N432 Focus Sheet #2 2020

Ricci, Kyle, & Carman Ch 13, 14, 21; ATI Ch 11, 12, 13, 14, 15,16 and online Fetal Monitoring program

1. Fill in the following table with associated s/s of each **P. 456-457, ATI P. 78**

	TRUE LABOR	**FALSE LABOR**
Uterine Contractions (Braxton Hicks)	**Contractions are more commonly felt in the lower back. They aid in moving the cervix from a posterior position to an anterior position and help in ripening and softening the cervix. Regular uterine contractions increase in frequency and intensity. Uterine contractions continue no matter what the patient does to alleviate them.**	**Felt as a tightening or pulling sensation of the top of the uterus. Occur primarily in the abdomen and groin and gradually spread downward. Irregular uterine contractions that are also weak in strength. The cervix remains unchanged. Contractions with stop or slow down with walking or position change and an increase in fluids can cause them to stop.**
Cervical Dilation & Effacement	**Bring about progressive cervical dilation and effacement.**	**The cervix remains unchanged.**
Bloody show	**At the onset of labor or before, the mucous plug that fills the cervical canal during pregnancy is expelled as a result of cervical softening and increased pressure of the presenting part. These ruptured cervical capillaries release a small amount of blood that mixes with mucus, resulting in the pink-tinged secretions known as bloody show.**	**There is no bloody show, or if there is discharge it is a brownish color instead of blood-tinged or pink.**
Fetus: Engagement	**The fetus descends and engages with the true pelvis to prepare for active labor. Occurs when the present part, usually biparietal (largest) diameter of the fetal head passes the pelvic inlet at the level of the ischial spines, referred to as station 0.**	**When false labor occurs, the fetus does not engage with the pelvic inlet to prepare for active labor.**

2. How does lightening relate to labor? **P. 456**

Lightening occurs when the fetal presenting part begins to descend into the true pelvis. The uterus lowers and moves into a more anterior position. The shape of the abdomen changes as a result of the change in the uterus. In primiparas, lightening can occur 2 weeks or more before labor begins; among multiparas it may not occur until labor starts. It can indicate that labor is getting close but it is not necessarily a sign of active labor.

3. Describe the Bishop score and the indications for doing it. **P. 817**

The bishop score assesses cervical ripeness and helps identify women who would be most likely to achieve a successful induction. When induction of labor is indicated, cervical readiness for labor is evaluated by pelvic examination and determination of a Bishop score is documented. The duration of labor is inversely correlated with the Bishop score: a score over 8 indicates a successful vaginal birth. Bishop scores of less than 6 usually indicate that a cervical ripening method should be used prior to induction.

4. What are Leopold's maneuvers (make sure to understand all 4 maneuvers) and what 4 questions does each maneuver answer? **P. 487-489**

Maneuver 1: What fetal part (head or buttocks) is located in the fundus (top of the uterus)?

- **Place the woman in the supine position and stand beside her.**
- **Perform the first maneuver to determine presentation**
    - **Facing the woman's head, place both hands on the abdomen to determine fetal position in the uterine fundus.**
    - **Feel for the buttocks, which will feel soft and irregular (indicated vertex presentation); feel for the head, which will feel hard, smooth, and round (indicates a breech presentation).**

Maneuver 2: On which maternal side is the fetal back located? (Fetal heart tones are best auscultated through the back of the fetus).

- **Complete the second maneuver to determine position.**
    - **While still facing the woman, move hands down the lateral sides of the abdomen to palpate on which side the back is located (feels hard and smooth).**
    - **Continue to palpate to determine on which side the limbs are located (irregular nodules with kicking and movement).**

Maneuver 3: What is the presenting part?

- **Perform the third maneuver to confirm presentation.**
    - **Move hands down the sides of the abdomen to grasp the lower uterine segment and palpate the area just above the symphysis pubis.**
    - **Place thumb and fingers of one hand apart and grasp the presenting part by bringing fingers together.**
    - **Feel for the presenting part. If the presenting part is the head, it will be round, firm, and ballottable; if it is the buttocks, it will feel soft and irregular.**

Maneuver 4: Is the fetal head flexed and engaged in the pelvis?

- **Perform the fourth maneuver to determine attitude.**
    - **Turn to face the client's feet and use the tips of the first three fingers of each hand to palpate the abdomen.**
    - **Move fingers toward each other while applying downward pressure in the direction of the symphysis pubis. If you palpate a hard area on the side opposite the fetal back, the fetus is in flexion, because you have palpated the chin. If the hard area is on the same side as the back the fetus is in extension, because the area palpated is the occiput.**
- **Also note how your hands move. If the hands move together easily, the fetal head is not descended into the woman's pelvic inlet. If the hands do not move together and stop because of resistance, the fetal head is engaged into the woman's pelvic inlet.**

5. List the "preprocedures" done on admission to labor and delivery. **ATI P. 77**

Nursing Actions

- **Leopold Maneuvers: Abdominal palpation of the number of fetuses, the fetal presenting part, lie, attitude, descent, and the probable location where fetal heart tones can be best auscultated on the client's abdomen.**
- **External Electronic Monitoring (tocotransducer): Separate transducer applied to the maternal abdomen over the fundus that measurers uterine activity.**
    - **Displays uterine contraction patterns.**
    - **Easily applied by the nurse but must be repositioned with maternal movement to ensure proper placement.**
- **External Fetal Monitoring (EFM): Transducer applied to the abdomen of the client to assess FHR patterns during labor and birth.**

Laboratory Analysis

- **Group B Streptococcus: Culture is obtained if results are not available from screening at 35-37 weeks. If positive, an intravenous prophylactic antibiotic is prescribed.**
- **Urinalysis: Clean-catch urine sample obtained to assess the client for:**
    - **Dehydration via specific gravity.**
    - **Ketonuria (impaired nutrition or uncontrolled glucose).**
    - **Proteinuria, which can be indicative of gestational hypertension or preeclampsia.**
    - **Glucosuria which can be indicative of gestational diabetes.**
    - **Urinary tract infection (UTI) via bacterial count (more common in clients who have diabetes mellitus).**
- **Blood Tests:**
    - **CBC level**
    - **ABO typing and Rh-factor if not previously done**

6. State the 5 "P's" of the labor progress and what each P is composed of. **ATI P. 76**

Passageway (birth canal): The birth canal is composed of the bony pelvis, cervix, pelvic floor, vagina, and introitus (vaginal opening). The size and shape of the bony pelvis must be

adequate to allow the fetus to pass through it. The cervix must dilate and efface in response to contractions and fetal descent.

Passenger (fetus and placenta): Consists of the fetus and the placenta. The size of the fetal head, fetal presentation, fetal lie, fetal attitude, and fetal position affect the ability of the fetus to navigate the birth canal. The placenta can be considered a passenger because it must also pass through the canal.

- **Presentation: The part of the fetus that is entering the pelvic inlet first and leads through the birth canal during labor. It can be the back of the head (occiput), chin (mentum), shoulder (scapula), or breech (sacrum or feet).**
- **Lie: The relationship of the maternal longitudinal axis (spine) to the fetal longitudinal axis (spine).**
    - **Transverse: Fetal long axis is horizontal, forms a right angle to maternal axis, and will not accommodate vaginal birth. The shoulder is the presenting part and can require delivery by cesarean birth if the fetus does not rotate spontaneously.**
    - **Parallel or longitudinal: Fetal long axis is parallel to maternal long axis, either cephalic or breech presentation. Breech presentation can require a cesarean birth.**
- **Attitude: Relationship of fetal body parts to one another.**
    - **Fetal flexion: Chin flexed to chest, extremities flexed into torso.**
    - **Fetal extension: Chin extended away from chest, extremities extended.**
- **Fetopelvic or fetal position: The relationship of the presenting part of the fetus (sacrum, mentum, or occiput), preferably the occiput, in reference to its directional position as it relates to one of the four maternal pelvic quadrants. It is labeled with three letters.**
    - **Right (R) or Left (L): The first letter references the side of the maternal pelvis.**
    - **Occiput (O), sacrum (S), mentum (M), or scapula (Sc): The second letter references the presenting part of the fetus.**
    - **Anterior (A), posterior (P), or transverse (T): The third letter references the part of the maternal pelvis.**
- **Station: Measurement of fetal descent in centimeters with station 0 being at the level of an imaginary line at the level of the ischial spines, minus stations superior to the ischial spines, and plus stations inferior to the ischial spines.**

Powers (contractions): Uterine contractions cause effacement (shortening and thinning of the cervix) during the first stage of labor and dilation of the cervix (enlargement or widening of the cervical opening and canal) that occurs once labor has begun and the fetus is descending. Involuntary urge to push and voluntary bearing down in the second stage of labor helps in the expulsion of the fetus.

Position (maternal): The client should engage in frequent position changes during labor to increase comfort, relieve fatigue, and promote circulation. Position during the second stage

is determined by maternal preference, provider preference, and the condition of the mother and the fetus. *Gravity can aid in the fetal descent in upright, sitting, kneeling, and squatting positions. *

Psychological response: Maternal stress, tension, and anxiety can produce physiological changes that impair the progress of labor.

7. Define fetal lie and fetal attitude. **P. 462**

Fetal Lie: Fetal lie refers to the relationship of the long axis (spine) of the fetus to the long axis (spine) of the mother.

- **There are three possible lies: longitudinal (which is the most common), transverse, and oblique.**
  - **A longitudinal lie occurs when the long axis of the fetus is parallel to that of the mother (fetal spine to maternal spine side-by-side).**
  - **A transverse lie occurs when the long axis of the fetus is perpendicular to the long axis of the mother (fetal spine lies across the maternal abdomen and crosses her spine).**
  - **In an oblique lie, the fetal long axis is at an angle to the bony inlet, and no palpable fetal part is presenting.**
    - **This lie is usually transitory and occurs during fetal conversion between other lies.**
      - ****A fetus in a transverse or oblique lie position cannot be delivered vaginally. ****

Fetal Attitude: Fetal attitude refers to the posturing (flexion or extension) of the joints and the relationship of fetal parts to one another.

- **The most common fetal attitude when labor begins is with all joints flexed—the fetal back is rounded, the chin is on the chest, the thighs are flexed on the abdomen, and the legs are flexed at the knees. This normal fetal position is most favorable for vaginal birth, presenting the smallest fetal skull diameters to the pelvis.**
- **When the fetus presents to the pelvis with abnormal attitudes (no flexion or extension), their non-flexed position can increase the diameter of the presenting part as it passes through the pelvis, increasing the difficulty of birth. An attitude of extension tends to present larger fetal skull diameters, which may make birth difficult.**

8. What role do the fetal skull suture lines and fontanelles play in identifying fetal position? **P. 461**

Sutures play a role in helping to identify the position of the fetal head during a vaginal examination. During a pelvic examination, palpation of these sutures by the examiner reveals the position of the fetal head and the degree of rotation that has occurred.

The anterior and posterior fontanelles are also useful in helping to identify the position of the fetal head. They allow for molding, and are important when evaluating the newborn.

- **The anterior fontanelle is the famous "soft spot" of the newborn's head. It is a diamond-shaped space that measures from 1 to 4 cm. It remains open for 12-18 months after birth to allow for growth of the brain.**
- **The posterior fontanelle corresponds to the anterior one but is located at the back of the fetal head; it is triangular. This one closes within 8 to 12 weeks after birth and measures, on average, 1 to 2 cm at its widest diameter.**

9. Define the various fetal presentations (RKC p 462-464 & ATI p 74).

Fetal presentation refers to the body part of the fetus that enters the pelvic inset first (the "presenting part"). This is the fetal part that lies over the inlet of the pelvis or the cervical os. Knowing which fetal part is coming first at birth is critical for planning and initiating appropriate interventions.

- **The three main fetal presentations are cephalic (head first), breech (pelvis first), and shoulder (scapula first).**
  - **In a cephalic presentation, the presenting part is usually the occipital portion of the fetal head. This presentation is also referred to as a vertex presentation. Variations in a vertex presentation include the military, brow, and facial presentations.**
  - **Breech presentation occurs when the fetal buttocks or feet enter the maternal pelvis first and the fetal skull enters last. This abnormal presentation poses several challenges at birth. Primarily, the largest part of the fetus (skull) is born last and may become "hung up" or stuck in the pelvis. In addition, the umbilical cord can become compressed between the fetal skull and the maternal pelvis after the fetal chest is born because the fetal head is the last to exit. Moreover, unlike the hard fetal skull, the buttocks are soft and are not as effective as a cervical dilator during labor compared with a cephalic presentation. Finally, there is the possibility of trauma to the head as a result of the lack of opportunity for molding.**
  - **A shoulder presentation or shoulder dystocia occurs when the fetal shoulders present first, with the head tucked inside. Clinically, signs of shoulder dystocia appear while the woman is pushing as the neonate's head slowly extends and emerges over the perineum, but then retracts back into the vagina, commonly referred to as the "turtle sign." The fetus is in a transverse lie with the shoulder as the presenting part. Conditions associated with shoulder dystocia include placenta previa, prematurity, high parity, premature rupture of membranes, multiple gestation, or fetal anomalies. A cesarean birth is usually necessary if identified before labor begins, but will be evaluated based on the length of gestation, the size of the fetus, the position of the placenta, and whether the membranes have ruptured.**

10. What do each of the 3 letters associated with fetal positioning stand for? **P. 464-465**

Fetal position describes the relationship of a given point on the presenting part of the fetus to a designated point of the maternal pelvis.

- **The landmark fetal presenting parts include the occipital bone (O), which designates a vertex presentation; the chin (mentum [M]), which designates a face presentation; the buttocks (sacrum [S]), which designate a breech presentation; and the scapula (acromion process [A]), which designates a shoulder presentation.**
- **In addition, the maternal pelvis is divided into four quadrants; right anterior, left anterior, right posterior, left posterior.**
    - **These quadrants designate whether the presenting part is directed toward the front, back, left, or right side of the pelvis.**
    - **Fetal position is determined by identifying first the presenting part and then the paternal quadrant the presenting part is facing.**
- **Position is indicated by a three-letter abbreviation as follows:**
    - **The first letter defines whether the presenting part is tilted toward the left (L) or the right (R) side of the maternal pelvis.**
    - **The second letter represents the particular presenting part of the fetus: O for occiput, S for sacrum (buttocks), M for mentum (chin), A for acromion process, and D for dorsal (refers to the fetal back) when denoting the fetal position in shoulder presentations.**
    - **The third letter defines the location of the presenting part in relation to the anterior (A) portion of the maternal pelvis or the posterior (P) portion of the maternal pelvis. If the presenting part is directed to the side of the maternal pelvis, the fetal presentation is designated as transverse (T).**

11. Fetal station is assessed in relation to what? **P. 465**

Fetal station refers to the relationship of the presenting part to the level of the maternal ischial spines.

- **Fetal station is measured in centimeters and is referred to as a minus or plus, depending of its location above or below the ischial spines.**
- **Typically, the ischial spines are the narrowest part of the pelvis and are the natural measuring point for the birth progress.**

12. Outline the rationale for and the pros and cons of external cephalic version. **P. 805**

External cephalic version refers to a procedure in which the fetus is rotated from the breech to the cephalic presentation by manipulation through the mother's abdominal wall at or near term.

- **Pros:**
    - **Performed after 36 weeks.**
    - **Performed only in a hospital setting**
    - **Performed under direct ultrasound guidance**
    - **Performed with continuous fetal monitoring**
    - **Done for patients who have breech presentation or transverse presentation to avoid having a surgical birth.**
- **Cons:**

- **Risk for placental abruption**
- **Risk for umbilical cord compression**
- **Risk for emergent c/s**
- **Is successful only in approximately 50% of cases.**

13. Describe methods of cervical ripening and the indications for their use? **P. 817-819**

Cervical ripening is a process by which the cervix softens via the breakdown of collagen fibrils. It is the first step in the process of cervical effacement and dilation so that, on average, the cervix is approximately 50% effaced and 2 cm dilated at the onset of labor. There has been increasing awareness that if the cervix is unfavorable or unripe, a successful vaginal birth is unlikely. Cervical ripeness is an important variable when labor induction is being considered. A ripe cervix is shortened, centered (anterior), softened, and partially dilated. An unripe cervix is long, closed, posterior, and firm. Cervical ripening usually begins prior to the onset of labor contractions and is necessary for cervical dilation and the passage of the fetus.

- **Complementary and alternative medicine methods: Non-pharmacological methods for cervical ripening are less frequently used today, but nurses need to be aware of them and question clients about their use. They are used for cervical ripening and labor induction. The risks and benefits of these agents are unknown. None have been evaluated scientifically, and thus, none can be recommended regarding their efficacy or safety.**
  - **Herbal agents:**
    - **Evening primrose oil**
    - **Black haw**
    - **Black and blue cohosh**
    - **Red raspberry leaves**
  - **Castor oil**
  - **Hot baths**
  - **Enemas**
  - **Sexual intercourse along with breast stimulation**
    - **This promotes the release of oxytocin, which stimulates uterine contractions.**
    - **In addition, human semen is a biological source of prostaglandins used for cervical ripening.**
    - **Sexual intercourse with breast stimulation would appear beneficial, but safety issues have not been fully evaluated, nor can this activity be standardized.**
    - **It appears to shorten the latent phase of labor.**

- **Mechanical methods: Mechanical methods are used to open the cervix and stimulate the progression of labor. They all share a similar mechanism of action: application of local pressure stimulates the release of prostaglandins to ripen the cervix.**
  - **A balloon catheter is inserted into the intracervical canal to dilate the cervix.**

- **Hygroscopic dilators can be inserted to absorb fluid from surrounding tissues and then enlarge. Fresh dilators can be inserted if further dilation is required.**

- **Surgical methods: Surgical methods used to ripen the cervix and induce labor include stripping of the membranes and performing an amniotomy.**
  - **Stripping of the membranes is accomplished by inserting a finger through the internal cervical os and moving it in a circular direction.**
    - **This motion causes the membranes to detach.**
    - **Manual separation of the amniotic membranes from the cervix is thought to induce cervical ripening and the onset of labor.**
      - **There is no strong evidence at this time that membrane stripping significantly shortens the duration of pregnancy.**
  - **An amniotomy involves inserting a cervical hook (Amniohook) through the cervical os to deliberately rupture the membranes.**
    - **This promotes pressure of the presenting part on the cervix and stimulates an increase in the activity of prostaglandins locally.**
    - **Risks associated with these procedures include:**
      - **Umbilical cord prolapse or compression**
      - **Maternal or neonatal infection**
      - **FHR deceleration**
      - **Bleeding**
      - **Client discomfort**

- **Pharmacological methods: The use of pharmacological agents has revolutionized cervical ripening. The use of prostaglandins to attain cervical ripening has been found to be highly effective in producing cervical changes independent of uterine contractions.**
  - **In some cases, women will go into labor and require no additional stimulants for induction.**
  - **Induction of labor with prostaglandins offers the advantage of promoting both cervical ripening and uterine contractility.**
  - **A drawback of prostaglandins is their ability to induce excessive uterine contractions, which can increase maternal and perinatal morbidity**

14. Use this chart to summarize the Stages & phases of labor. Write it so that it makes sense to you. **P. 474, ATI P. 75**

Stage of Labor	***What is happening during this Stage/Phase?***	***Expected effacement & dilation of cervix***	***Expected Frequency of Contractions***	***Expected duration of contractions***	***Anticipated Nursing assessments & interventions***
First Stage 1. Latent 2. Active	**Latent: The latent or early phase gives**	**Latent: Cervical effacement:**	**Latent: Every 5-30 minutes**	**Latent: 30-45 seconds**	**Latent: Assessment of intensity is evaluated by pressing down on the**

3. Transition	**rise to the familiar signs and symptoms of labor. This phase begins with the start of regular contractions and ends when rapid cervical dilation begins. During this phase, women are apprehensive but excited about the start of their labor after their long gestational period. Most women are very talkative during this period, perceiving their contractions to be similar to menstrual cramps.** **Active: The active phase of labor encompasses the time from an increase in the rate of cervical dilation (end of latent phase of labor) until completion of cervical dilation. Cervical dilation begins**	**0%-40% Cervical dilation: 0-3 cm** **Active: Cervical effacement: 40%-80% Cervical dilation: 4-7 cm** **Transition: Cervical effacement: 80%-100% Cervical dilation: 8-10 cm**	**Active: Every 3-5 minutes** **Transition: Every 2-3 minutes**	**Active: 45-60 seconds** **Transition: 60-90 seconds**	**fundus during a contraction to see if it can be dented with the nurse's fingers. The ability to indent the fundus at the peak of the contraction would typically indicate a mild contraction. Perform Leopold maneuvers. Perform a vaginal examination as indicated (if no evidence of progress) to allow the examiner to assess whether the client is in true labor and whether membranes have ruptured. Encourage the client to take slow, deep breaths prior to the vaginal exam. Monitor cervical dilation and effacement. Monitor station and fetal presentation. Prepare for impending delivery as the presenting part moves into positive stations and begins to push against the pelvic floor (crowning). Assessments related to possible rupture of membranes. Perform bladder palpation of a regular basis to prevent bladder distention, which can impede fetal descent through the birth canal and cause trauma to the bladder. Perform a temperature assessment every 4 hr. (every 2 hr. if membranes have ruptured.**

	to occur more rapidly during the active phase. The woman's discomfort intensifies (moderate to strong by palpation). She becomes more intense and inwardly focused, absorbed in the serious work of her labor. She limits interactions with those in the room. If she and her partner have attended childbirth education classes, she will begin to use the relaxation and paced breathing techniques that they learned to cope with the contractions. **Transition: The transition phase is the last phase of the first stage of labor. Dilation slows during this phase. The**				**Active: Provide client/fetal monitoring. Encourage frequent position changes. Encourage voiding at least every 2 hr. Encourage deep cleansing breaths before and after modified paced breathing. Encourage relaxation. Provide non-pharmacological comfort measures. Provide pharmacological pain relief as prescribed.** **Transition: Continue to encourage voiding every 2 hr. Continue to monitor and support the client and fetus. Encourage a rapid pant-pant-blow breathing pattern if the client has not learned a particular breathing pattern. Discourage pushing efforts until the cervix is fully dilated. Listen for client statement expressing the need to have a bowel movement. This statement is a finding of complete dilation and fetal descent. Prepare the client for birth. Observe for perineal bulging or crowning (appearance of the fetal head at the perineum). Encourage the client to begin bearing down with contractions once the cervix is fully dilated.**

	transition phase is the most difficult and, fortunately, the shortest phase for the woman. During transition, the contractions are stronger (hard by palpation), more painful, more frequent, and they last longer. Pressure on the rectum is great, and there is a strong desire to contract the abdominal muscles and push. Other maternal symptoms during the transitional phase include nausea and vomiting, trembling extremities, backache, increased apprehension and irritability, restless movement, increased bloody show from the vagina, inability to				

	relax, diaphoresis, feelings of loss of control, and being overwhelmed (the woman may say, "I can't take it anymore").				
Second Stage	**The second stage of labor begins with complete cervical dilation (10 cm) and effacement and ends with the birth of the newborn. This stage involves moving the fetus through the birth canal and out of the body. The cardinal movements of labor occur during the early phase of passive descent in the second stage of labor. During this expulsive stage, the mother usually feels more in control and less irritable and agitated. She is focused on the work of pushing. The maternal urge**	**Cervical effacement: 100%** **Cervical dilation: 10 cm**	**Every 1-2 minutes**	**60-90 seconds**	**Blood pressure, pulse, and respiration measurements every 5-30 minutes. Uterine contractions. Pushing efforts by client. Increase in bloody show. Shaking of extremities. FHR every 5-15 minutes (depending on fetal risk status) and immediately following birth. Assessment for perineal lacerations, which usually occur as the fetal head is expulsed. Perineal lacerations are defined in terms of depth. Continue to monitor the client/fetus. Assist in positioning the client for effective pushing efforts and in encouraging bearing down efforts during contractions. Promote rest between contractions. Provide comfort measures such as cold compresses. Cleanse the client's perineum as needed if fecal material is expelled during pushing. Prepare for episiotomy, if needed. Provide feedback on labor progress to the client. Prepare for care of**

	to push is generally felt when there is direct contact of the fetus to the pelvic floor. Stretch receptors in the wall of the vagina, rectum, and perineum communicate the pressure of the fetus descending in the birth canal that, along with increased abdominal pressure, causes the overwhelming urge to push described by laboring women.				**neonate. A nurse trained in neonatal resuscitation should be present at delivery.**
Third Stage	**The third stage of labor begins with the birth of the newborn and ends with the separation and birth of the placenta. It consists of two phases: placental separation and placental expulsion. After the infant is born, the uterus continues to contract strongly and**	**None**	**None**	**None**	**Blood pressure, pulse, and respiration measurements every 15 minutes. Clinical findings of placental separation from the uterus as indicated by fundus firmly contracting, swift gush of dark blood from introitus, umbilical cord appears to lengthen as placenta descends, vaginal fullness on exam. Assignment of 1 and 5 minute Apgar scores to the neonate. Instruct the client to push once findings of placental separation are present. Keep client/parents informed of progress of**

	can now retract, decreasing markedly in size. These contractions cause the placenta to pull away from the uterine wall. The following signs of separation indicate that the placenta is ready to deliver: The uterus rises upward, the umbilical cord lengthens, a sudden trickle of blood is released from the vaginal opening, and the uterus changes its shape to globular. Spontaneous birth of the placenta occurs in one of two ways: the fetal side (shiny gray side) presenting first (called Schultz's mechanism or more commonly called "shiny Schultz's") or the maternal side (red raw				**placental expulsion and perineal repair if appropriate. Administer oxytocics as prescribed to stimulate the uterus to contract and thus prevent hemorrhage. Administer analgesics. Gently cleanse the perineal area with warm water and apply a perineal pad or ice pack to the perineum. Promote baby-friendly activities between the family and the newborn, which facilitates the release of endogenous maternal oxytocin. Examples of such activities include introducing the parents to the baby and facilitating the attachment process by promoting skin-to-skin contact immediately following the birth. Allow private time and encourage breastfeeding.**

	side) presenting first (termed Duncan's mechanism or "dirty Duncan").				
Fourth Stage	**The fourth stage begins with completion of the expulsion of the placenta and membranes and ends with the initial physiologic adjustment and stabilization of the mother. This stage initiates the postpartum period. The mother usually feels a sense of peace and excitement, is wide awake, and is very talkative initially. The attachment process begins with her inspecting her newborn and desiring to cuddle and breast-feed him or her. The mother's fundus should be firm and well contracted.**	**None**	**None**	**None**	**Maternal vital signs, fundus, lochia, urinary output, baby-friendly activities of the family. Assess maternal blood pressure and pulse every 15 minutes for the first 2 hr. and determine the temperature at the beginning of the recovery period, then assess every 4 hr. for the first 8 hr. after birth, then at least every 8 hr. Assess fundus and lochia every 15 minutes for the first hour and then according to facility protocol. Massage the uterine fundus and/or administer oxytocics to maintain uterine tone and to prevent hemorrhage. Encourage voiding to prevent bladder distention. Assess episiotomy or laceration repair for erythema. Promote an opportunity for parental-newborn bonding. After they have had a chance to bond with their baby and eat, most new mothers are ready for a nap or at least a quiet period of rest.**

	Typically it is located at the midline between the umbilicus and the symphysis, but then slowly rises to the level of the umbilicus during the first hour after birth. If the uterus becomes boggy, it is massaged to keep it firm. The lochia (vaginal discharge) is red, missed with small clots, and of moderate flow. If the woman has had an episiotomy during the second stage of labor, it should be intact, with the edges approximated and clean and no redness or edema present.				

15. How can we confirm rupture of membranes? **P. 486-487**

The integrity of the membranes can be determined during the vaginal examination.

- **Typically, if intact, the membranes will be felt as a soft bulge that is more prominent during a contraction.**

- **If the membranes have ruptured, the woman may have reported a sudden gush of fluid.**
- **To confirm that membranes have ruptured, a sample of fluid is taken from the vagina via a nitrizine yellow dye swab to determine the fluid's pH.**
    - **Vaginal fluid is acidic, whereas amniotic fluid is alkaline and turns a nitrazine swab blue.**
- **If the nitrazine test is inconclusive, an additional test, called the fern test, can be used to confirm rupture of membranes.**
    - **With this test, a sample of vaginal fluid is obtained, applied to a microscope slide, and allowed to dry.**
        - **Using a microscope, the slide is examined for a characteristic fern pattern that indicated the presence of amniotic fluid.**

What is our priority nursing intervention after confirmation of rupture of membranes? **P. 486**
When membranes rupture, the priority focus should be on assessing fetal heart rate (FHR) first to identify a deceleration, which might indicate cord compression secondary to cord prolapse.

What information do we want to gather from the mother about rupture of membranes if we did not witness it? **P. 486**
If the membranes are ruptured when the woman comes to the hospital, the health care provider should ascertain when it occurred. Prolonged ruptured membranes increase the risk of infection as a result of ascending vaginal pathologic organisms for both mother and fetus. Signs of intrauterine infection to be alert for include maternal fever, fetal and maternal tachycardia, foul odor of vaginal discharge, and an increase in white blood cell count.

16. Describe when an induction might be warranted and the difference between induction and augmentation? **P. 816-817**
Labor induction: involves the stimulation of uterine contractions by medical or surgical means before the onset of spontaneous labor.

Labor augmentation: (stimulating the uterus, typically with oxytocin) enhances ineffective contractions after labor has begun.

Indications for an induction:
- **Prolonged gestation**
- **PPROM**
- **Gestational hypertension**
- **Cardiac disease**
- **Renal disease**
- **Chorioamnionitis**
- **Dystocia**
- **Intrauterine fetal demise (IUFD)**

- **Isoimmunization**
- **Diabetes**

17. Describe what an amniotomy is, the indications for it to be done, and the considerations.
P. 818, ATI P. 103
Amniotomy:
- **An amniotomy is the artificial rupture of the amniotic membranes (AROM) by the provider using a hook, clamp, or other sharp instrument.**
- **Labor typically begins within 12 hr. after the membranes rupture and can decrease the duration of labor by up to 2 hr.**
- **The client is at an increased risk for cord prolapse or infection.**

Indications:
- **Labor progression is too slow and augmentation or induction of labor is indicated.**
- **An amnioinfusion is indicated for cord compression.**

Considerations:
- **Ongoing care:**
  - **Ensure that the presenting part of the fetus is engaged prior to an amniotomy to prevent cord prolapse.**
  - **Monitor FHR prior to and immediately following AROM to assess for cord prolapse as evidenced by variable or late decelerations.**
  - **Assess and document characteristics of amniotic fluid including color, odor, and consistency.**
- **Interventions:**
  - **Document the time of rupture.**
  - **Obtain temperature every 2 hr.**
  - **Provide comfort measures (frequently changing pads, perineal cleansing).**

18. **Medications:** *What is each medication used for? What does it do? Nursing indications/interventions?*

Oxytocin (Pitocin)	**Use: Used for both artificial induction and augmentation of labor.** **What it does: Acts on uterine myofibrils to contract/to initiate or reinforce labor.** **Nursing indications/interventions:** • **Administer as an IV infusion via pump, increasing dose based on protocol until adequate labor progress is achieved.** • **Assess baseline vital signs and FHR and then frequently after initiating oxytocin infusion.** • **Determine frequency, duration, and**

	strength of contractions frequently. • **Notify health care provider of any uterine hypertonicity or abnormal FHR patterns.** • **Maintain careful I&O, being alert for water intoxication.** • **Keep client informed of labor progress.** • **Monitor for possible adverse effects such as hyperstimulation of the uterus, impaired uterine blood flow leafing to fetal hypoxia, rapid labor leading to cervical lacerations or uterine rupture, water intoxication (if oxytocin is given in electrolyte-free solution or at a rate exceeding 20 mU/ min), and hypotension.**
Misoprostol (Cytotec)	**Use: Prostaglandin analog commonly used for cervical ripening.** **What it does: Ripens cervix/to induce labor.** **Nursing indications/interventions:** • **Instruct client about purpose and possible adverse effects of medication.** • **Ensure informed consent is signed per hospital policy.** • **Assess vital signs and FHR patterns frequently.** • **Monitor client's reaction to drug.** • **Initiate oxytocin for labor induction at least 4 hours after last dose was administered.** • **Monitor for possible adverse effects such as nausea and vomiting, diarrhea, uterine hyperstimulation, and category II FHR patterns.**
Penicillin G	**Use: Used to treat Group B Streptococcus.** **What it does: Penicillin G is the treatment of choice for GBS infection because of its narrow spectrum.** **Nursing indications/interventions:** • **The drug is usually administered intravenously at least 4 hours before**

	birth so that it can reach adequate levels in the serum and amniotic fluid to reduce the risk of newborn colonization. • **Close monitoring is required during the administration of intravenous antibiotics because severe allergic reactions can occur rapidly.**
Methylergonovine (Methergine)	**Use: Used to control postpartum hemorrhage.** **What it does: Stimulates the uterus/to prevent and treat postpartum hemorrhage due to atony or subinvolution.** **Nursing indications/interventions:** • **Assess baseline bleeding, uterine tone, and vital signs every 15 minutes or according to protocol.** • **Offer explanation to client and family about what is happening and the purpose of the medication.** • **Monitor for possible adverse effects, such as hypertension, seizures, uterine cramping, nausea, vomiting, and palpitations.** • **Report any complaints of chest pain promptly.** • **Contraindications: Hypertension.** • **0.2 mg IM injection.** • **May be repeated in 5 minutes.** • **Thereafter every 2—4 hours.**
Betamethasone (Celestone)	**Use: Given to mothers in preterm labor and can help prevent or reduce the frequency and severity of respiratory distress syndrome in premature infants.** **What it does: Promotes fetal lung maturity by stimulating surfactant production; prevents or reduces risk of respiratory distress syndrome and intraventricular hemorrhage in the preterm neonate less than 34 weeks' gestation.** **Nursing indications/interventions:** • **Administer two doses intramuscularly 24 hr. apart.** • **Monitor for maternal infection or**

	pulmonary edema. • **Educate parents about potential benefits of drug to preterm infant.** • **Assess maternal lung sounds and monitor for signs of infection.**
Terbutaline Sulfate	**Use: used to delay preterm labor.** **What it does: Helps to prevent and slow contractions of the uterus.** **Nursing indications/interventions:** • **Monitor maternal pulse and blood pressure, frequency and duration of contractions, and FHR.** • **Notify health care professional if contractions persist or increase in frequency or duration or if symptoms of maternal or fetal distress occur.** • **Maternal side effects include tachycardia, palpitations, tremor, anxiety, and headache.**
Methotrexate	**Use: Treatment for ectopic pregnancy or to cause an abortion.** **What it does: Is a folic acid antagonist that inhibits cell division in the developing embryo.** **Nursing indications/interventions:** • **Monitor for adverse effects including nausea, vomiting, stomatitis, diarrhea, gastric upset, increased abdominal pain, and dizziness.** • **Methotrexate for an ectopic pregnancy is ordered based on the client's body surface area.** • **The administration of methotrexate should be limited to people who have had education and training in the handling and administration of hazardous drugs.**
Indomethacin (Indocin)	**Use: Used to stop preterm labor and delay birth** **What it does: Inhibits prostaglandins, which**

	stimulate contractions; inhibits uterine activity to arrest preterm labor. **Nursing indications/interventions:** • **Continuously assess vital signs, uterine activity, and FHR.** • **Administer oral form with food to reduce GI irritation.** • **Do not give to women with peptic ulcer disease.** • **Schedule ultrasound to assess amniotic fluid volume and function of ductus arteriosus before initiating therapy; monitor for signs of maternal hemorrhage.** • **Be alert for maternal adverse effects such as nausea and vomiting, heartburn, rash, prolonged bleeding time, oligohydramnios, and hypertension.** • **Monitor for neonatal adverse effects, including constriction of ductus arteriosus, premature ductus closure, necrotizing enterocolitis, oligohydramnios, and pulmonary hypertension.** • **Contraindicated in >32 weeks' gestations, fetal growth restriction, history of asthma, urticaria, or allergic type reactions to aspirin or NSAIDs.**
Magnesium Sulfate	**Use: Used to stop preterm labor and delay birth** **What it does: Relaxes uterine muscles to stop irritability and contractions, to arrest uterine contractions for preterm labor (off-label use). Has been used in seizure prophylaxis and treatment of seizures in preeclamptic and eclamptic clients for almost 100 years.** **Nursing indications/interventions:** • **Administer IV with a loading dose of 4—6 g over 15—30 minutes initially, and then maintain infusion at 1—4 g/hr.** • **Assess vital signs and deep tendon reflexes (DTRs) hourly; report any**

	hypotension or depressed or absent DTRs. • **Monitor level of consciousness; report any headache, blurred vision, dizziness, or altered level of consciousness.** • **Perform continuous electronic fetal monitoring; report any decreased FHR variability, hypotonia, or respiratory depression.** • **Monitor intake and output hourly; report any decrease in output (<30 mL/hr).** • **Assess respiratory rate; report respiratory rate <12 breaths/min; auscultate lung sounds for evidence of pulmonary edema.** • **Monitor for common maternal side effects, including flushing, nausea and vomiting, dry mouth, lethargy, blurred vision, and headache.** • **Assess for nausea, vomiting, transient hypotension, lethargy.** • **Assess for signs and symptoms of magnesium toxicity, such as decreased level of consciousness, depressed respirations and DTRs, slurred speech, weakness, and respiratory and/or cardiac arrest.** • **Have calcium gluconate readily available at the bedside to reverse magnesium toxicity.**
Nalbuphine hydrochloride (Nubain)	**Use: Used for pain management without causing significant respiratory depression in the mother or fetus.** **What it does: Preoperative analgesia.** **Nursing indications/interventions:** • **Monitor for sedation. Educate the client that this medication may make them sleepy, drowsy, or lightheaded.** • **Institute safety measures to prevent injury in the client.**
Calcium Gluconate	**Use: Used as an antidote for magnesium sulfate toxicity.**

Naloxone (Narcan)	**Use: Used as an antidote for opioid toxicity.** **What it does: Antagonizes action of narcotic agents. Reversal of respiratory depression related to narcotic effects.** **Nursing indications/interventions:** • **Administer via IV, IO, SQ, or ET route.** • **Onset of action is within 2—5 minutes.** • **May repeat dose as necessary; narcotic effects outlast therapeutic effects of naloxone.** • **Monitor for respiratory depression**

19. List procedures done during labor ("intra partum"). **ATI P. 77-78**

Nursing actions:

- **Assess maternal vital signs per agency protocol. Check maternal temperature every 2 hr. if membranes are ruptured.**
- **Assess FHR to determine fetal well-being. This can be performed by use of EFM or spiral electrode that is applied to the fetal scalp. Prior to electrode placement, cervical dilation and rupture of membranes must occur.**
- **Assess uterine labor contraction characteristics by palpation (placing a hand over the fundus to assess contraction frequency, duration, and intensity) or by the use of external or internal monitoring.**
    - **Frequency: Established from the beginning of one contraction to the beginning of the next**
    - **Duration: Time between the beginning of a contraction to the end of that same contraction**
    - **Intensity: Strength of the contraction at its peak, described as mild (slightly tense, like pressing finger to tip of nose), moderate (firm, like pressing finger to chin), or strong (rigid, like pressing finger to forehead)**
    - **Resting tone of uterine contractions: Tone of the uterine muscle between contractions. A prolonged contraction duration (greater than 90 seconds) or too frequent contractions (more than five in a 10-minute period) without sufficient time for uterine relaxation (less than 30 seconds) in between can reduce blood flow to the placenta. This can result in fetal hypoxia and decreased FHR.**
- **Intrauterine pressure catheter: Insert a sterile solid or fluid-filled intrauterine pressure catheter inside the uterus to measure intrauterine pressure.**
    - **Displays uterine contraction patterns on monitor**
    - **Requires the membranes to be ruptured and the cervix to be sufficiently dilated**

- **Vaginal examinations: performed digitally by the provider or qualified nurse to assess for the following:**
    - **Cervical dilation (stretching of cervical os adequate to allow fetal passage) and effacement (cervical thinning and shortening).**
    - **Descent of the fetus through the birth canal as measured by fetal station in centimeters**
    - **Fetal position, presenting part, and lie**
    - **Membranes that are intact or ruptured**
- **Mechanism of labor in vertex presentation: The adaptations the fetus makes as it progresses through the birth canal during the birthing process.**
    - **Engagement: Occurs when the presenting part, usually biparietal (largest) diameter of the fetal head passes the pelvic inlet at the level of the ischial spines, referred to as station 0.**
    - **Descent: The progress of the presenting part (preferably the occiput) through the pelvis. Measured by station during a vaginal examination as either negative (-) station measures in centimeters if superior to station 0 and not yet engaged, or positive (+) station measured in centimeters if inferior to station 0.**
    - **Flexion: When the fetal head meets resistance of the cervix, pelvic wall, or pelvic floor. The head flexes, bringing the chin close to the chest, presenting a smaller diameter to pass through the pelvis.**
    - **Internal rotation: the fetal occiput ideally rotates to a lateral anterior position as it progresses from the ischial spines to the lower pelvis in a corkscrew motion to pass through the pelvis.**
    - **Extension: The fetal occiput passes under the symphysis pubis, and then the head is deflected anteriorly and is born by extension of the chin away from the fetal chest.**
    - **External rotation (restitution): After the head is born, it rotates to the position it occupied as it entered the pelvis inlet (restitution) in alignment with the fetal body and completes a quarter turn to face transverse as the anterior shoulder passes under the symphysis.**
    - **Birth by expulsion: After birth of the head and shoulders, the trunk of the neonate is born by flexing it toward the symphysis pubis.**

20. Define each of the 6 cardinal movements of labor (Mechanisms of labor). **P. 465-467**
Engagement: Occurs when the greatest transverse diameter of the head in the vertex (biparietal diameter) passes through the pelvic inlet (usually 0 station). The head usually enters the pelvis with the sagittal suture aligned in the transverse diameter.

Descent: Is the downward movement of the fetal head until it is within the pelvic inlet. Descent occurs intermittently with contractions and is brought about by one or more of the following forces:

- **Pressure of the amniotic fluid**

- **Direct pressure of the fundus on the fetus's buttocks or head (depending on which part is located in the top of the uterus)**
- **Contractions of the abdominal muscles (second stage)**
- **Extension and straightening of the fetal body**

Descent occurs throughout labor, ending with birth. During this time, the mother experiences discomfort, but she is unable to isolate this particular fetal movement from her overall discomfort.

Flexion: Occurs as the vertex meets resistance from the cervix, the walls of the pelvis, or the pelvic floor. As a result, the chin is brought into contact with the fetal thorax and the presenting diameter is changed from occipitofrontal to suboccipitobregmatic (9.5 cm), which achieves the smallest fetal skull diameter presenting to the maternal pelvic dimensions.

Internal rotation: After engagement, as the head descends, the lower portion of the head (usually the occiput) meets resistance from one side of the pelvic floor. As a result, the head rotates about 45 degrees anteriorly to the midline under the symphysis. This movement is known as internal rotation. Internal rotation brings the anteroposterior diameter of the pelvic outlet. It aligns the long axis of the fetal head with the long axis of the maternal pelvis. The widest portion of the maternal pelvis is the anteroposterior diameter, and thus the fetus must rotate to accommodate the pelvis.

Extension: With further descent and full flexion of the head, the nucha (the base of the occiput) becomes impinged under the symphysis. Resistance from the pelvic floor causes the fetal head to extend so that it can pass under the pubic arch. Extension occurs after internal rotation is complete. The head emerges through extension under the symphysis pubis along with the shoulders. The anterior fontanel, brow, nose, mouth, and chin are born successively.

External rotation (restitution): After the head is born and is free of resistance, it untwists, causing the occiput to move about 45 degrees back to its original left or right position (restitution). The sagittal suture has now resumed its normal right-angle relationship to the transverse (bisacromial) diameter of the shoulders (i.e., the head realigns with the position of the back in the birth canal). External rotation of the fetal head allows the shoulders to rotate internally to fit the maternal pelvis.

Expulsion: Expulsion of the rest of the body occurs more smoothly after the birth of the head and the anterior and posterior shoulders.

21. Describe the benefits for a woman to change position while in labor. Include what suggestions the nurse can give the laboring woman about position changes? **P. 469**

Changing positions and moving around during labor and birth offer several benefits. Maternal position can influence pelvic size and contours. Changing position and walking affect the pelvis joints, which may facilitate fetal descent and rotation. Squatting enlarges

the pelvic inlet and outlet diameters, whereas a kneeling position removes pressure on the maternal vena cava and helps rotate the fetus from a posterior position to an anterior one to facilitate birth. The use of any upright or lateral position, compared with supine or lithotomy positions, may:

- **Reduce the length of the first stage of labor**
- **Reduce the duration of the second stage of labor**
- **Reduce the number of assisted deliveries (vacuum and forceps)**
- **Reduce episiotomies and perineal tears**
- **Contribute to fewer abnormal fetal heart rate patterns**
- **Increase comfort/reduce requests for pain medication**
- **Enhance a sense of control by the mother**
- **Alter the shape and size of the pelvis, which assists in descent**
- **Assist gravity to move the fetus downward**

22. What are the 4 techniques used to assess ongoing data during labor and birth? **P. 485**

During labor and birth, various techniques are used to assess maternal status. These techniques provide an ongoing source of data to determine the woman's response and her progress in labor:

- **Assess maternal vital signs, including temperature, blood pressure, pulse, respiration, and pain, which are primary components of the physical examination and ongoing assessment.**
- **Also review the prenatal record to identify risk factors that may contribute to a decrease in uteroplacental circulation during labor.**
- **If there is no vaginal bleeding on admission, a vaginal examination is performed to assess cervical dilation, after which it is monitored periodically as necessary to identify progress.**
- **Evaluate maternal pain and the effectiveness of pain management strategies at regular intervals during labor and birth.**

23. What is a vaginal exam (SVE-sterile vaginal exam)? How often should it be done according to WHO (World Health Organization)? **P. 485-486**

Vaginal examination

- **Purpose:**
  - **The purpose of performing a vaginal examination is to assess the amount of cervical dilation, the percentage of cervical effacement, and the fetal membrane status and to gather information on presentation, position, station, degree of fetal head flexion, and presence of fetal skull swelling or molding.**
- **Procedure:**
  - **The woman is typically on her back during the vaginal examination.**
  - **The vaginal examination is performed gently, with concern for the woman's comfort.**

    - **If it is the initial vaginal examination to check for membrane status, water is used as a lubricant.**
    - **After donning sterile gloves, the examiner inserts his or her index and middle fingers into the vaginal introitus.**
    - **Next, the cervix is palpated to assess dilation, effacement, and position (e.g., posterior or anterior).**
    - **If the cervix is open to any degree, the presenting fetal part, fetal position, station, and presence of molding can be assessed.**
    - **In addition, the membranes can be evaluated and described as intact, bulging, or ruptured.**
    - **At the conclusion of the vaginal examination, the findings are discussed with the woman and her partner to bring them up to date about labor progress.**
    - **In addition, the findings are documented either electronically or in writing and reported to the primary health care provider in charge of the case**
- **Frequency according to WHO:**
    - **The world health organization [WHO] recommends digital vaginal examinations at intervals of 4 hours for routine assessment and identification of a delay in active labor.**

24. Why is important to assess frequency, duration and intensity of contractions? **ATI P. 87**

The primary stimulus powering labor is uterine contraction. Contractions cause complete dilation and effacement of the cervix during the first stage of labor. The secondary powers in labor involve the use of intra-abdominal pressure (voluntary muscle contractions) exerted by the woman as she pushes and bears down during the second stage of labor. Palpation of contractions at the fundus for frequency, intensity, duration, and resting tone is used to evaluate fetal well-being.

- **During labor, uterine contractions compress the uteroplacental arteries, temporarily stopping maternal blood flow into the uterus and intervillous spaces of the placenta, decreasing fetal circulation and oxygenation.**
- **Circulation to the uterus and placenta resumes during uterine relaxation between contractions.**

25. What 2 ways can you assess uterine contractions? **P. 487**

Uterine contractions during labor are monitored by palpation and by electronic monitoring. Assessment of the contractions includes frequency, duration, intensity, and uterine resting tone.

Palpation:

- **To palpate the fundus for contraction intensity, place the pads of your fingers on the fundus and describe how it feels: like the tip of the nose (mild), like the chin (moderate), or like the forehead (strong).**
- **Palpation of intensity is a subjective judgement of the indentability of the uterine wall; a descriptive term is assigned (mild, moderate, or strong).**

Electronic Monitoring:

- **The second method used to assess the intensity of uterine contractions is electronic monitoring, either external or internal.**
- **Both methods provide a reasonable measurement of the intensity of uterine contractions.**
- **Although the external fetal monitor is sometimes used to estimate the intensity of uterine contractions, it is not as accurate an assessment tool.**

26. To palpate uterine contraction intensity, a mild contraction feels like your **_Nose___** , a moderate contraction feels like your **_Chin____**, and strong contraction feels like your **_Forehead_____**. **P. 487, ATI P. 77**

27. List the sources of pain during labor. **ATI P. 81**

First stage: Internal visceral pain that can be felt as back and leg pain

- **Pain causes:**
  - **Dilation, effacement, and stretching of the cervix**
  - **Distention of the lower segment of the uterus**
  - **Contractions of the uterus with resultant uterine ischemia**

Second stage: Pain that is somatic and occurs with fetal descent and expulsion

- **Pain causes:**
  - **Pressure and distention of the vagina and the perineum, described by the client as burning, splitting, and tearing**
  - **Pressure and pulling on the pelvic structures (ligaments, fallopian tubes, ovaries, bladder, and peritoneum)**
  - **Lacerations of soft tissues (cervix, vagina, and perineum)**

Third stage: Pain with the expulsion of the placenta is similar to pain experienced during the first stage.

- **Pain causes:**
  - **Uterine contractions**
  - **Pressure and pulling of pelvic structures**

Fourth stage: Pain is caused by distention and stretching of the vagina and perineum incurred during the second stage with splitting, burning, and tearing sensation.

28. List how pain assessment is done during labor. **ATI P. 81**

Pain is a subjective and individual experience, and each client's response to the pain of labor is unique. Safety for the mother and fetus must be the first consideration of the nurse when planning pain management measures.

Pain Assessment:

- **Pain level cannot always be assessed by monitoring the outward expression of a client. Client pain assessment can require persistent questioning and astute**

observation by the nurse. Cultural beliefs and behaviors of clients during labor and delivery can affect the client's pain management.

- **Anxiety and fear are associated with pain. As fear and anxiety increase, muscle tension increases, and thus the experience of pain increases, becoming a cycle of pain. Fear, tension, and pain slow the progression of labor.**
- **Assess beliefs and expectations related to discomfort, pain relief, and birth plans regarding pain relief methods for clients in labor.**
- **Assess level, quality, frequency, duration, intensity, and location of pain through verbal and nonverbal cues. Use an appropriate pain scale allowing the client to indicate the severity of their pain on a scale of 0 to 10, with 10 representing the most severe pain.**
- **Indications of pain:**
    - **Behavioral manifestations (crying, moaning, screaming, gesturing, writhing, avoidance, withdrawal, inability to follow instructions)**
    - **Increased blood pressure, tachycardia, and hyperventilation**
    - **Nausea and vomiting with an increase in gastric acidity**
- **Help the client maintain the proper position during administration of pharmacological interventions. Assist the client with positioning for comfort during labor and birth, and following pharmacological interventions.**
- **Provide client safety after any pharmacological intervention by putting the bed in a low position, maintaining side rails in the upright position, placing the call light within the client's reach, and advising the client and their partner to call for assistance if they need to leave the bed or ambulate.**
- **Evaluate the client's response to pain relief methods used (verbal report that pain is relieved or being relieved, appears relaxed between contractions).**

29. What should the nurse consider prior to administration of opioid pain medication during labor? **P. 506, ATI P. 83**

Nursing considerations:

- **All opioids are lipophilic and cross the placental barrier, but do not affect labor progress in the active phase.**
- **Opioids are associated with newborn respiratory depression, decreased alertness, inhibited sucking, and a delay in effective feeding.**

Nursing actions:

- **Prior to administering analgesic medication, verify that labor is well established by performing a vaginal exam.**
- **Administer antiemetics as prescribed.**
- **Monitor maternal vital signs, uterine contraction pattern, and continuous FHR monitoring.**
    - **Assess maternal vital signs and fetal heart rate and pattern and documented before and after administration of opioids for pain relief.**
- **Assess for adverse reactions (difficulty breathing) and be prepared to administer antidotes whenever medications are administered**

30. Describe the gate-control theory of pain control. Give examples. **P. 499, ATI P. 82**

Gate-control theory of pain control: proposes that local physical stimulation can interfere with pain stimuli by closing a hypothetical gate in the spinal cord, thus blocking pain signals from reaching the brain.

Examples:

- **Sensory stimulation strategies:**
  - **Aromatherapy**
  - **Breathing techniques**
  - **Imagery**
  - **Music**
  - **Use of focal points**
  - **Subdued lighting**
- **Cutaneous stimulation strategies:**
  - **Therapeutic touch and massage: back rubs and massage**
  - **Walking**
  - **Rocking**
  - **Effleurage: light, gentle circular stroking of the client's abdomen with the fingertips in rhythm with breathing during contractions**
  - **Sacral counterpressure: consistent pressure is applied by the support person using the heel of the hand or fist against the client's sacral area to counteract pain in the lower back**
  - **Application of heat or cold**
  - **Transcutaneous electrical nerve stimulation (TENS) therapy**
  - **Hydrotherapy (whirlpool or shower) increases maternal endorphin levels**
  - **Acupressure**
  - **Frequent maternal position changes to promote relaxation and pain relief**
    - **Semi-sitting**
    - **Squatting**
    - **Kneeling**
    - **Kneeling and rocking back and forth**
    - **Supine position only with the placement of a wedge under one of the client's hips to tilt the uterus and avoid supine hypotension syndrome**

31. List 3 non pharmacologic pain intervention methods. **P. 499-505**

Continuous Labor Support: Continuous labor support has shown to have beneficial effects on the mother and the newborn primarily due to the reduction in anxiety during the laboring experience. Most women expressed greater satisfaction with their childbirth experience.

Hydrotherapy: A non-pharmacological measure that may involve showering or soaking in a regular tub or whirlpool bath.

- **Warm water provides soothing stimulation of nerves in the skin, promoting vasodilation, reversal of sympathetic nervous response, and a reduction in catecholamines.**
- **Contractions are usually less painful in warm water because the warmth and buoyancy of the water have a relaxing effect.**

Ambulation and Position Changes: Ambulation and position changes during labor are another extremely useful comfort measure.

- **Changing position frequently (every 30 minutes or so) – sitting, walking, kneeling, standing, lying down, getting on hands and knees, and using a birthing ball – helps relieve pain.**
- **Position changes also may help to speed labor by adding the benefits of gravity and changing the shape of the pelvis.**

Acupuncture and Acupressure: Acupuncture and acupressure can be used to relieve pain during labor. However, both methods require a trained, certified clinician, and such a person is not available in many birth facilities.

- **Acupuncture: Involves stimulating key trigger points with needles.**
    - **Classical Chinese teaching holds that throughout the body there are meridians or channels of energy (qi) that when in balance regulate body functions.**
    - **Pain reflects an imbalance or obstruction of the flow of energy.**
    - **The purpose of acupuncture is to restore this diminishing pain.**
        - **Stimulating the trigger points causes the release of endorphins, reducing the perception of pain.**
- **Acupressure: Involves the application of a firm finger or massage used in acupuncture to reduce the pain sensation.**
    - **The amount of pressure is important.**
    - **The intensity of the pressure is determined by the needs of the woman.**
    - **Holding and squeezing the hand of a woman in labor may trigger the point most commonly used for both techniques.**
    - **Some acupressure points are focused along the spine, neck, shoulder, toes, and soles of the feet.**
        - **Pressure along the side of the spine can help relieve back pain during labor.**
    - **Acupuncture may reduce labor pain, increasing satisfaction with pain management and reduce use of pharmacologic management.**

Application of Heat and Cold: Superficial applications of heat and/or cold, in various forms, are popular with laboring women.

- **Heat: Heat is typically applied to the woman's back, lower abdomen, groin, and/or perineum.**

    - **In addition to being used for pain relief, heat is used to relieve chills or trembling, decrease joint stiffness, reduce muscle spasm, and increase connective tissue extensibility.**
- **Cold (cryotherapy): Is usually applied on the woman's back, chest, and/or face during labor.**
    - **"Instant" cold packs, often available in hospitals, usually are not cold enough to effectively relieve labor pain.**
    - **Cold has the additional effects of relieving muscle spasms and reducing inflammation**

Attention Focusing and Imagery: Attention focusing and imagery use many of the senses and the mind to focus on stimuli.

- **Breathing, relaxation, positive thinking, and positive visualization work well for mothers in labor.**
    - **The use of these techniques keeps the sensory input perceived during the contraction from reaching the pain center in the cortex of the brain.**

Effleurage and Massage: Effleurage is a light, stroking, superficial touch of the abdomen, in rhythm with breathing during contractions.

- **It is used as a relaxation and distraction technique from discomfort.**
- **Effleurage and massage use the sense of touch to promote relaxation and pain relief.**
- **Massage works as a form of pain relief by increasing the production of endorphins in the body.**
    - **Endorphins reduce the transmission of signals between nerve cells and thus lowering the perception of pain.**
        - **Because tough receptors go to the brain faster than pain receptors, massage –anywhere on the body – can block the pain message to the brain.**
- **In addition, touching and massage distract the woman from discomfort.**
- **Massage involves manipulation of the body's soft tissues. It is commonly used to help relax tense muscles and to soothe and calm the individual.**
    - **Massage may help to relieve pain by assisting with relaxation, inhibiting sensory transmission in the pain pathways, or improving blood flow and oxygenation of tissues.**

Breathing Techniques: Conscious use of breath by the woman has the power to profoundly influence her labor and how she engages with it.

- **The first action anyone takes in any situation is a breath.**
    - **The breath affects the lungs, immediately cueing the nervous system.**
    - **The nervous system responds by sending messages, which impact our entire psychophysiologic system.**
    - **Messages sent from the nervous system affect us physically, emotionally, and mentally.**

    - **If we alter how we breathe, we alter the constellation of messages and reactions in our entire mind-body experience.**
- **Breathing techniques are effective in producing relaxation and pain relief through the use of distraction.**
    - **If the woman is concentrating on slow-paced rhythmic breathing, she is not likely to fully focus on contraction pain.**
- **Controlled breathing helps reduce the pain experienced by using stimulus-response conditioning.**
    - **The woman selects a focal point within her environment to start at during the first sign of contraction.**
    - **This focus creates a visual stimulus that goes directly to her brain.**
    - **The woman takes a deep cleansing breath, which is followed by rhythmic breathing.**
    - **Verbal commands from her partner supply an ongoing auditory stimulus to her brain.**
- **Benefits of practicing patterned breathing include breathing:**
    - **Becomes an automatic response to pain.**
    - **Increases relaxation and can be used to deal with life's everyday stresses.**
    - **Is calming during labor.**
    - **Provides a sense of well-being and a measure of control.**
    - **Brings purpose to each contraction, making them more productive.**
    - **Provides more oxygen for the mother and fetus.**

32. Describe how epidural analgesia is administered, what are the implications, and what is the difference between this and a spinal epidural? **P. 508-509**

Epidural analgesic: Women requesting epidural analgesia in labor will do so when they feel they need pain relief, and for some it might be quite early in their labor

- **Procedure:**
    - **Epidural analgesia for labor and birth involves the injection of a local anesthetic agent (e.g., lidocaine or bupivacaine) and an opioid analgesic agent (e.g., morphine or fentanyl) into the lumbar epidural space.**
    - **A small catheter is then passed through the epidural needle to provide continuous access to the epidural space for maintenance of analgesia throughout labor and birth.**
        - **Epidural analgesia does increase the duration of the second stage of labor and may increase the rate of instrument-assisted vaginal deliveries as well as that of oxytocin administration.**
    - **An epidural involves the injection of a drug into the epidural space, which is located outside the dura mater between the dura and the spinal canal.**
    - **The epidural space is typically entered through the third and fourth lumbar vertebrae with a needle, and a catheter is threaded into the epidural space.**

- **Implications: An epidural is contraindicated for women with a previous history of spinal surgery or spinal abnormalities, coagulation defects, cardiac disease, obesity,**

infection, hypovolemia, and for the woman who is receiving anticoagulation therapy.

- **Maternal complications:**
  - **Nausea and vomiting**
  - **Hypotension**
    - **Avoiding a supine position after an epidural catheter has been placed with help to minimize hypotension**
  - **Fever**
  - **Pruritus**
  - **Intravascular injection**
  - **Maternal fever**
  - **Allergic reaction**
  - **Respiratory depression**
- **Fetal complications:**
  - **Fetal distress**
    - **secondary to maternal hypotension**

Spinal-epidural analgesia: This technique involves inserting the epidural needle into the epidural space and subsequently inserting a small-gauge needle through the epidural needle into the subarachnoid space. An opioid, without a local anesthetic, is injected into this space. The spinal needle is then removed and an epidural catheter is inserted for later use.

- **Difference between this and an epidural:**
  - **It allows the woman's motor function to remain active.**
    - **Her ability to bear down during the second stage of labor is preserved because the pushing reflex is not lost, and her motor power remains intact.**
  - **Provides greater flexibility and reliability for labor than either spinal or epidural analgesia.**
    - **When compared with traditional epidural or spinal analgesia, which often keeps the woman lying in bed, CSE allows her to ambulate.**
      - **Ambulating during labor provides several benefits:**
        - **It may help control pain better**
        - **Shorten the first stage of labor**
        - **Increase the intensity of the contractions**
        - **Decrease the possibility of an operative vaginal or cesarean birth**

33. What added considerations are there for the nurse caring for a woman who has undergone general anesthesia? **P. 511, ATI P. 85**

General anesthesia: Rarely used for vaginal or cesarean births when there are no complications present. It is used only in the event of a delivery complication or emergency when there is a contraindication to nerve block analgesia or anesthesia. General anesthesia produces unconsciousness.

Nursing Actions:

- **Monitor maternal vital signs**
- **Monitor FHR patterns**
- **Ensure that the client has had nothing by mouth**
- **Ensure that the IV infusion is in place**
- **Apply antiembolic stockings or sequential compression devices**
- **Premedicate the client with oral antacid to neutralize acidic stomach contents**
- **Administer a histamine$_2$-receptor antagonist, such as ranitidine, to decrease gastric acid production**
- **Administer metoclopramide to increase gastric emptying as prescribed**
- **Place wedge under one of the client's hips to displace the uterus**
- **Maintain an open airway and cardiopulmonary function**
- **Assess the client postpartum for decreased uterine tone, which can lead to hemorrhage and be produced by pharmacological agents used in general anesthesia**

Client Education: Facilitate parent-newborn attachment as soon as possible

COMPLETE Q34 & Q35 after you review R,K,C p 492-498 and ATI p86-89 for understanding of fetal monitoring and you complete the Online Fetal monitoring program

34. Where in the contraction do the increment, acme and decrement happen? **P. 487**
The contraction resembles a wave, moving downward to the cervix and upward to the fundus of the uterus. Each contraction starts with a building up (increment), gradually reaching the acme (peak intensity), and then letting down (decrement).

35. Briefly describe what Category I, Category II and Category III fetal heart rate tracings look like. **P. 495**
Category I: Predictive of normal fetal acid-base status and do not require intervention

- **Baseline rate (110-160 bpm)**
- **Baseline variability moderate**
- **Present or absent accelerations**
- **Present or absent early decelerations**
- **No late or variable decelerations**

Can be monitored with intermittent auscultation during labor

Category II: Not predictive of abnormal fetal acid-base status, but require evaluation and continues surveillance

- **Fetal tachycardia (> 160 bpm) present**
- **Bradycardia (<110 bpm) not accompanied by absent baseline variability**
- **Absent baseline variability not accompanied by recurrent decelerations**
- **Minimal or marked variability**
- **Recurrent late decelerations with moderate baseline variability**

- **Recurrent variable decelerations accompanied by minimal or moderate baseline variability, overshoots, or shoulders**
- **Prolonged decelerations >2 minutes but <10 minutes.**

Category III: Predictive of abnormal fetus acid-base status and require intervention

- **Fetal bradycardia (<110 bpm)**
- **Recurrent late decelerations**
- **Recurrent variable decelerations—declining or absent**
- **Sinusoidal pattern (smooth, undulating baseline)**

36. Why is support vital for laboring women? What is a doula? What is a CNM? **P. 470, 9, 499**
For many women, the essential ingredients for a safe and satisfying birth include a sense of empowerment and success in coping with or transcending the experience, in addition to having solid, positive encouragement from a support companion. The overall objective of providing support for women during childbirth is to create a positive experience for her, while preserving her physical and psychologic health. During the natural course of childbirth, a laboring woman's functional ability is limited secondary to pain, and she often has trouble making decisions. The support person can help make them based on his or her knowledge of the woman's birth plan and personal wishes.

Doula: A doula is a nonmedical birth companion who provides continuous emotional, physical, and educational support to the woman and family during childbirth and the postpartum period.

CNM: A certified nurse midwife (CNM) has postgraduate training in the care of normal pregnancy and delivery and is certified by the American College of Nurse Midwives (ACNM). Midwives are primary care providers for women with a special emphasis on pregnancy, childbirth, and reproductive health.

37. What is "crowning"? **P. 518**
Crowning: When the fetal head is visible at vaginal opening.

38. List a summary of assessments during second, third and fourth stages of labor. **ATI P. 96-97**
Second Stage: Begins with complete dilation and effacement

- **Blood pressure, pulse, and respiration measurements every 5 to 30 minutes**
- **Uterine contractions**
- **Pushing efforts by client**
- **Increase in bloody show**
- **Shaking of extremities**
- **FHR every 15 minutes (depending on fetal risk status) and immediately following birth**
- **Assessment for perineal lacerations, which usually occur as the fetal head is expulsed. Perineal lacerations are defined in terms of depth.**

- **First degree: laceration extends through the skin of the perineum and does not involve the muscles.**
- **Second degree: Laceration extends through the skin and muscle into the perineum but not the anal sphincter.**
- **Third degree: Laceration extends through the skin, muscle, perineum, and external anal sphincter muscle.**
- **Fourth degree: Laceration extends through skin, muscles, anal sphincter, and the anterior rectal wall.**

Third Stage: Lasts from the birth of the fetus until the placenta is delivered

- **Blood pressure, pulse, and respiration measurements every 15 minutes**
- **Clinical findings of placental separation from the uterus as indicated by:**
  - **Fundus firmly contracting**
  - **Swift gush of dark blood from introitus**
  - **Umbilical cord appears to lengthen as placenta descends**
- **Assignment of 1 and 5 minute Apgar scores to the neonate**

Fourth Stage: Begins with the delivery of the placenta and includes at least the first 2 hours after birth.

- **Maternal vital signs**
- **Fundus**
- **Lochia**
- **Urinary output**
- **Baby-friendly activities of the family**

39. What are the signs of placental separation and how long can it take for the placenta to be expelled? **P. 522, 478**

Signs of placental separation:

- **Firmly contracting uterus**
- **Change in uterine shape from discoid to globular ovoid**
- **Sudden gush of dark blood from vaginal opening**
- **Lengthening of umbilical cord protruding from vagina**

Duration for the placenta to be expelled: The placenta will be expelled within 2-30 minutes unless there is gentle external traction to assist.

40. What is the difference between a laceration and an episiotomy? **P. 99, 518**

Laceration: A perineal tear that forms on its own during a vaginal birth.
Episiotomy: Incising the perineum area to provide more space for the presenting part.

41. What are the normal blood loss amounts for a vaginal and a cesarean delivery? **P. 478**

Vaginal Delivery: 500 mL
Cesarean Delivery: 1000 mL

42. List “post procedures” done during the fourth stage of labor? **ATI P. 78**

Nursing Assessment:

- **Maternal vital signs**
- **Fundus**
- **Lochia**
- **Perineum**
- **Urinary output**
- **Maternal/newborn baby-friendly activities**

Nursing Actions:

- **Assess blood pressure and pulse at least every 15 minutes for the first 2 hr. after birth, and assess temperature every 4 hr. for the first 8 hr. after birth and then at least every 8 hr.**
- **Assess fundus and lochia every 15 minutes for the first hour and then according to facility protocol.**
- **Massage the uterine fundus and/or administer oxytocics as prescribed to maintain uterine tone to prevent hemorrhage.**
- **Assess the client’s perineum, and provide comfort measurers as indicated.**
- **Encourage voiding to prevent bladder distention.**
- **Promote an opportunity for maternal/newborn bonding.**
- **Offer assistance with breastfeeding, and provide reassurance.**

Client Education: Notify the nurse of increased vaginal bleeding or passage of blood clots.

43. What are important interventions for the newborn at birth? Why is skin to skin time with mom so important? **P. 521**

Important interventions for the newborn at birth:

- **Suction the newborn’s mouth first (because the newborn is an obligate nose breather) and then the nares with a bulb syringe to prevent aspiration of mucus, amniotic fluid, or meconium**
- **The umbilical cord is double-clamped and cut between the clamps by the birth attendant or the woman’s partner.**
- **Drying the newborn**
- **Providing warmth to prevent heat loss by evaporation**
- **Placing the newborn under a radiant heat source**
- **Putting on a stockinette/knitted cap to further reduce heat loss after drying**
- **Assign an Apgar score at 1 and 5 minutes**
- **Secure two identification bands on the newborn’s wrist and ankle that match the band on the mother’s wrist to endues the newborn’s identity**

Importance of skin-to-skin contact: Skin-skin contact immediately after birth and the newborn’s first attempt at breast-feeding further augment maternal oxytocin levels, strengthening the uterine contractions that will help the placenta to separate and the uterus to contract to prevent hemorrhage. Endorphins, the body’s natural opiates, produce an

altered state of consciousness and aid in blocking out pain. In addition, the drop in adrenaline level from the second stage, which had kept the mother and baby alert at first contact, causes most women to shiver and feel cold shortly after giving birth.

- **Has a positive effect on maternal newborn bonding**
- **Initiates breastfeeding**
- **Positive effect on breastfeeding duration**
- **Positive effect on cardiorespiratory stability**
- **Positive effect on oxygenation levels**
- **Can help reduce episodes of apnea and crying**

44. What important assessments as the nurse are you continuing to make, in relation to mom, during the third stage of labor? **P. 523**

Monitoring maternal physical status by assessing:

- **Vaginal bleeding:**
  - **Amount**
  - **Consistency**
  - **Color**
- **Vital signs taken every 15 minutes:**
  - **Blood pressure**
  - **Pulse**
  - **Respirations**
- **Uterine fundus:**
  - **Should be firm**
  - **Should be in the midline**
  - **Should be at the level of the umbilicus**