) Jaundice persists beyond 2 weeks.
      4) Baby is lethargic, hypotonic or sucks poorly.
4. Two types of bilirubin measurement are used:
   a. Total Serum Bilirubin (TSB):
      1) Specimen obtained by capillary heel stick.
      2) Specimen should be run "stat."
      3) Light breaks down bilirubin. Protect specimen from light once obtained.
   b. Transcutaneous Bilirubin (TcB): Non-invasive screening method considered accurate within 2 – 3 mg/dL of TSB.
5. Hyperbilirubinemia treatment, from most conservative to most aggressive, includes:
   a. Frequent feedings; 12 feedings/day desirable
   b. Supplemental feedings of breast-fed infants until mother establishes milk supply
   c. Phototherapy:
      1) Three options available:
         a) Bank of lights
         b) Fiber-optic mattress
         c) Fiber-optic blanket
      2) Fiber-optic blanket is most likely option, if phototherapy is conducted in home care.
         a) Many precautions are needed with bank of lights and mattress, so generally should be performed in hospital.
         b) Fiber-optic blanket is much easier to use, less precautions are necessary, but not as rapidly effective as other light therapy.
   d. Exchange transfusion.

EQUIPMENT

Scale
Capillary Specimen procedure, if TSB ordered
Transcutaneous Bilirubin Device, if TcB ordered
Phototherapy device and its manufacturer instructions.
Portable home phototherapy light, fiberoptic blanket, or phototherapy bed (type of unit will be ordered by primary care provider)
Bank light phototherapy kit (bilimask, thermometer, white sheet/pillowcase)
Patient record to be kept by caregiver
Disposable cover for blanket (only needed with fiberoptic blanket)

PROCEDURE

1. Identify the infant. Review *Plan of Care* and determine baseline bilirubin screening test results.
2. Adhere to standard precautions. Perform hand hygiene.
3. Perform physical assessment of infant, paying attention to:
   a. Inspect sclera of eyes, conjuctival sacs, and hard palate of mouth.
   b. Apply enough finger pressure to forehead, nose or ear lobe to induce blanching. Inspect for jaundice before skin returns to normal color.
   c. Assessment of feedings and hydration status:
      1) Weigh infant to determine if baby gaining or losing weight.
      2) Ask mother about:
         a) If milk has "come in."
         b) Number and duration of feedings
         c) Number of "wet" and "soiled" diapers
         d) Color consistency of stools
4. If jaundice appears significant, consult with primary care provider right away. Orders may include:
   a. Visit next day to determine degree of jaundice progression or resolution.
   b. Baby to doctor's office for evaluation and bilirubin measurement.
   c. Nurse to obtain bilirubinemia level by TcB or TSB method.

5. If TSB level needs to be obtained, see procedure *Capillary Specimen* for instructions on obtaining a specimen via heel stick. Prevent blood from being exposed to light.
6. If primary care provider orders home photo therapy:
   a. Read and follow manufacturer's instructions for use of phototherapy device.
   b. Call home equipment company for any questions or concerns.
   c. Undress and perform physical assessment:
      1) Vital signs, especially axillary temperature
      2) Look especially for signs of dehydration.
   d. Instruct caregiver on signs of :
      1) How to take an axillary temperature.
      2) Signs of for dehydration. See *Temperature Taking* procedure.
   e. Obtain daily bilirubin level as ordered.
   f. Apply light therapy:
   g. After 30 minutes of light therapy, check the infant's temperature.
      1) Temperature should be between 97.5° and 99.1° F.
      2) If < 97.5°, adjust to make placement to warmer.
      3) If > 99.1°, adjust placement to warmer part of house.
      4) Check baby's temperature again in 30 minutes.
      5) If the infant's temperature has not stabilized, notify primary care provider.
7. If phototherapy ordered is fiberoptic blanket:
   a. Apply the blanket per manufacturer's instructions.
   b. Apply clothing and/or a cloth blanket over baby, enough to keep warm.
   c. No eye patches are indicated with this therapy.
   d. Parents can pick up, feed, and hold baby with this type of phototherapy.
8. If phototherapy includes a bank of lights,
   a. Baby should be "under the lights" as much as possible. Avoid picking up the baby except for feedings.
   b. Place eye patches on infant's eyes. Instruct caregiver on importance of proper placement of eye patches, and to remove when feeding baby.
   c. Shield male infant's gonads with proper placement of diaper and instruct caregiver.
   d. Change baby's position every 2 hours.

AFTER CARE

1. Consult with primary care provider about:
   a. Increase in observable jaundice
   b. Signs or symptoms of hyperbilirubinemia
   c. If phototherapy ordered, any concerns with caregiver's ability to apply and monitor therapy
   d. Instruct caregiver to:
      1) Observe for signs of increased jaundice.
      2) To keep record of number and duration feedings, amount (if formula feeding)
      3) To keep record of wet diapers and stooling
      4) To report any worsening of symptoms
         a) Increase in jaundice
         b) Decreased feeding
         c) Decrease in urinary output/stools
         d) Increased lethargy
2. Document in patient's record:
   a. Assessment data, level of jaundice, whether increasing or decreasing
   b. Last bilirubin value
   c. Instructions given to caregiver and response to therapy and responsibilities
   d. Communication with primary care provider
   e. Meter reading on device (if available)

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KEY POINTS

1. Visits to new babies and their families always include teaching.
   a. Patient education mirrors the Nursing Process.
      1) *Assessment of Learning Needs*
      2) *Goal Setting and Planning*
      3) *Teaching and Evaluation of Learning*
   b. Crucial elements in teaching parents include:
      1) Assess parental cultural norms and preferences and adapt teaching to meet those preferences.
      2) Assess health literacy. See *The Newest Vital Sign* for a health literacy screening tool and instructions on how to use it.
      3) Evaluate learning using the *Teach-Back* and Return Demonstration techniques.
2. Baby safety topics, which parents need to master within the first months of baby's life, include:
   a. Promotion of health
      1) Hand hygiene
      2) Health check-ups and immunizations
      3) Promoting mental health and development
      4) Smoke-free environment
   b. Prevention of injuries
      1) Burns (associated with feeding, bathing, cooking, and home fires)
      2) Choking (clothing and toy safety)
      3) Falls
      4) Lead poisoning
      5) Motor vehicle accidents (car seat safety)
      6) Shaking (abusive head trauma; how to cope with crying)
      7) Suffocation (safe sleep environment, pets, and cords)
3. An education plan should be developed for the patient's planned length of stay in home care.
   a. Education topics should be prioritized and individualized to meet the baby's current safety needs.
   b. Topics in this procedure are listed alphabetically and not by priority.
   c. Discuss each topic with mother, individualizing it to how it applies to this baby and family.

EQUIPMENT

Handouts on specific topics

PROCEDURE

1. Identify baby, parents, and caregivers. Review the *Plan of Care* for any special considerations. Model hand hygiene before touching the baby.
2. Consider cultural preferences and health literacy needs when planning to teach each safety topic.
3. Scan the baby's environment – home itself, sleeping area, family's interactions with the baby, family interactions with one another, and their financial and psychosocial resources.
4. Ask about alternate care environments such as babysitter's homes.
5. Ask mother/parents/caregiver about questions, concerns and issues.
   a. Address the parents' concerns before teaching topics scheduled on the Education Plan.
   b. Use "teachable moments," such as guidance about obvious safety hazards, currently identified.

Encourage hand washing

1. Provide parents with patient education resources:
   a. *Handwashing*
   b. *Handwashing: A Family Activity*
2. Review with parents when and how to wash hands to prevent the baby from developing infections.

Encourage health check-ups and immunizations

1. Provide parents with patient education resource, *Immunization Schedule*.
2. Discuss and assist parents to make first appointments with primary care provider.
3. Baby should have appointments at 1, 2, 3, 4, 6, 9, and 12 months, or as required by the baby's needs.

Encourage mental health and development

1. Provide parents with patient education resources:
   a. *Positive Parenting Tips*
   b. *Tips for raising Healthy and Safe Kids*
2. Model ways to interact with the baby to provide security, and emotional and mental development.
3. Cuddle and hold the baby when the baby needs comforting; babies sometimes cry because they need cuddling; it's one of their basic needs.
4. Look into the baby's eyes, talk, and smile at the baby when feeding or caring for the baby.
5. Stimulate the baby by singing, reading and playing with the baby.

Encourage a smoke free environment

1. Provide parents with patient education resource, *Living Smoke Free*.
2. Encourage mother to consider smoking cessation program. See *Health Coaching* procedure and *Motivational Interviewing* tool.
3. Never smoke while feeding or holding baby.
4. Never smoke in room in which baby is sleeping.

Prevent burns

1. Always test bottled-feedings.
2. Do not warm baby bottles in microwave baby bottles to warm – causes "hot spots."
3. Test water before placing baby into bath water.

4. Set house hot water temperature to 120°F to prevent scalding.
5. Don't carry hot fluids or foods while holding baby.
6. Don't hold baby while cooking at the stove.
7. Protect baby from direct sunlight. Put a hat on baby's head, and lightly cover exposed areas. No sunscreen until 6 months.
8. Ensure a working smoke detector on all floors of home and near sleeping areas.

Prevent choking

1. Check area around baby for small objects that baby could reach and put in mouth such as buttons, coins, and small toys.
2. Do not give baby toys and items with small parts.
3. Check toys for label: "Not intended for use by those under 3 years."
4. Balloons are a choking hazard.

Prevent falls

1. Always place one hand securely on the baby when the baby is on a high surface such as a changing table or counter top.
2. Never leave baby unattended in an infant seat.
3. Ensure when in an infant seat, safety latch is secure and seat is in a place where vibrations or toddlers can move it.
4. Safest places for baby are in your arms, in a crib, or on a clean carpeted floor area.

Prevent lead poisoning

1. Provide family with patient education resource *Lead.*
2. Major sources of lead poisoning include:
   a. Paint and paint dust (especially in homes painted prior to 1978)
   b. Soil and soil dust
3. Major way children acquire lead poisoning is by putting dusty hands or dusty items into their mouths.
4. Lead can also be inhaled, especially if baby is close to house renovations or soil excavations.
5. Other sources of lead include:
   a. Some imported formulas and toys
   b. Water from "old" pipes
   c. Some glazed pottery and imported cook/tableware
   d. Some folk medicines used to treat colic, teething, vomiting, diarrhea, and constipation from Asian, Middle Eastern and Hispanic countries
   e. Industrial places and activities (painting, repair shops, auto shops, firing ranges)
6. If home was built before 1978:
   a. Check with local health department about checking home for lead.
   b. Do not let baby chew on painted surfaces such as window ledges.
   c. Remove baby from home if being renovated.
   d. Regularly wash baby's hands and toys.
   e. Regularly wet-dust furniture, wet-mop floors, and wet-wipe window components.
7. Other measures:
   a. If work or recreation exposure occurs, change clothes as soon as possible and before touching baby.
   b. Run water through pipes and use cold water to make baby formula.
   c. Do not let child play in dirt.

Prevent motor vehicle injuries

1. Provide parents with patient education resources
   a. *Car Seat Safety Tips*
   b. *Car Seat Check-Up*
2. Ask parents to show you the baby's car seat and how they place the baby in the seat.
   a. Check for rear-facing seat in back seat of car.
   b. Car seat measurements and fit:
      1) Crotch strap to seat back: < 5 ½ inches
      2) Lower harness strap to seat bottom: < 10 inches
      3) Shoulder straps begin at or slightly below infant's shoulders; reduces the potential of infant slumping forward or the straps crossing over infant's ears.
   c. Place car seat in reclining position at a 45 degree tilt; reduces the potential for infant's head to flop forward.
   d. Place infant in car seat with buttocks firmly against seat bottom and the spine flat against the back of the seat.
   e. Place straps over shoulders and harness buckle into the crotch strap. One finger should fit between infant's chest and shoulder straps.
   f. The car seat retainer clip should be positioned at armpit level on infant's chest, not on abdomen or neck area – prevents undue pressure on infant's stomach or trachea.
   g. If needed to provide lateral support for infant's head and neck, place rolled blankets on both sides of infant's trunk to position infant securely in the seat.
3. Never leave the child alone in the car.

Prevent shaking injury (abusive head trauma)

1. Provide parents with patient education resources:
   a. *Babies Cry: Make a Plan*
   b. *Calming a Crying (Breastfeeding) Newborn*
2. A baby who will not stop crying can try a parent's patience, especially if the parent is very tired or stressed. Sometimes parents feel so frustrated they shake the baby, which can cause serious and fatal injuries.
3. Never shake the baby.

4. To calm a crying baby:
   a. Check and take care of needs:
      1) Is the baby hungry? Feed.
      2) Is the baby wet or soiled? Change the diaper.
      3) Does the baby have gas in stomach? Burp.
      4) Does the baby have gas in intestines? Massage abdomen or bicycle pump legs to release gas.
      5) Is something hurting the baby? Remove clothes and check baby's whole body.
      6) Could the baby be too hot or cold? Give the baby a bath or snuggle the baby.
   b. Is the baby ill?
      1) Check the baby's temperature.
      2) Has the baby developed coughing, runny nose, not had a bowel movement?
      3) Become suddenly very irritable and inconsolable?
   c. Try activities to soothe the baby:
      1) Rocking, singing, holding the baby close
      2) Go for a walk or a car ride
      3) Give the baby a bath
   d. If nothing works, and you feel you may lose control:
      1) Ask a friend or family member to give you a break.
      2) Put the baby in a safe place and give yourself a break. Sometimes when you calm down, the baby also calms down.
         a) Put the baby in the crib.
         b) Close the door and take care of yourself for 15 minutes or so.

Prevent suffocation

1. Provide parents with parent education resource:
   a. *Safe sleep*
   b. *Sleep Safety Tips*
2. Ask parents to show you where the baby sleeps and how they put the baby down to sleep.
3. Crib should have firm mattress, slats should be no more than 2 3/8 inches apart, and mattress should fit snugly in the crib.
4. Do not use plastic bags to protect mattress.
5. Nothing should be in the bed that could cover the baby's face. No bumper pads, pillows, comforters, stuffed animals.
6. Always place the baby on his/her back to sleep.
7. Clothes should have no ribbons, strings, or ties.
8. Never put baby to sleep on a soft surface such as a pillow, water bed, or cushion.
9. Ensure crib is away from cords that could cause strangulation.
10. Never attach a cord to a pacifier, so the baby can find the pacifier.
11. If baby is sometimes bottle-fed, advise to never prop bottle so baby can suck while sleeping (feeding always needs to be monitored).
12. If pets are in home, keep away from snuggling with sleeping baby.
13. If family at-risk for co-sleeping, advise:
    a. Obtain an infant co-sleeping bed to place in parents' bed.
    b. Must have firm mattress – no soft mattresses or water beds.
    c. Must ensure no areas of entrapment such as between headboard and mattress.
    d. Never sleep with baby if drugs or alcohol used.

AFTER CARE

1. Communicate with primary care provider and healthcare team about:
   a. Concerns about the child's safety or parent's ability to safely care for child
   b. Need for lead testing for possible exposure
   c. Consider referrals to:
      1) MSW
      2) Parental support programs
2. Instruct to parents to report:
   a. Any injuries so appropriate follow-up and treatment can occur
   b. Fever, change in behavior (unusual irritability or lethargy), skin rash, coughing, vomiting, diarrhea or other worrisome problem
   c. Feeling that they are overwhelmed with baby's care and needs
3. Evaluate learning using teach-back and return-demonstration techniques.
4. Document in patient's medical record.
   a. Assessment of parents' learning needs, including cultural and health literacy adaptations needed
   b. Teaching provided, including topic taught and who taught
   c. Response to teaching
   d. Evaluation of learning
   e. Communication with primary care provider and team members, and any referrals made to community-based programs

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KEY POINTS

1. The first postpartum visit should be scheduled based on the needs of the mother, baby, and family.
   a. Consider mother's/family's knowledge and experience, and particular risk factors.
   b. Postpartum day 3 may be most effective:
      1) Newborn jaundice at this time
      2) Mother's milk will be coming, if breast feeding.
      3) Many questions and concerns may have developed.
2. The postpartum visit should consist of:
   a. Maternal assessment and teaching of self-care
   b. Assessment of infant and teaching infant care
   c. Assessment of family psychosocial and environmental factors that influence the health and well-being of mother and baby

   This procedure focuses on the mother's postnatal assessment and teaching.
3. Assessment of uterus and fundus:
   a. Fundus height gradually returns to pre-pregnancy position.
   b. Fundus should always be midline.
   c. Expected fundus height
      1) One day postpartum: One finger breadth below umbilicus
      2) Each day postpartum: One additional finger breadth below umbilicus
4. Assessment of lochia color:
   a. Birth – 3 days: Dark red (rubra); only small clots are normal.
   b. 3 days – 10 days: Serous/pink (serosa)
   c. After 10 days: Yellow/creamy (alba)
5. For breast assessment, care and teaching – for both breast-feeding and formula-feeding mothers, see procedure *Breast Care.*
6. The chart below indicates important assessment areas and abnormal findings that should be reported to primary care provider:

Assessment	Abnormal Findings
Emotional stats	· Depression or excessive anxiety · Lack of infant attachment behaviors
Vital signs, weight & pain	· Fever > 100.4°F · BP above pre-pregnancy level. · Weight loss less than 12 pounds or > pre-pregnancy weight
Breasts	· Engorgement · Cracked, sore, bleeding nipples · Reddened tender area of breast · Nipple inversion or flatness
Uterus	· Boggy soft; fundus above umbilicus · Deviation from midline · Tender on palpation
Perineum	· Excessive edema, bruising · Hematoma · Tender inflamed hemorrhoids
Episiotomy or cesarean site	· Incision line inflamed · Incision with gaps or openings
Lochia	· Excessive amount · Persistent red-blood color
Bladder function	· Distended · Sense of inability to empty bladder
Bowel function	· Hypoactive bowel sounds · Constipation
Deep venous thrombus	· Shortness of breath · Calf pain or cramps

7. Teaching for perineal care:
   a. Wash hands pre/post perineal care.
   b. Cleanse perineum after each urination or bowel movement using peri-bottle or sitz bath.
   c. Cleansing, drying, and pad applications should be done from front to back to prevent contamination.
   d. Change perineal pads after each urination or elimination.
   e. When changing pads, do not touch side that will touch perineum.
8. Teaching about sitz bath:
   a. Sitz baths may be preferred if episiotomy sutures are present – promote healing and comfort.
   b. Sitz bath is a basin, which sits in the toilet, allowing excess water to flow into toilet, when sitting on it. Follow manufacturer's instructions for preparing the sitz bath.
   c. May be taken 1 or more times/day for about 20 minutes/session.
   d. Ensure sitz tub is clean prior to use.
   e. Fill with either warm or cool water, as ordered, or as best promotes comfort.

EQUIPMENT

Assessment supplies (thermometer, BP cuff, stethoscope, scale, tape measure)
Peri-bottle and/or Sitz bath

PROCEDURE

1. Identify mother. Review visit orders. Explain procedure.
2. Adhere to Standard Precautions. Wash hands.
3. Encourage mother to ask questions and share concerns.
4. Perform physical assessment of mother
   a. Assess vital signs, weight and pain.
   b. Perform ausculatory exam of:
      1) Heart sounds
      2) Breath sounds
      3) Bowel sounds
5. Inspect and palpate breasts while asking about pain or problems.
6. Inspect abdomen and palpate for fundus.
7. If cesarean section, inspect the incision line, checking for signs of infection or dehiscence.
8. Ask about urinary patterns and bowel movements.
9. Check perineum.
   a. Observe perineal pad for amount and color of lochia.
   b. Inspect episiotomy for signs of infection or dehiscence.
   c. Inspect perineal area for excessive bruising or edema.
   d. Observe anus for signs of full or inflamed hemorrhoids.
10. Check for Homan's sign in both lower extremities.
11. Ask mother how she is feeling about the baby.
    a. Ask about feelings of depression or anxiety. If indicated ask mother to complete the *Edinburgh Postnatal Depression Scale.*
    b. Ask about help and support and help she is receiving, and if it is adequate.
    c. Help mother problem-solve about ways to get additional sleep or assistance.
12. Assess mother's interactions with infant:
    a. Bonding and attachment behaviors
    b. Ability and confidence in providing care
13. Observe home environment for safety hazards.
    a. Ask mother to show you where the baby sleeps.
    b. Ask mother how she lays the baby down to sleep.
14. Provide teaching and instruction, as needed by mother's questions and concerns, and issues discovered during assessment.

AFTER CARE

1. Communicate with primary care provider about:
   a. Abnormal assessment findings
   b. Referrals needed for lactation consultant or psychosocial needs
2. Instruct mother to report:
   a. Increased pain or tenderness of breasts or episiotomy/cesarean site
   b. Signs of infection: Fever, reddened tender breasts, purulent, or foul lochia
   c. Signs of increased bleeding, passing clots, or lochia stays red
   d. Increasing depression, anxiety, or difficulty caring for self or baby
3. Document in patient's record:
   a. Condition of breasts
   b. Fundus location and height
   c. Status of incisions (episiotomy or cesarean)
   d. Amount and color of lochia
   e. Condition of perineum
   f. Degree of discomfort and pain
   g. Mental status and attachment behaviors
   h. Observations about family and environment
   i. Teaching provided, and evaluation of learning.
   j. Communication with primary care provider and team members, if any

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KEY POINTS

1. Changes in breast tissue:
   a. During pregnancy, elevated estrogen and progesterone levels stimulate breast ducts and lobules to develop and proliferate.
   b. Delivery of placenta stimulates the breasts to begin producing milk.
   c. Each time the baby sucks (or the nipples are stimulated or a breast pump is used), prolactin is released, creating more milk production.
   d. Thus, after birth, the more the nipples are stimulated with sucking or other tactile sensations, the more milk is produced.
2. New mothers have one of two goals:
   a. Non-breastfeeding mothers: To inhibit milk production, by preventing any nipple stimulation.
   b. Breastfeeding moms: To stimulate milk production with frequent nipple stimulation through frequent feedings.
3. Both non-breastfeeding and breastfeeding mothers require assessment and teaching about caring for their breasts in the postpartum period.
   a. Non-breastfeeding mother:
      1) Assess for breast discomfort and pain, methods used to relieve pain, and degree of breast filling.
      2) Teach ways to inhibit milk production as quickly as possible.
   b. Breastfeeding mothers:
      1) Assess as for non-breastfeeding mother.
      2) Assess condition of breast and nipple, which are prone to a number of problems:
         a) Cracked and sore nipples
         b) Plugged ducts and mastitis
   c. Engorgement can be an issue for both non-breastfeeding and breast feeding mothers, but the treatment is different, as described in procedures below.
4. Description of breast firmness on palpation:
   a. Soft (empty of milk)
   b. Filling (slight firmness)
   c. Full (all areas of breast full and firm, but not hard or taut)
   d. Engorged (feels hard, as if palpating over a bone; skin appears taut)
   e. Presence of palpable mass (can be caused by a milk plug)
5. Breast milk is a bodily fluid. Standard precautions require donning gloves if contact with milk could occur.

EQUIPMENT

Hand hygiene supplies and gloves
If needed:
Breast Engorgement handout
Sore Nipples handout
Plugged Ducts and Mastitis handout
Ice packs and warm compresses
Hydrogel dressings, for cracked nipples

PROCEDURE

1. Identify mother and baby. Review the *Plan of Care*, especially any orders related to breast care and feeding. Determine if the mother is breastfeeding.
2. Ask mother if she is having any breast problems, pain or discomfort.
   a. Where is it located? How severe is it?
   b. How are you treating it? How effective is treatment?
3. Prepare to perform physical assessment.
   a. Adhere to standard precautions.
   b. Perform hand hygiene.
   c. Don gloves.
   d. Ask mother to remove bra.
   e. If nipple sticks to the bra or pad, use warm water to gently dislodge.
4. Assess the mother's breasts:
   a. Inspect nipples and breasts.
   b. Gently palpate to determine breast fullness.
5. Identify problems and their probable causes.
6. Provide teaching as needed for patient's concerns and problems, as below.

Breast hygiene and care

1. Cleanse hands for 20 seconds before touching breasts for breastfeeding or breast care.
2. Clean nipple tissue only with water. Pat dry. Keep dry.
3. Avoid soaps and irritants, including lotions and ointments, unless used in consultation with primary care provider.
4. A supportive bra is necessary for both non-breastfeeding and breastfeeding mothers.
   a. For non-breastfeeding mothers the goal is mild breast constriction.
   b. For breastfeeding mothers, the goal is to assist the ligaments and connective tissue supporting "heavy" breast tissue.
   c. Nursing bras should usually be:
      1) One-size larger than the pre-pregnant size
      2) Made out of cotton rather than stretch material to provide more support

Non-breastfeeding mother with discomfort

1. Prevent engorgement by wearing a supportive, well-fitting bra or a tight-fitting sports bra for 5 to 7 days.
2. Wear bra 24 hours/day, except when showering.

3. Ice packs can be applied to axillary area for about 20 minutes four times a day.
4. No breast or nipple stimulation.
5. No expression of milk, which may provide temporary relief, but will stimulate more milk production.
6. With primary care provider's authorization, acetaminophen usually helpful.

Breastfeeding and sore nipples

1. Soreness is usually caused by improper latch-on.
   a. Assess to ensure baby has a "full mouthful."
   b. See procedure *Breastfeeding*, especially part about positioning and latch-on.
2. If vigorous sucking contributes to soreness:
   a. Anticipate baby's hunger before the baby becomes "frantic" to reduce overly-vigorous sucking. Baby starts "rooting" prior to crying.
   b. Use warm compresses and breast massage to induce a more rapid let-down, which decreases the vigor of the sucking.
3. If "pulling" on the nipple contributes to soreness:
   a. Hold baby closely, tummy-to-tummy, to ensure shoulders, hips and knees are facing mother, decreasing "pull" on nipple.
   b. If needing to stop nursing while baby is sucking, break suction by sliding little finger between breast and baby's mouth to prevent "pulling."
4. If nipples "staying wet" contributes to soreness:
   a. Air dry breast completely after nursing.
   b. Keep bra's nursing flaps open to air so nipples stay dry.
   c. Change nursing pads frequently to keep nipples dry.
   d. Remove plastic liners from milk pads.

Cracked or bleeding nipples

1. Cracked or bleeding nipples have the same causes and treatments as sore nipples.
   a. Assess for contributory factors and intervene as for sore nipples.
   b. Check baby's mouth for thrush, which could cause cracking and bleeding, and which requires medical attention.
2. Best "ointment" is breast milk itself as it is high in fat and is a good emollient.
   a. Express milk after feeding and lightly rub over nipples. Allow to air-dry.
   b. Primary care provider can also prescribe medical-grade anhydrous lanolin cream.
   c. Petroleum based ointments (interfere with skin respiration) and Massé cream (associated with peanut allergy) are discouraged.
3. Consult with lactation consultant or wound care nurse. Hydrogel dressings may be appropriate.

Breastfeeding and engorgement

1. Causes include infrequent feedings, baby not emptying breasts.
2. Breastfeed frequently (every 1 ½ hours).
   a. Encourage baby to feed from each breast about 10-15 minutes at each feeding.
   b. Arouse sleepy baby by changing diaper, unwrapping blanket, or holding upright.
3. Express milk with massage, manual expression, or breast pump to relieve pressure. See procedure *Breast Pumping*.
4. Use cold packs between feedings to slow milk production.

Plugged milk duct

1. Causes include inadequate variety of feeding positions, so not all ducts are opened and drained and external pressure on breast.
2. Use a warm compress over site before feeding to "loosen" plug.
3. Alternate sides and use a variety of positions each day so baby "drains" entire breast.
   a. Cradle hold
   b. Foot-ball hold
   c. Side-lying position
   d. Lying-on position
   e. Other "creative" but safe positions
4. If baby does not adequately empty breast, use a breast pump to complete emptying.

Mastitis

1. Mastitis is a serious illness.
   a. Signs/symptoms include fever, visible area of inflammation, warmth to touch, severe pain at site, and flu-like body aches and pains.
   b. Causes include cracked nipples (providing opening for bacterial infection), plugged milk duct, inadequate hygiene, among others.
2. Alert primary care provider immediately; antibiotic indicated.
3. Baby should be encouraged to feed as frequently as possible to "drain" the area.
4. Ensure all basic hygiene and breastfeeding procedures being followed.
   a. Hand and breast hygiene
   b. Supportive bra
   c. Good positioning during feeding
   d. Proper latch-on
   e. Appropriate frequency and duration of feedings
   f. Adequate nutrition, hydration and rest

AFTER CARE

1. Communicate with primary care provider.
   a. Pain, needing medication
   b. Signs and symptoms of mastitis
   c. Referral to lactation consultant

2. Consult with lactation consultant about breastfeeding and breast problems that do not respond to current interventions quickly.
3. Instruct mother to report problems that do not respond quickly to recommended interventions.
4. Document in patient's medical record:
   a. Assessment data from inspection and palpation
   b. Evidence of nipple and breast problems
   c. Mother's emotional status and coping
   d. Instructions provided and evaluation of learning
   e. Communication with primary care provider and lactation consultant

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PATIENT EDUCATION RESOURCES

Lactation Education Resources. (2012-2013).

- *Breastfeeding survival guide for first two weeks*
- *Positioning and mother-led latch-on*

Office of Women's Health. (2010).

- *Your guide to breastfeeding, pages 18 - 24.*
- *Your guide to breastfeeding for African Americans* (48)

CLINICIAN EDUCATION RESOURCES

Lactation Education Resources

- *When to call a lactation consultant*
- Multiple other resources at http://www.lactationtraining.com/resources/resources-professionals

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KEY POINTS

1. Reasons breastfeeding mothers may wish to pump their milk include:
   a. To help stimulate milk production
   b. To help relieve engorgement or to empty breasts
   c. To collect milk for baby when mother goes back to work or cannot be with baby
   d. To maintain milk supply during periods when mother or baby cannot nurse
2. Milk can be pumped from breasts in several ways:
   a. Manually, known as "manual expression"
   b. With a manually powered pump
   c. With an electrically and/or battery-powered pump
3. Promote "let down" whether performing manual expression or using a pump:
   a. Take a warm shower.
   b. Massage breasts.
   c. Apply warm moist compresses just prior to pumping.
   d. Minimize distractions, and focus on the baby, e.g., look at pictures or listen to recording.
   e. Relax.
4. A pump consists of:
   a. Flange, which is placed over the breast
   b. Connector, which connects flange to the collection bottle
   c. Collection bottle, which can be the baby's bottle
   d. Tubing, connecting the flange to the pump
   e. Pump, which can be a piston pump for a manual model or an electrical or battery pump
5. Pumps vary in their features and cost.
   a. Cost varies from about $30 for a manual pump to $300 for specialized electric pump.
      1) Pumps can usually be rented.
      2) Insurance carriers include coverage for breast pumps due to provisions within the Affordable Care Act.
   b. The most effective and efficient pumps come with:
      1) Several flange sizes to accommodate different breast sizes
      2) A control to vary amount of suction
      3) A control to vary the amount of cycles (suctions/minute)
      4) Ability to empty both breasts simultaneously, cutting pumping time in half
6. Selection of pumping method and type of pump:
   a. Manual expression takes practice, but can be very effective.
   b. The manual pump is relatively efficient for short-term or intermittent use.
   c. Hand expression and manual pumps require that the patient have ordinary strength and hand coordination.
   d. Mothers who are going back to work should be advised to purchase a high quality, double electric pump, which will express milk most efficiently in a short period of time.
7. Use of pumps can cause irritation, which can cause pain and infection.
   a. Always read and follow pump manufacturers' instructions for use of pump.
   b. Assess nipples frequently for cracking.
   c. Pumping should not be uncomfortable or painful. Stop pumping immediately if pain or discomfort occurs.
   d. Immediately after pumping, allow nipples to air dry completely, to prevent cracking.
8. Bottles and nipples used for collecting and storing milk must be adequately cleaned using hot soapy water or in the dishwasher.
   a. Soapy water method: Fill clean sink with hot water and add dishwashing liquid. Put all feeding items in sink and wash bottles with a bottle brush. Rinse thoroughly under running water. Place on a clean rack to air dry.
   b. Dishwasher method: Place feeding items in a dishwasher, which uses heated water and a hot drying cycle.
   c. Nipples and any areas in which milk collects need special attention. Clean with nipple brush or swish water through nipple until clean.

EQUIPMENT

Gloves, for nurse
Pump and its parts (not needed for manual expression)
For collecting milk
- Clean 2 – 4 oz BPA-free bottle, with screw-top or breast milk storage bags
- Refrigerator, freezer or insulated "lunch bag" with ice packs for temporary storage

PROCEDURE

1. Identify mother and baby. Review *Plan of Care* for any special instructions related to breast care or breastfeeding.
2. Adhere to standard precautions. Perform hand hygiene and don gloves if contact with milk possible.
3. Inspect bottles that will be used for collection, and discuss how they should be cleaned and prepared.
4. Instruct patient in importance of washing her hands before expressing or pumping milk.
5. Use techniques to aid in let-down of milk.
   a. Apply warm moist compresses to her breasts.
   b. Massage breasts to exert gentle pressure in a circular motion on the breast.
      1) Start at the chest wall and spiral around the breast toward the areola.
      2) Use palms of hands, not fingers, for firm pressure.
6. Sit in a comfortable chair, with chest slightly tilted forward and down.
   a. Positioning uses gravity to help with procedure.

   b. Place pillow behind back for comfort and support.
7. Teach patient how to manually express milk or to use breast pump.

Manual expression

1. Position thumb and fingers in a C- position.
   a. Place thumb and fingers 1 inch behind the nipple.
   b. Thumb and fingers should be at 12 and 6, 3 and 9, and other diametrically opposed positions as per a clock face.
2. Push straight toward chest wall without spreading fingers apart.
   a. Roll the thumb and fingers forward simultaneously to compress and empty milk reservoirs to provide a mild compression.
   b. Think: Press (towards chest wall). Compress (by gently squeezing fingers, using a rolling motion). Release the compression.
3. Rhythmically repeat for about a minute.
   a. Keeping fingers in place: Press, compress, release.
   b. Goal is about 45 repeats/minute, simulating the rate at which a baby sucks
   c. DO NOT slide fingers on skin, keep them gently against skin.
4. After about a minute, switch to a different position.
   a. Continue until all "around-the-clock" positions have been used to empty breast.
   b. May switch back-and-forth between breasts, or complete one breast and then the other, as works best for mother.

Breast pump

1. Review manufacturer's instructions carefully, connecting parts as instructed.
2. Moisten breast to improve flange suction.
3. Apply flange over nipple and areola, ensuring nipple is centered in the flange.
4. Turn pump on, set suction lowest setting that adequately maintains milk flow into collection bottle.
5. Switch to other side:
   a. After about 15 minutes.
   b. When milk flow decreases
   c. Back and forth between breasts, may be more effective in emptying breasts with single pump
6. Turn off pump and remove flange.
7. Apply a thin layer of breast milk to nipple of each breast, and allow to air dry.
8. Clean equipment thoroughly as per manufacturer's instructions.

Store and use milk

1. Mark bottle or bag with the date.
2. Milk can be stored and used for:
   a. 1 – 2 hours at room temperature, if guidelines for hygiene and clean bottle carefully followed
   b. 5 – 7 days, in coldest part of refrigerator
   c. 3 – 12 months, depending on type of freezer and how often it is opened
   d. In a cooler or an insulated pack with ice packs, as long as ice keeps milk cold while being transported
   e. Fresh/refrigerated milk maintains immune factors, which freezing can diminish or destroy.
3. Prepare milk for baby.
   a. Frozen milk can be thawed overnight in the refrigerator or warmed in a bowl of warm water.
   b. Babies can drink cold milk from the refrigerator without harm, but many prefer milk to be at room to body temperature.
   c. To warm milk, place bottle in a bowl of warm water for a couple of minutes.
   d. Do not thaw/warm milk in microwave, which can create hotspots; associated with baby burns.

AFTER CARE

1. Consult with lactation consultant about:
   a. Problems with expression or pumping
   b. Selection of appropriate pump
2. Instruct patient:
   a. Report problems so problem-solving strategies can be tried before "giving up" in frustration.
   b. Availability of free National Breastfeeding Helpline 800-994-9662, which offers breast pumping support from volunteer peer counselors. Available Monday – Friday, 9 am – 6 pm, EST.
   c. Evaluate learning with teach-back and return demonstration.
3. Document in patient's record:
   a. Condition of nipples, amount of milk pumped, storage of milk and ease of procedure
   b. Instructions given to patient
   c. Response to procedure, evaluation of learning, and ability to express milk

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