OBSTETRIC NURSING

HUMAN SEXUALITY

Sexuality

- Encompasses the complex emotions, feelings, preferences, attitude and behaviors that are related to sexual self and eroticism.
- Behavior of being a male or female

Gender

- Sense of femininity or masculinity

Sex

- Biologic male or female status

FEMALE

EXTERNAL GENITALIA

- **Vulva**
  - Collective term for external female genitalia
- **Mons pubis**
  - Also termed as Mons Veneris
  - Pad of adipose tissue that lies over symphysis pubis covered by skin and at puberty covered by hair.
- **Labia Majora**
  - Large lips
  - Two folds of adipose tissue covered by loose connective tissue and epithelium.
  - Serves as protection for the external genitalia and the distal urethra and vagina.
- **Labia Minora**
  - Two hairless folds of connective tissue covered with mucous membrane and the external surface with skin.
- **Clitoris**
  - Pea-shaped composed of erectile tissues and sensitive nerve endings
  - Site of sexual arousal and eroticism in females
- **Fourchette**
  - Formed by the posterior joining of the labia minora and majora
  - Common site for episiotomy
- **Vestibule**
  - Almond-shaped structure containing urinary meatus, Skene's gland, hymen, vaginal orifice and Bartholin's gland
- **Urinary Meatus**
  - Urethral opening for urination
- **Skene's Gland**
  - Also called Paraurethral Gland
  - Secretes small amount of mucous which functions as lubrication during sexual intercourse or coitus
- **Bartholin's Gland**
  - Also termed as Paravaginal Gland
  - Secretes alkaline substance responsible for neutralizing the acidity of the vagina to keep the sperm alive.
- **Vaginal Orifice**
  - External opening of the vagina
- **Hymen**
  - Membranous tissue that covers vaginal orifice
- **Perineum**
  - Muscular structure in between vagina and anus

INTERNAL GENITALIA

- Passageway of menstruation and fetus
- 6-7 cm (anterior wall); 8-9 cm (posterior wall)
- Has dilatable canal
- Rugae
  - Thick folds of membranous stratified epithelium which permits stretching without tearing.

❖ **Uterus**
- Hollow, muscular, pear-shaped organ for containment and nourishment of the fetus
- Function for menstruation pregnancy and labor
- Size (non-pregnant: 2.5 cm thick, 5 cm wide ,5-7 cm long
- Shape (non-pregnant): pear shape
- Shape (pregnant): ovoid
- Weight
  - ✓ Non pregnant: 60 g
  - ✓ Pregnant: 1000g

UTERINE ANATOMY	
Fundus	• Upper cylindrical layer • Portion that can be palpated at the abdomen to determine the amount of uterine growth occurring during pregnancy
Isthmus	• Short segment between the body and the cervix • Portion of the uterus that is most commonly cut when a fetus is born by a Cesarean section
Corpus (Body)	• Portion of the structure that expands to contain the growing fetus
Cervix	• Lower uterine segment • Lowest portion of the uterus • Approximately half of it lies above the vagina and half extends to the vagina

UTERINE LAYERS	
Endometrium	• Innermost layer • Composed of 2 layers (basal layer and glandular layer)
Myometrium	• Muscle layer of the uterus • Constricts the tubal junctions and preventing regurgitation of menstrual blood into the tubes • Contracts during the labor and delivery processes
Perimetrium	• Outmost layer or the uterus • Serves the purpose of adding strength and support to the structure

❖ **Decidua** – Latin word for "falling off"

3 Types of Decidua	
Decidua basalis	Endometrium that lies directly under the embryo
Decidua capsularis	Portion of the endometrium that stretches or encapsulates the surface of the trophoblast
Decidua vera	Remaining portion of the uterine lining

❖ **Ovaries**
- 4cm long by 2cm in diameter and approximately 1.5cm thick or almond shape, grayish-white, female sex gonads producing progesterone and estrogen.
- Function
  - ✓ Produce, mature and discharge ova (egg cells)
  - ✓ Produce estrogen and progesterone and initiate and regulate menstrual cycle.

❖ **Fallopian Tube**
- 10 cm long
- Conveys ova from the ovaries to the uterus and provides a place for fertilization of the ovum by the sperm

SEGMENTS	
Infundibulum	• Approximately 2 cm long and is funnel shaped • Covered by fimbria that help to guide the ovum into the fallopian tube
Ampulla	• Longest portion on the tube • Common site for fertilization; common site for ectopic pregnancy

Isthmus	• Portion of the tube that is cut or sealed in a tubal ligation or tubal sterile procedure
Interstitial	• Most dangerous site for ectopic pregnancy

MALE

❖ **Penis**

- Male organ for copulation and urination
- Layers
  - ✓ 2 corpus cavernosa - lateral column of erectile tissue
  - ✓ 1 corpus spongiosum -located on the underside of the penis

❖ **Scrotum**

- Pouch hanging below the penis
- Contains the testes
- Temperature regulator of the testes

❖ **Testes**

- Two ovoid glands, 2-3 cm wide, that lie in the scrotum.

INTERNAL GENITALIA

❖ **Epididymis**

- Responsible for conducting sperm from the testis to the vas deferens
- Site of maturation of the sperm

❖ **Vas Deferens**

- Carries sperm from the epididymis through the inguinal canal into the abdominal cavity
- Sperm matures as it passes the vas deferens.

❖ **Seminal Vesicle**

- Secretes viscous portion of the semen.
- Contains:
  - ✓ Fructose
  - ✓ Protein
  - ✓ Prostaglandin

❖ **Ejaculatory Duct**

- Conduit of semen and joins the seminal vesicles to the urethra.

❖ **Prostate Gland**

- Produces alkaline substance for the protection of the sperm
- Reduces the acidity of the vagina

❖ **Cowper's gland**

- Also termed as bulbourethral gland.
- Secretes lubricant into the urethra to facilitate transport of sperm during ejaculation

❖ **Urethra**

- Vessels of transport of urine and semen.

MENSTRATION

AVERAGE CYCLE: 28 days (23-35days)
Duration of menstrual flow

- 4-6days (normal)
- 1-9 days (abnormal)

Normal blood loss: 30-80 cc, ¼ cup
Interplay of 4 major organs:

- Hypothalamus
- Anterior pituitary gland
- Ovaries
- Uterus

❖ **Hypothalamus**
- Produces GnRH or gonadotropin-releasing hormone to stimulate the anterior pituitary gland for the release of hormones

❖ **Anterior pituitary gland**
- Also termed as adenohypophysis
- Secretes Gonadotropins (Hormones that stimulate the Gonads or Ovaries)
- Stimulates the ovaries to secrete estrogen and progesterone

❖ **Gonadotropins**

❖ Follicle-stimulating Hormone (FSH)
- ✓ Hormone that is active early in the cycle and is responsible for maturation of the primordial follicle.

❖ Luteinizing Hormone (LH)
- Hormone most active at the midpoint of the cycle and is responsible for ovulation.

❖ **Ovary**
- Release of the ovum (egg cell)

❖ **Uterus**
- Stimulation from the hormones
- Develops stratum functionalis in preparation for pregnancy – sheds of as menstruation if ovum not fertilized

MENSTRUAL CYCLE

❖ **Proliferative Phase**
- Other terms: follicular phase/ estrogenic phase / post-menstrual phase
- 6 to 14 days
- First phase of menstrual cycle
- Always variable in length
- Immediately after the menstrual flow, the endometrium is very thin, approximately once cell layer in depth
- Endometrium begins to proliferate as the ovary begins to produce estrogen
- Levels of estrogen will increase in this phase

❖ **Graafian follicle**
- Most mature of all follicles
- With cavity and ovum ready to be extruded
- With clear fluid rich in estrogen
- Only 1 follicle matures per menstrual cycle

Primordial follicle
- Immature follicle

ESTROGEN: secretion effect in Uterus
- Thickens the uterine lining approximately eight-fold
  - ✓ From one millimeter to eight millimeters
- Peak of uterine lining coincides with ovulation
- Peaking of estrogen will signal luteinizing hormone surge (increase in blood levels of luteinizing hormone)

LH Surge
- Coincides with ovulation
- Extrusion of ovum from the Graafian follicle signals OVULATION

❖ **Luteal Phase**
- Other terms: Secretory Phase / Progestational Phase / Premenstrual Phase
- Second phase of menstrual cycle
- Remains constant: always 14 days in length
- Production of corpus luteum occurs
- Secretion of luteinizing hormone (LH) peaks in this phase
- Cavity is left inside the follicle
- Stimulates change in fluid in Graafian follicle (yellowish, milky white fluid high in progesterone)

PROGESTERONE EFFECT
- Maintains and organizes uterine lining
- If estrogen is present, the uterine lining would continue to thicken
- Under the influence of luteinizing hormone, the progesterone in the corpus luteum causes the glands of the uterine endometrium to become corkscrew or twisted in appearance.

- Depo Pro-Vera — this drug contains progesterone and used for dysfunctional uterine bleeding.

❖ **Ischemic Phase**
- If fertilization does not occur, the corpus luteum in the ovary begins to regress after 8 to 10 days.
- Production of progesterone and estrogen in this phase also decreases
- The decrease in these hormones makes the endometrium to degenerate
- Capillaries rupture with minute hemorrhages and the endometrium sloughs off

❖ **Menstrual Phase**
- Low levels of Estrogen & Progesterone
- Passage of menstrual flow

TERMINOLOGIES

❖ **Zygote**
- Product of fertilization
- < 2 weeks aog

❖ **Embryo**
- Intrauterine growth period from the time following implantation until organogenesis is complete
- 2 to < 8 weeks aog

❖ **Fetus**
- 8 weeks to birth

❖ **Viability**
- Fetus can be delivered and capable of living outside the utero
- Period of viability: 24 weeks and above (Pillitteri, 2010)

❖ **Gravida**
- number of pregnancies that reach the age of viability regardless of the outcome of the pregnancy.
  TPAL
  T- term (38- 42 weeks)
  P- preterm (<37 weeks)
  A- abortion (any terminated pregnancy)
  L- living children

❖ **Implantation**
- Contact between the growing structure and the uterine endometrium.
- Occurs approximately 8 to 10 days after fertilization.

❖ **Nulliparous**
- Had been pregnant before but has never given birth to a viable, or a live, infant

❖ **Nulligravid**
- Had never been pregnant

PREGNANCY

1. **Presumptive Signs**
   ❖ Least indicative of pregnancy
   ❖ Largely subjective as they are experienced by the woman but cannot be documented by the examiner

Examples:

❖ Breast changes
- Feeling of tenderness, fullness, or tingling, enlargement and darkening of areola

❖ Nausea and Vomiting
- Increase in human chorionic gonadotropin (HCG) levels

Interventions:
- Provide dry, unsalted Crackers
- Ice Chips
- Small, Frequent Feedings
- Less fatty foods in diet
- Encourage ambulation

❖ Amenorrhea
- Absence of menstruation because of hormonal changes

❖ Changes in Urination
- Urinary Frequency — 1st and 3rd Trimester

- Frequency of urination occurs in early pregnancy due to the pressure of the growing uterus on the anterior bladder.

❖ Fatigue
- General feeling of tiredness due to increased metabolic requirement's

❖ Quickening
- Fetal movement felt by the woman.
- Approximately 18 to 20 weeks.

❖ Skin changes
- Melasma /chloasma- mask of pregnancy
- Linea nigra – darkening of skin from symphysis pubis to umbilicus
- Striae gravidarum- silvery in color, due to distention of the collagen of the abdomen as uterus enlarges.

2. Probable Signs

❖ Can be documented by the examiner
❖ Still not confirmatory

Examples:

❖ Laboratory tests
- Test of blood serum/urine reveal the presence of hormone

❖ Positive Pregnancy Test
- Indicator: hCG levels
- This can be detected 10-14 days after the missed period.
- Peak level of hCG = 10 weeks Age of Gestation or 2 months

❖ Abdominal enlargement
- Symmetrical and globular

LANDMARKS	
12 WEEKS	Symphysis pubis
16 weeks	Halfway between umbilicus and symphysis pubis
20 weeks	Level of umbilicus

Increase of one centimeter in fundic height = additional 4 weeks in ages of gestation	
+ 1 cm above the umbilicus	24 weeks
+ 2 cm above the umbilicus	28 weeks
+3 cm above the umbilicus	32 weeks
+ 4 cm above the umbilicus	36 weeks (level of the xiphoid process)
One centimeter below the xiphoid process	40 weeks

❖ Chadwick's Sign
- Bluish-purple discoloration of the vagina due to increase in vascularity of the vagina

❖ Goodell's Sign
- Softening of the cervix to ready cervix for dilation and effacement

❖ Hegar's Sign
- Softening of the lower uterine segment

❖ Ballottement
- When lower uterine segment is tapped on a bimanual examination, the fetus can be felt to rise against abdominal wall.
- At 16th -20th week

❖ Braxton-Hicks Contraction
- Periodic uterine tightening occurs.
- Starts 28 weeks and above

3. Positive Signs

- Fetal Heart Tone
- Fetal movement felt by examiner
- Fetus seen through Ultrasound or X-ray

MATERNAL PHYSIOLOGY

Prenatal Clinic

1. Take Client's History
2. Physical Examination
   - Taking woman's blood pressure
     - ✓ Let the mother rest for approximately 15 minutes
     - ✓ Blood pressure reading varies with position
     - ✓ Sitting: BP is slightly higher (highest reading of the three positions)
     - ✓ Supine: Intermediate reading
     - ✓ Left Lateral: Lowest reading among the three positions
   - Abdominal Assessment
     - ✓ Place the woman in supine position with both legs flexed.
     - ✓ Inspection: Look for presence of striae; linea nigra
     - ✓ Take the client's fundic height
       - Place at tip of symphysis pubis up to level of fundus and note the measurement.
       - Use centimeter scale of tape measurement

Perform Leopold's Maneuver

Purpose:

- To determine fetal presentation and position

Let patient void before performing Leopold's Maneuver	Doing so promotes comfort and allows for more productive palpation because fetal contour will not be obscured by a distended bladder
Position the woman supine with knees slightly flexed. Place a small pillow or rolled towel under one side	Flexing the knees relaxes the abdominal muscles. Using a pillow or towel tilts the uterus off the vena cava , thus preventing supine hypotension syndrome
Wash your hands using WARM water	Hand washing prevents the spread of possible infection. Using warm water aids in client comfort and prevents tightening of abdominal muscles
In the first three maneuvers, nurse faces the head part of the bed. However, during the last maneuver the nurse will be facing the foot part of the bed.	

❖ **Leopold's Maneuver 1**

- Determines whether fetal presentation is cephalic or breech.
- Palpates uterine fundus

Important Concepts:

- Palpate the superior surface of the fundus and determine the consistency, shape and mobility.
  - ✓ Head: more firm than breech; round and had moves independently of the body.
  - ✓ Breech: less-well defined; moves only in conjunction with the body.
- LM 1 determines the fetal presentation.
  - ✓ Fetal presentation refers to the body part that will first contact the cervix or be born first.
  - ✓ Types of Presentation: Cephalic, breech, shoulder

❖ **Leopold's Maneuver 2**

- Locates the fetal back
- Fetal back is characterized by smooth, hard, resistant surface.
- However, if the assessment findings reveal several angular nodulations, the areas palpated may be part of the knees and elbows of the fetus

Important concept:

- Fetal back= where fetal heart tone is most audible

❖ **Leopold's Maneuver 3**

- Determines the part of the fetus at the inlet and its mobility.
- Determines if the presenting part is engaged or not engaged.
- If head is not engaged: the presenting part moves upward or either sideward
- If head is engaged: head is firmly settled into the pelvis

❖ **Leopold's Maneuver 4**

- Determines fetal attitude and degree of fetal extensions into the pelvis.
- It should be done only if the fetus is in a cephalic presentation.
- Information about the infant's anteroposterior position may also be gained from this final maneuver

Fetal attitude

- This is the degree of flexion of the baby in utero

TYPES OF ATTITUDE	
Occiput/Vertex (Full flexion)	• The head is sharply flexed, making the parietal bones, or the space between the fontanels presenting part • Present the suboccipito-bregmatic (smallest) diameter
Sinciput (military)	• Fetus is not as well flexed • Presents occipitofrontal diameter to inlet
Brow (Partial extension)	• From this position, extreme edema and distortion of the face may occur
Face (Poor flexion)	• Widest diameter (occipitomental) is the presenting part. • As a rule, a fetus cannot enter the pelvis in this presentation

PRENATAL ASSESSMENT/ ANTENATAL VISITS

In the ideal setting:

At (0 - 28) Age of Gestation

- Ask client to come back every 4 weeks

At (28 - 36) Age of Gestation

- Ask client to come back every 2 weeks

At (36) weeks onwards

- Ask client to come back every week

PHYSIOLOGICAL CHANGES DURING PREGNANCY

1. Cardiovascular System
   - The heart is displaced upward, to the left, and forward.
   - As the uterus enlarges, pressure of blood vessels increases and slows the circulation. It leads to edema and varicosities of the legs, vulva and rectum
   - The pressure of the enlarged uterus on the cava causes supine hypotensive syndrome during the second trimester (when the woman lies supine).
   - Position of Choice: Left lateral/Sim's position (so as not to impede the vena cava)
   - Cardiac output increases significantly by 25% to 50%
   - Heart rate increases 10 beats per minute.
2. Hematologic system
   - Presence of hemodilution in response to increase in plasma volume during pregnancy
   - Physiologic anemia occurs during pregnancy.

   Management:
   - Advise mother about the increase in iron requirements
   - Take iron supplements
   - Increase intake of iron-rich foods
3. Respiratory system
   - Shortness of breath – due to uterine enlargement
   - Total oxygen consumption increased by as much as 20%
   - Total volume is increased up to 40 %
   - Clients tends to hyperventilate resulting to respiratory alkalosis.

   Manifestations of respiratory alkalosis:
   - Tingling sensation on the lower ends of extremities
   - Light-headedness

   Nursing managements
   - Breathe through a paper bag or through cupped hands.

4. Gastrointestinal Tract
   - ❖ Pica
     - Medical disorder characterized by an appetite for substances largely non-nutritive
     - Inedible (metal, clay, coal, sand, dirt, soil, chalk, pens, and pencils)
     - The underlying cause may be attributed to hyper salivation
     - if not checked, this causes vomiting

- ❖ Epulis
  - Swelling of the gums causing gingival bleeding
  - Attributed to the increased estrogen levels.

  Management
    - Use soft-bristled toothbrush
    - Avoid using strong mouthwash.
- ❖ Ptyalism
  - May be due to increase levels of estrogen
  - Management: provide hard candies
- ❖ Heartburn
  - Because of the rapid increase in the size of uterus, it tends to push the stomach and intestines toward the back and sides of the abdomen
  - The pressure applied on the stomach may slow the peristalsis and emptying of the stomach, leading to heartburn

  Nursing management
    - Do not assume supine position after eating
    - Gradual ambulation
    - Small frequent feeding

5. Renal system

   Changes result in the following:
   - Effects of high estrogen and progesterone levels
   - Compression of the bladder and ureters by the growing uterus resulting to increase urinary frequency
   - There is relaxation of renal pelvis and the ureter leading to urine stagnation. Because of this, patient is prone to urinary tract infection (UTI)
6. Endocrine system
   - Woman is at greatest Risk for Hyperthyroidism
   - Patient may die when in labor with hyperthyroidism
   - Thyroid Storm leads to arrhythmia, which could lead to death
   - Carefully monitor the client about the presence of signs and symptoms that may signal hyperthyroidism
7. Musculoskeletal System
   - ❖ Placenta can produce the hormone, relaxin
     - Relaxes pelvic joints
     - Therefore, the pelvic is more movable
   - ❖ Diastasis Recti
     - Separation of rectus abdominis muscle
     - Only fascia remains in between
     - This is a normal physiological response of the body
     - Rectus abdominis muscle goes back after pregnancy
   - ❖ Physiologic Lordosis
     - Also known as the Pride of Pregnancy
     - Increased outward curvature
     - Presence of back pain

     Nursing Management
       - Do Pelvic Rocking
       - Place direct pressure on lumbar area
       - Prevent supine position (increases pressure on the spine)
       - No analgesic

FREQUENT USED DRUGS THAT SHOULD NOT BE TAKEN DURING PREGNANCY

NSAIDS (Indomethacin)

- ❖ Not advisable
- ❖ Causes premature closure of the Ductus Arteriosus
- ❖ No supply to the lower half of the body of the fetus
- ❖ This drug also causes decrease urine output resulting in oligohydramnios.
- ❖ In the neonate born after prenatal indomethacin exposure, reported complications have included:

- Pulmonary hypertension
- Necrotizing enterocolitis
- Intracranial hemorrhage
- Cystic brain lesion
- Renal dysfunction

ASPIRIN

❖ May cause:
- Hemorrhage
- Premature closure of the ductus arteriosus
- Pulmonary hypertension
- Prolonged gestation and labor
- Intrauterine growth restriction
- Congenital salicylate intoxication

Important concept
- Use low-dose aspirin.
- Stop taking about four weeks prior to EDD.

Diagnostic Exams

1. Amniocentesis

❖ Withdrawal of amniotic fluid through the abdominal wall for analysis
❖ Best done at 14-16 weeks age of gestation or during 2nd trimester

Important considerations:
- Void before the procedure
  - ✓ Reduces bladder size and prevents accidental puncturing during the procedure
- Let the patient stay and observe foe 30 minutes after the procedure
  - ✓ Be certain that labor contraction are not beginning and fetal heart rate remains with in normal limits

❖ Normal amount amniotic fluid
  - 800-1200 ml
❖ Oligohydramnios - less than 500mL
❖ Hydramnios/polyhydramnios - more than 1200mL

Information obtained
❖ Color: clear to slightly yellowish

Important consideration:
- Strong yellow color: suggest blood incompatibility
- Green: meconium staining

❖ Fetal lung maturity
- Analyzed for lung surfactant phosphatidyl glycerol and desaturated phosphatidylcholine
- Lecithin: sphingomyelin (L:S) ratio
  - Lecithin: lung surfactant
  - Normal ratio is 2L:1S
- If there is anticipated premature delivery, amniocentesis is done to know if delivery is viable.

❖ Bilirubin determination
- Presence of bilirubin may be analyzed if a blood incompatibility is suspected
- If bilirubin is going to be analyzed the specimen must be free of blood or a false-positive reading will occur.

❖ Inborn errors of metabolism
- Amniocentesis call detect presence of cystinosis and maple syrup urine disease (MSUD)

*Maple syrup urine disease - an inherited disorder; unable to process amino acids properly
*Cystinosis - Cystine storage disease; accumulation of cystine within cells

2. Ultrasound

❖ Measures the response of sound waves against solid objects

Purposes
- To diagnose pregnancy.
- To establish sex of the fetus.
- To predict maturity of the fetus.
- To confirm the presence, size, and location of the placenta and amniotic fluid.

Types:

- ❖ Transabdominal Ultrasound
  - Ask the client to drink plenty of water 1 hour before procedure.
  - Full bladder will push uterus to pelvic cavity for better visualization at abdomen.
- ❖ Transvaginal Ultrasound
  - Ask client to void.

Ultrasound in the First Trimester

- ❖ Information obtained:
  - ✓ Confirmation of Pregnancy
    (+) cardiac movement
  - (+) yolk sac
  - (+) Fetal Heart Tone
  - ✓ Identification of Intrauterine Device (IUD) in Place
  - ✓ Identification of H-MOLE
  - ➢ Snow-storm appearance
  - ➢ There are specks of white in a dark background; these are vesicles filled with fluid

Ultrasound in the Second and Third Trimester

- Information obtained:
  - ✓ Location of Placenta
  - ✓ Growth of the fetus
  - ✓ Amount of Amniotic Fluid
  - ✓ Fetal Position and Fetal Presentation
  - ✓ Sex / Gender of the Baby
    - ➢ Determinable at sixteen (16) weeks of gestation
    - ➢ Ideal time is twenty-eight (28) weeks
  - ❖ Congenital / Chromosomal Problems
  - ➢ Determined by three-dimensional (3D) ultrasound

3. Biophysical score

- ❖ Combines five parameters which are as follows:
  - Fetal reactivity
  - Fetal breathing movement
  - Fetal tone
  - Amniotic fluid volume
  - Fetal heart activity
- ❖ May be done as often as daily during a high-risk pregnancy
- ❖ Fetal score of 8-10= fetus is doing well
- ❖ Fetal score of 6 = considered to be suspicious
- ❖ Fetal score of 4 = this shows a fetus in jeopardy

Instruments used:

- ❖ Sonogram
  - Criteria for score of 2

Fetal breathing	At least one episode of 30 second of sustained fetal breathing movements within 30 mins of observation
Fetal movement	At least three separate episodes of fetal limb or trunk movement within a 30 mins observation
Fetal tone	The fetus must extend and then flex the extremities or spine at least once in 30 min
Amniotic fluid	A pocket of amniotic fluid measuring more than 1 cm in vertical diameter must be present

- ❖ Non-stress Test

Criteria for a score of 2

- Fetal heart reactivity: two or more fetal heart rate accelerations of least 15 beats/min above baseline and of 15 seconds in duration with fetal movement over a 20-minute time period.

4. Non-Stress Test

- ❖ Measures the response of fetal heart rate in relation to fetal movements
- ❖ Uses Cardiotocograph (CTG) Tracing

- Non-invasive

Results:

Reactive (Normal): Two or more accelerations of fetal heart rate of 15 beats/min lasting 15 seconds or more following fetal movements in a 20-minute period (15 bpm for 15 seconds).

Non-reactive: No accelerations occur with the fetal movement.

Safety consideration: Woman should not lie supine to prevent supine hypotension syndrome.

5. Contraction Stress Test (CST)

- Measures response of fetal heart rate to uterine contractions
- Stimulation of contractions through: (1) Nipple stimulation or (2) Oxytocin Challenge
- Best done when the mother is at thirty-eight (38) weeks Age of Gestation
- Done when NST is NON-REACTIVE.

  Results:

  Negative (Normal): No late decelerations with contractions

  Positive (Abnormal): Late decelerations

  Safety consideration: Observe woman for 30 minutes to see that contractions are quiet and preterm labor does not begin.
- Nipple Stimulation
  - Explain procedure and Position the client comfortably
  - Rub nipples
  - Give pack / warm soaks for 10 minutes prior to stimulation to increase circulation / vascularity
  - Start 4 cycles per stimulation
  - Start with the first cycle. If after these and there are NO CONTRACTIONS, stop and rest for 2 to 4 minutes
  - Do the procedure up to 4 cycles
  - If no contractions after the Fourth cycle
    - ✓ Stop stimulation
    - ✓ Proceed with Oxytocin Challenge Test
- Oxytocin Challenge Test
  - Give diluted form of oxytocin at a titrating dose
  - Start 10-12 drops per minute to a maximum of 40 drops per minute
  - Wait for 2 Consecutive Uterine contractions
  - Stop Oxytocin Challenge Test if 2 uterine contractions are obtained
  - Now compare Uterine Contractions with Fetal Heart Tone

  Important Concepts
  - Note for timing of deceleration in relationship to contraction
    - ✓ Deceleration is seen after contraction
    - ✓ U-shaped deceleration
- Interventions for Late deceleration (Positive CST result)
  - Place client in the left lateral position.
  - Stop oxytocin immediately: no contractions wanted.
  - Give oxygen to the mother: rate is 8-10 liters per minute.
  - Hydrate with plain water.
  - If deceleration is > 10 minutes, Cesarean section may be necessary.

6. Chorionic villi sampling

- It is a diagnostic technique that involves the retrieval and analysis of chorionic villi from the growing placenta for chromosomes or DNA analysis
- Done at 8 to 10 weeks

Post procedure: Instruct to report chills or fever suggestive of infection or threated miscarriage.

7. Alpha-fetoprotein (AFP)

- Alpha-fetoprotein is a glycoprotein produced by the fetal liver that reaches a peak in maternal serum between the 13th and 32nd week of pregnancy,

Results:

- Elevated: Neural tube defect
- Decreased: Fetal Chromosomal Disorder (e.g. Down syndrome)

PSYCHOLOGICAL TASKS OF THE MOTHER

First Trimester
- ❖ Mother should accept that she is pregnant (though ambivalence may be present)
- ❖ Concern of the mother towards herself is greater than her concern towards the baby

Second Trimester
- Acceptance of the baby is the main task
- Concern towards the self is equal to concern for the baby

Third Trimester
- Acceptance of parenthood
- Concern for the self is less than concern for the baby

LABOR

Theories of Parturition

1. Fetal sign
   - The baby feels that it is already capable of living outside the utero
2. Oxytocin theory of parturition
   - Receptors for oxytocin in the uterus increase as term approaches.
3. Progesterone Withdrawal Theory
   - Level of progesterone assayed in preterm and term pregnancy
   - Preterm: Progesterone level is still high
   - Approaching Term: Level of progesterone decreases causing contraction of uterus
4. Prostaglandin Theory
   - Prostaglandin stimulates uterine contraction

FACTORS AFFECTING LABOR

1. **Pelvic Dimension**

Android Pelvis	Male pelvis. The pubic arch in this pelvis type forms an acute angle, making the lower dimensions of the pelvis extremely narrow.
Anthropoid Pelvis	"Ape-like" pelvis. The transverse diameter is narrow, and the anteroposterior diameter of the inlet is larger than normal.
Gynecoid Pelvis	"Normal" female pelvis. The inlet is well-rounded forward and backward Ideal for childbirth.
Platypelloid Pelvis	"Flattened" pelvis. The inlet is an oval, smoothly curved, but the anteroposterior diameter is shallow.

2. Fetal Dimensions

❖ **Fetal Size**
- Correlation of size of baby to pelvic size

Cephalopelvic Disproportion (CPD)
- Head of the baby is INCONGRUENT with the maternal pelvis.
- Size of the fetal head is greater than the maternal pelvis.

Important Concepts:
- Despite the presence of CPD, there is a trial of Labor and not an absolute Cesarean Section
- Number of Cesarean Section in hospitals should not be more than 20% of all deliveries

❖ **Fetal Attitude**
- This describes the degree of flexion a fetus assumes during labor or the relationship of the fetal parts to each other
- If in complete extension, labor may not progress since this does not allow an adequate fetal movement

❖ **Fetal Lie**
- The relationship between the long axis of the fetal body and the long axis of a woman's body.
- Types of fetal lie: Longitudinal, transverse, oblique
- If in a transverse lie, dilatation will not progress

❖ **Fetal Presentation**
- Denotes the body part that will first contact the cervix.
- This is determined by a combination of fetal lie and the degree of fetal flexion/fetal attitude

❖ **Fetal Position**
- It is the relationship of the presenting part to specific quadrant or a woman pelvis
- Examples: Right occipitoposterior (ROP), Left sacroanterior (LSA)

❖ **Fetal Station**
- Relationship of the presenting part to the level of ischial spines

Level of ischial spine	Station
3cm above ischial spine	-3 (floating)
2cm above ischial spine	-2
1cm above ischial spine	-1
At the ischial spine	0 (engaged)
1cm below ischial spine	-1
2cm below ischial spine	-2
3cm below ischial spine	-3 (crowning)

- Linea terminalis- divides the false from true pelvis
  - ✓ Above linea terminalis = false pelvis
    - Support uterus during the late months of pregnancy
    - Aids in directing the fetus into the pelvis for birth
  - ✓ Below the linea terminalis = true pelvis

3. Fetal diameters

❖ Suboccipitobregmatic diameter
- Narrowest/Smallest diameter
- Approximately 9.5 cm wide
- Measurement is from the inferior aspect of the center of the anterior fontanelle

❖ Occipitofrontal diameter
- Measurement is from the occipital prominence to the bridge of the nose.
- Approximately 11 cm wide

❖ Occipitomental diameter
- Widest/Largest anteroposterior diameter
- Approximately 13.5 cm wide
- Measurement is from the posterior fontanelle to the chain

4. Fetal Head

❖ Anterior fontanelle
- Diamond shape
- Closes at 12-18 months of age

❖ Posterior fontanelle
- Triangle shape
- Closes at 2-3 months of age

PRELIMINARY SIGNS OF LABOR

❖ Lightening
- Primigravida= 2 weeks prior to labor
- Multigravida= at time of labor

❖ Braxton-Hicks contractions
- Starting at 28 weeks AOG (or last week/ days before labor begins), Braxton Hicks contractions are strong

❖ Increase in level of activity
- Increase in activity is related to an increase in epinephrine release initiated by a decrease in progesterone produced by the placenta

❖ Slight loss of weight
- As progesterone level falls, body fluid is more easily excreted from the body
- This increase in urine production can lead to a weight loss between 1 and 3 pounds

- ❖ Ripening of the cervix
  - Internal sign seen only on pelvic examination
  - Goodell's sign = cervix feels softer than normal to palpation ("butter-soft")

Sign of True Labor

True Labor	False Labor
Start at lumbar or back	Confined to hypogastric area
Regular interval	Irregular interval
Progressive cervical dilation and effacement	No cervical dilation and effacement
Intensity is increasing	No change on intensity
Ambulation intensifies uterine contraction in true labor	Ambulation stop the contraction
Sedation has no effect	Sedation stop false labor

- ❖ **Uterine contraction**
  - The surest sign that labor has begun is productive uterine contractions.
- ❖ **Bloody show**
  - As the cervix soften and ripens, the mucus plug that filled the cervical canal during pregnancy (operculum) is expelled
- ❖ **Rupture of membranes**
  - a sudden gush or a scanty, slow seeping of clear fluid from the vagina
- ❖ **Cervical dilation**

STAGES OF LABOR

FIRST STAGE

- ❖ Starts from true contraction to full cervical dilatation (10cm)

PHASES (LAT)	
LATENT PHASES	• Begins at the onset of uterine contractions. • Contraction quality: Mild • Duration: 20 to 40 seconds, every 5 to 10 minutes • Cervical effacement occurs • Cervical dilation: 0 to 3 cm. • Nullipara: 6 hours • Multipara: 4.5 hours
ACTIVE PHASE	• Contraction quality: Moderate, stronger • Cervical dilation: 4 to 7 cm • Duration: 40 to 60 seconds, every 3 to 5 minutes
TRANSITION PHASE	• Contraction quality: Strongest • Cervical dilation: 8 to 10 cm • Duration: 60 to 90 seconds, every 2 to 3 minutes

NITRAZINE TEST

- ❖ Used to determine whether fluid is amniotic or not
- ❖ Nitrazine paper is in contact with the vaginal secretions.
- ❖ Results:
  - Blue (alkaline): Amniotic fluid
  - Red (acidic): Urine

Important Concepts:

- If membrane has ruptured for greater than 24 hours and still no birthing occurred, infection will most likely occur and immediate Cesarean Section is needed.

SECOND STAGE

- ❖ Starts from full cervical dilatation (10 cm) up to delivery of the fetus
- ❖ Primigravida: 1-4 hours
- ❖ Mutigravida: 20-45 minutes

Important Concepts:

- Do not encourage pushing if cervix is not fully dilated and if there is no presence of contraction.

- Main purpose of pushing: to shorten the Second Stage of Labor
- Ask client to pant-breathe if there is an urge to push

Mechanisms of Labor (ED FIRE ERE)

- Engagement
- Descent
- Flexion
- Internal Rotation
- Extension
- External Rotation (Restitution)
- Expulsion

Essential Intrapartum and Newborn Care (EINC)

Properly timed cord clamping (when pulsation stops or after 2 minutes)
Immediate drying of baby (prevent hypothermia)
Non-separation of mother and baby
Early breastfeeding (within 60 minutes postpartum)

THIRD STAGE

- ❖ Starts from the delivery of the baby to the delivery of placenta
- ❖ Lasts for five (5) to ten (10) minutes
- ❖ Maximum waiting time is thirty (30) minutes
- ❖ Beyond 30 minutes is already abnormal

Signs of Placental Expulsion

- Calkin's Sign (Uterus becomes firm and globular)
- Lengthening of the Cord
- Sudden Gush of Blood
- Rising of the Uterus into the abdomen
  - ✓ Up to the level of the umbilicus 1cm after the delivery of the placenta

Two Types of Placental Expulsion

❖ Schultze Presentation
- Shiny and glistening from the fetal membranes
- Placenta separates first at its center and last at its edges
- Less chances of bleeding

❖ Duncan Presentation
- Raw, red, and irregular
- Placenta separates first at its edges
- Associated with more bleeding and hemorrhage

Nursing Responsibilities:
- Assess the appearance and completeness of the cotyledons (16-20). If not complete, reclean the uterus to prevent bleeding.
- Measure the placental diameter.
- Weigh the placenta.
- Measure the umbilical cord.
- Expect presence of blood vessels.
  - ✓ 2 arteries and 1 vein (AVA)

Drugs for Third Stage of Labor

- **Ergotrates**
  - ✓ Includes Methergine I.V. or I. M.
  - ✓ Best given immediately after delivery of placenta
  - ✓ Massive contraction of the uterus traps placenta inside, therefore, do not give before placental expulsion
- **Oxytocin**
  - ✓ Give prior to expulsion of placenta to add to contraction
  - ✓ Given at minimal amounts
  - ✓ Normally at a rate of eleven to twelve drops per minute (11-12 gtts/min)
  - ✓ After the delivery of placenta, give oxytocin at greater amounts

Important Concept
- In the Third stage of Labor, priority is minimizing risk for hemorrhage.

FOURTH STAGE

- ❖ First 1-4 hours after delivery of the placenta
- ❖ Priority: Achieve homeostasis and minimize bleeding risks.
- ❖ All water retained previously will be reabsorbed into the circulation leading to:
  - Increased in Cardiac Output
  - Increase in Oxygen Consumption
  - Thus, most detrimental or difficult stage of labor in gravidocardiac patients.

Postpartum Assessment (BUBBLE-HE)
Breast
Uterus
Bladder
Bowels
Lochia
Homan's sign: pain upon dorsiflexion (possible deep vein thrombosis)
Episiotomy

HEMORRHAGIC DISORDERS IN PREGNANCY

FIRST TRIMESTER

1. Abortion/Miscarriage

- ❖ Any interruption of a pregnancy before a fetus is viable.
- ❖ Viable Fetus - fetus of more than 24 weeks of gestation or one that weighs at least 500 g.

Two types of Abortion

- ❖ **Spontaneous Abortion**
  - Most common cause of spontaneous abortion is chromosomal in nature.
  - Embryo is defective.

TYPES OF SPONTANEOUS ABORTION	
Threatened Abortion	Presence of vaginal bleeding; no cervical dilation and effacement
Inevitable/imminent abortion	Presence of vaginal bleeding; cervical effacement and dilation
Complete abortion	All products of conception have passed in the vagina
Incomplete abortion	Some products of conception have passed the vagina
Habitual abortion	Occurrence of three or more pregnancies that end in miscarriage of the fetus

- ❖ **Induced abortion**
  - Also termed as 'elective termination of pregnancy"
  - A procedure performed to end a pregnancy before fetal viability

Types of Induced abortion

- Therapeutic abortion
- Illegal

2. Ectopic Pregnancy

- ❖ Implantation occurs outside the uterine cavity
- ❖ Most common site: **Ampulla of Fallopian tube**
- ❖ Most common predisposing factor: Pelvic Inflammatory Disease (PID)
- ❖ Other factors include:
  - Previous Surgery
  - Presence of Intrauterine Device
  - History of previous ectopic pregnancies

Triad Manifestations

- Amenorrhea
- Vaginal bleeding or Spotting
- Unilateral lower abdominal pain/tenderness

Clinical Manifestations

- Severe, sharp knife-like a pain; Unilateral pain

- Abdominal rigidity
  - ✓ Bleeding inside
  - ✓ Hemoperitoneum
  - ✓ Peritonitis
- Positive (+) for Cullen's Sign
  - ✓ Ecchymosis around due to hemoperitoneum
- Decreased Blood Pressure
- Excruciating pain when the moved (wriggling tenderness)

Diagnosis for Ectopic Pregnancy

- Culdocentesis
  - ✓ Refers to the extraction of fluid from the recto-uterine pouch posterior to the vagina through a needle.

Medical Management

- ❖ Methotrexate
  - o A sclerosing agent: Shrink and absorb products of conception.
  - o Chemotherapeutic agent attacks and destroys fast-growing cells.
  - o Given I.M. to the mother if ectopic pregnancy is less than 3 cm

Surgical Management

- ❖ Salpingotomy
  - o Limited to unruptured (<3 cm)
  - o Left to heal
- ❖ Salpingectomy
  - o For a ruptured ectopic pregnancy

SECOND TRIMESTER

3. Hydatidiform Mole

- ❖ Also termed as H-Mole/ Gestational Trophoblastic Disease / Molar Pregnancy villi
- ❖ Abnormal proliferation and then degeneration of the trophoblastic villi
- ❖ Vesicle-like structure is formed instead of placenta

Cause

- Unknown

Predisposing Factors

- Low socio-economic status
- Low protein intake
- Age
  - ✓ Less than 18
  - ✓ Greater than 35

Manifestations of H-Mole

- Excessive vomiting (because of high levels of HCG)
- Bleeding: pinkish vaginal discharge
- FHT: absent
- Rapid abdominal enlargement
- pregnancy induced hypertension
- Occurs earlier because Human Chorionic Gonadotropin is very high in H-Mole

Management

- ❖ Dilation and curettage
  - To expel H-Mole components
  - Sinuses open
  - ✓ Early dissemination of tissues or metastasis to lungs, brain
- ❖ Monitor HCG Titer
  - Normal: 100,000 U to 400,000 U
  - H-Mole: 1,000,000 U to 2,000,000 U
  - Close follow up is mandatory
  - Monitor level of beta–HCG level every 2 weeks until normal
  - When normal continue monitoring levels of beta –HCG every 2-4 weeks for duration of 1 year
  - No pregnancy for 1 year

4. Premature Cervical Dilation

- ❖ Previously termed as incompetent cervix

- ❖ Refers to a cervix that dilates prematurely and therefore cannot hold a fetus until term
- ❖ Most common cause of habitual abortion
- ❖ Habitual abortion: 3 or more consecutive abortions
- ❖ First symptoms may either be a "show " (pink-stained vaginal discharge) or increased pelvic pressure

Predisposing Factors

- Developmental Factors
  - ✓ Defective collagen formation in the cervix
- Repeated Trauma to the cervix
- Repeated Dilatation and Curettage

Management

- **McDonald's Procedure**
  - ✓ Purse string suture applied to cervical opening
  - ✓ Purpose is to make the cervix tense
  - ✓ Done if fetus is less than 12 weeks old
  - ✓ Mother is allowed to deliver by normal spontaneous delivery if pregnancy persists
  - ✓ Nylon sutures are placed horizontally and vertically across the cervix and pulled tight to reduce the cervical canal to a few millimeters in diameter.
  - ✓ Sutures are removed 37 to 38 weeks of pregnancy.
- **Shirodkar / Barter Procedure**
  - ✓ Sterile tape is threaded in a purse-string manner under the submucous layer of the cervix and sutured in place. to achieve a closed cervix
  - ✓ Cervix is closed but menstrual blood is allowed to come out
  - ✓ Sutures are placed by a transabdominal route.
  - ✓ Delivery is via Cesarean Section

Nursing Responsibilities

- Bed rest
- Position of choice: Modified Trendelenberg
  - Lumbar area elevated; feet lowered
- Coitus is temporarily restricted
- Tocolytic therapy (stops uterine contractions): Ritodrin (Yutopar) & Terbutaline (Brethine)

THIRD TRIMESTER

5. Placenta Previa

- ❖ Placenta is implanted abnormally in the uterus.
- ❖ Most common cause of painless bleeding in the third trimester of pregnancy

Predisposing factors

- Multiparity
- Tumor or mass in the uterus
  - ✓ Previous Cesarean Section
  - ✓ Scar is avoided by the placenta
- Developmental Anomaly in the Uterus (Bicornuate Uterus)

	TYPES
Low Lying	• Implantation in the lower rather than in the upper position of the uterus
Marginal	• The placenta extends to the edge of the cervix but does not cover it
Partial	• Implantation that occludes a portion of the cervical os
Total	• Also called Placenta Previa Totalis • Implantation that totally obstructs the cervical os

Clinical Assessment

- Bleeding that occurs is usually abrupt, painless & bright red
- Uterine consistency; soft

Nursing Management

- Place the woman on bed rest
- Position: Side lying
- Assess the following:
  - ✓ Duration of pregnancy
  - ✓ Time the bleeding began
  - ✓ Woman's estimation of the amount of blood (number of cups/tablespoons)
  - ✓ Color of blood
- Never attempt a pelvic or rectal examination with painless bleeding late in pregnancy
- Obtain baseline vital signs
- Continue to assess blood pressure every 5 to 15 minutes
- IV therapy
- Monitor urine output every hour
- Attach external monitoring equipment to record fetal heart sounds and uterine contractions
- Have oxygen equipment available in case of fetal distress
- Typically, a woman remains in the hospital on bed rest for close observation for 48 hours
- If the bleeding stops, she can be sent home with a referral for bed rest and home care

6. Abruptio Placenta

- ❖ Early separation of the placenta prior to delivery of the fetus
- ❖ Abnormal separation occurs on the second stage of labor

Cause

- Unknown

Predisposing Factors

- Cocaine
- Cigarette smoking
- High parity
- Advanced Maternal Age
- Short umbilical cord
- Chronic hypertensive disease
- Pregnancy-induced hypertension

Clinical Assessment

- Sharp, stabbing pain in uterine fundus
- Heavy bleeding but may not be readily apparent
- Rigidity of the uterus
- Fetal heart tone may not be heard

Separation in Abruptio Placentae may be:

- ❖ Peripheral Separation
  - Better and safer
  - Blood goes out of the introitus
  - Tachycardia
  - Hypotensive
  - Increases degree of separation
  - Increases degree of fluctuation of vital signs
- ❖ Central Separation
  - More dangerous
  - **Couvelaire** Uterus – Blood does not seep off through the introitus but enters myometrium, leaving the uterus bluish or copper-colored
  - Results to difficulty of contraction of the Myometrium
  - Uterine Atony – uterus remains soft and boggy

- Because of the presence of uterine atony, Hysterectomy will be done

Management

- Fluid replacement
- Provide oxygenation to limit fetal anoxia
- Monitor fetal heart sounds externally
- Record maternal vital signs every 5 to 15 minutes for baseline data
- Position: Lateral; Avoid supine position to prevent pressure on the vena cava
- Do not perform any abdominal, vaginal or pelvic examination
- If there is presence of fetal distress, outright delivery may be necessary

PRETERM RUPTURE OF MEMBRANES (PROM)

- ❖ Rupture of fetal membranes with loss of amniotic fluid during pregnancy before 37 weeks

Cause

- Unknown
- Chorioamnionitis (Infection of the membranes)

Complications

- ❖ Infection
  - Gold standard is 24 hours
  - If more than twenty-four hours, there will be sepsis
- ❖ Cord Prolapse
  - Extension of the cord out of the uterine cavity into vagina
  - This condition could interfere with fetal circulation

Management

- Bed rest
- Corticosteroid such as Betamethasone to hasten fetal lung maturity
- Do not reinsert the cord
- Moisten gauze with NSS and cover the cord
- Provide Oxygenation
- Get fetal heart tone
- Outright delivery may be necessary if there is presence of maternal infection, fetal distress and labor

PREMATURE LABOR

- ❖ Labor that occurs before the end of week 37 of gestation
- ❖ Responsible for almost two-thirds of all infant deaths in the neonatal period
- ❖ Preventable

Causes

- Unknown
- Dehydration
- Urinary Tract Infection
- Periodontal Disease
- Chorioamnionitis

Risk factors

- African-American women
- Adolescents
- Women who receive inadequate prenatal care
- Women who are exposed to stressful work

Management

- Bed rest (to relieve the pressure of the fetus on the cervix)
- Intravenous therapy (to keep the woman well hydrated because hydration may stop contractions)
- Tocolytic agents are given to halt labor
- Coitus restriction

POST TERM PREGNANCY

- ❖ Pregnancy that exceeds 42 weeks long
- ❖ Also termed as Postmature/Postdate
- ❖ Post term pregnancy occurs in 3% to 12% of all pregnancies

Related Causes

- High dose of salicylates
  - ✓ Salicylate interferes with the synthesis of the prostaglandins, which may be responsible for the initiation of labor
- Myometrial Quiescence
  - ✓ Uterus that does not respond to normal labor stimulation

Complications

- Meconium aspiration
- Fetal Macrosomia

Management

- Prostaglandin gel or Misoprostol may be applied to the cervix to initiate ripening
- Oxytocin administration to begin labor
- Monitor fetal heart rate closely during labor

PRECIPITATE LABOR

- ❖ Occur when uterine contractions are so strong that a woman gives birth with only a few, rapidly occurring contractions
- ❖ Labor that lasts for less than 3 hours

Precipitate dilatation

- ❖ Cervical dilatation that occurs at a rate of 5cm or more per hour in a primipara or 10cm or more per hour in a multipara

Dangers of Precipitate Labor

- Non-institutionalized delivery
  - ✓ Exposes baby to sepsis
- Exposes mother to laceration
  - ✓ Head of baby thumps to pelvis resulting to hemorrhage
- Intracerebral hemorrhage of the head of baby as the baby's head bumps the mother's bony prominences

BREECH DELIVERY

- ❖ Either the buttocks or the feet are the first body parts that will contact the cervix
- ❖ Occur in approximately 3% of births and are affected by the fetal attitude

Types:

1. Complete
   - Baby assumes a position similar to sitting
   - The fetus has thighs tightly flexed on the abdomen; both the buttocks and the tightly flexed feet present to the cervix
2. Frank
   - Attitude is moderate because the hips are flexed but the knees are extended to rest on the chest. The buttocks alone present to the cervix
3. Footling
   - Neither the thighs nor lower legs are flexed
   - Simple Footling
   - Double Footling

Problems Associated with Breech Delivery

- Cord Prolapse
- Head Entrapment
- Shoulder dystocia

Key Concept

- In Breech delivery, it is normal to see Meconium Staining

MULTIPLE PREGNANCIES

- ❖ Multiple Gestation: a complication of pregnancy because a woman's body must adjust to the effects of more than one fetus
- ❖ Occurs in 2% to 3% of all births

2 Types

- Monozygotic
- Dizygotic

Monozygotic	• Identical twins • 1 ovum and 1 sperm • One placenta, one chorion, two amnions and two umbilical cords • Always of the same sex
Dizygotic	• Fraternal twins • 2 ova and 2 sperms • 2 placentas, 2 umbilical cords, • 2 amnions, 2 chorions • May be of the same or different sex

Clinical Assessment

- Uterus begins to increase in size at a rate faster than usual
- Alpha-fetoprotein levels are elevated
- At the time of quickening, woman may report flurries of action at different portions of her abdomen rather than at one consistent spot.
- Ultrasound can reveal multiple gestation sacs early in pregnancy

Complications

- PIH
- Hydramnios
- Placenta previa
- Preterm labor
- Anemia
- Postpartum bleeding
- Low-birth weight babies
- Higher risk of congenital anomalies

PREGNANCY INDUCED HYPERTENSION (P.I.H.)

- ❖ It is a condition in which vasospasm occurs during pregnancy in both small and large arteries
- ❖ Unknown cause

Classic Signs of PIH

- Hypertension after 20th week AOG
- Proteinuria: (>250 mg/dl)
- Edema
- Vision changes

General Classifications

- Gestational Hypertension
- Mild Pre-eclampsia
- Severe Pre-eclampsia
- Eclampsia

1. Gestational Hypertension

- Elevated blood pressure (140/90 mm Hg)
- No proteinuria
- No edema
- Blood pressure returns to normal after birth

2. Mild Pre-eclampsia

- Proteinuria (1+ or 2+)

- BP (140/90 mm Hg)
- Diastolic blood pressure is extremely important to document because this pressure best indicates the degree of peripheral arterial spasm
- Systolic BP greater than 30 mm Hg above pre-pregnancy values
- Diastolic BP greater than 15 mm Hg above pre-pregnancy values
- Weight gain over 2 lbs. per week in 2nd trimester
- Weight gain of 1 lb. per week in 3rd trimester

Management:

- Bed rest to conserve oxygen
  - ✓ Due to constriction of vessels
- Normal salt intake (2-3 grams/day)
  - Do not restrict/limit salt intake as it will activate the RAA system, which will further increase blood pressure.
- Closer follow-up: weekly check-up

3. Severe Pre-Eclampsia

- 160/110 mm Hg
- Marked proteinuria (3+ or 4+)
- Protein of more than 5 g in a 24-hour sample
- Extensive edema
- Elevated serum creatinine more than 1.2 mg/dL
- Epigastric pain
- Hepatic dysfunction
- Thrombocytopenia

Management

- Prevention of seizures
- Give Magnesium Sulfate
  - ✓ Can cause a marked decrease in BP
  - ✓ Check deep tendon reflex
  - ✓ Check respiratory rate as this causes respiratory depression
  - ✓ Check urine output

  Antidote: Calcium gluconate

4. Eclampsia

- Most severe classification of PIH
- Grand-mal seizure or coma occurs
- Accompanied by signs and symptoms of pre-eclampsia

Management

- Give additional medications aside from Mg SO_4
  - ✓ Diuretics: Furosemide
  - ✓ Digitalis (Digoxin)- to promote contractility of heart; check apical pulse
    - ➢ Administer K+ as this drug causes a decrease in the serum levels of K+
  - ✓ Barbiturates: these are fast acting sedatives; arrests seizure
  - ✓ Hydralazine: to treat hypertension

Other Nursing Responsibilities

- Provide dim light room
- Limit visitors
- Put side rails up
- Suction machine at bedside
- Don't put anything in mouth if there is seizure
- Open collar
- Turn patient to side to promote drainage of saliva
- Promote safety

HELLP SYNDROME

- ❖ Hemolysis, Elevated Liver enzymes, Low Platelet (HELLP)
- ❖ Occurs in 4% to 12% of patients with PIH
- ❖ Maternal mortality rate of 24%
- ❖ Infant mortality rate of 35%

Cause:

- Unknown
- Presence of antiphospholipid antibodies

Manifestations

- Proteinuria
- Edema
- Increased blood pressure
- Nausea
- Epigastric pain
- General malaise
- Right upper quadrant tenderness because of liver inflammation

Laboratory studies

- Transfusion of fresh-frozen plasma or platelets
- Correct hypoglycemia through Intravenous glucose infusion
- Epidural anesthesia may not be possible because of low platelet count and high possibility of bleeding at the epidural site

GESTATIONAL DIABETES MELLITUS

- ❖ A condition of abnormal glucose metabolism that arises during pregnancy

Cause: unknown; Human Placental Lactogen (HPL)

Risk factors:

- Obesity
- Age over 25 years
- Race
- History of large babies (10 lbs. or more)
- History of unexplained fetal or perinatal loss
- History of congenital anomalies in previous pregnancies
- Family history of diabetes

Diagnosis

50-g Oral Glucose Tolerance Test (OGTT)

- Done at week 24 to 28 of pregnancy
- Venous blood sample will be taken for glucose determination 60 minutes later
- If the serum glucose level at 1 hour is more than 140 mg/dl, woman is scheduled for a 100-g 3 hour fasting glucose tolerance test
- If two (2) of the four blood samples collected for this test are abnormal or the fasting value is above 95 mg/dl, this confirms the diagnosis

Management

- DIET: Maintain daily calorie intake of 1,800 to 2,400 kcal/day
- Refrain from eating simple sugars and saturated fats. Instead, consume complex carbohydrates
- Exercise: Appropriate for Age of Gestation

Pharmacologic Therapy

- Insulin Therapy
- Oral Hypoglycemic agents are teratogenic

HEART DISEASE (GRAVIDOCARDIA)

Four Functional Classifications of Heart Disease

Class I
- Uncompromised
- Ordinary Physical activity causes no discomfort

Class II
- Slightly compromised
- Ordinary physical activity causes excessive fatigue, palpitation, and dyspnea or angina pain

Class III
- Markedly compromised
- During less than ordinary activity, woman experience, excessive fatigue, palpitations, dyspnea, or angina pain

Class IV
- Severely compromised
- Woman is unable to carry out any physical activity without experiencing discomfort

Important Concepts
- If you belong to Class I and Class II
  - ✓ you can go through normal pregnancy
- If you belong to Class III and Class IV
  - ✓ you cannot go through normal pregnancy
  - ✓ not a good candidate for pregnancy

VARIABILITY

- ❖ FHR Variability is one of the most reliable indicators of fetal well-being
- ❖ Periodic changes or fluctuations in FHR occur in response to contractions and fetal movement

Four Responses

1. Accelerations
   - Non-periodic accelerations are temporary normal increases in FHR caused by:
     - ✓ Fetal movement
     - ✓ Change in maternal position
     - ✓ Administration of an analgesic
2. Early Deceleration
   - Begins and ends simultaneously with uterine contractions
   - Due to fetal head compression
   - Early decelerations normally occur late in labor
   - If they occur early in labor, before the head has fully descended, the waveform change could be the result of cephalopelvic disproportion
3. Late Deceleration
   - Delayed until 30 to 40 seconds after the onset of a contraction and continue beyond the end of contraction
   - Has a late recovery
   - Uteroplacental Insufficiency is present

   Management
   - Stop or slow the oxytocin administration
   - Change the woman's position from supine to lateral (to relieve pressure on the vena cava)
   - Administer Intravenous fluids
   - Provide oxygen as prescribed
   - If late decelerations persist or becomes abnormal (either absent or deceased), prepare for possible prompt birth of the infant
4. Variable Deceleration
   - Has unpredictable occurrence
   - May be due to fetal cord compression

   Management
   - Change the woman's position from supine to lateral or trendelenburg to relieve pressure on the cord

- Amnioinfusion

PUERPERIUM

❖ This refers to the 6-week period after childbirth

Main priority: Achieve involution

**Involution is the return of reproductive organs to pre-pregnancy state (Normal: 1cm/fingerbreadth per day)

- Progressive: Production of milk for lactation, restoration of the normal menstrual cycle, and beginning of a parenting role

Rubin's Phases of Puerperium

1. Taking-in Phase
   - First phase
   - Time when the woman reviews her pregnancy and the labor and birth
   - Woman is largely passive, prefers to be taken care of or dependent for care for self and the newborn
   - Rejecting rooming-in is Normal
2. Taking-hold Phase
   - Woman begins to initiate action
   - Mother is now independent of self-care and newborn care
   - She prefers to get her own washcloth and to make her own decisions
   - Time of evidence of Postpartum psychosis
     ✓ Brief Psychotic episode lasts for 3 months
3. Letting-Go Phase
   - Woman finally redefines her new role
   - She gives up the fantasized image of her child and accepts the real one
   - She gives up her old role of being childless

LOCHIA

❖ Rubra
- Day 1 to day 3
- Bright red in color with only small particles of decidua and mucus

❖ Serosa
- Day 3 to day 10
- Pinkish or brownish in color
- Composed of blood, mucus, and invading leukocytes

❖ Alba
- Day 10 until 3rd week up to 6th week postpartum
- White in color

Important Concept
- After six weeks, there should be no more Lochia

Characteristics of Normal Lochia
- Normal Odor: Musty but not foul smelling
  ✓ Foul smell indicates infection
- Color
  ✓ Should not be yellowish/cloudy
  ✓ Yellowish color indicates infection
- Order of Appearance
  ✓ Should never be reversed
  ✓ Reversal in appearance indicates retained placental fragments
  ✓ Women who underwent Cesarean delivery will also experience lochia

LACTATION AMENORRHEA

3 Requirements:

❖ Exclusively breastfeeding/lactating
❖ No menstruation: some suppression of ovulation

- ❖ Within 6 months postpartum

Important Concepts

- If the mother is not breastfeeding, expect menstruation to return after 6 to 10 weeks
- If the mother is breastfeeding, it would take 6 months before menstruation returns
- After 3 to 4 weeks, coitus is allowable

POST-PARTUM PROBLEMS

1. Maternal Hemorrhage

- ❖ Early post-partum hemorrhage
  - Occurs within the first 24 hours after delivery
  - Most common cause: Uterine atony
  - Laceration is the second most common cause
  - Inherent clotting disorders occur:
    - ✓ Thrombocytopenia
    - ✓ Leucopenia
  - Late post-partum hemorrhage: occurs after first twenty-four hours of delivery
  - Common causes:
    - ✓ Primary cause (Retained Placental Fragment/s)
    - ✓ Secondary Cause (Hematoma)

2. Infection

- Endogenous infection
- Normal flora causes infection and may travel up to the uterus

Perineal Infection

- On site of episiotomy: Antibiotic therapy

Surgical Management

- Remove suture
- Drain pus
- Position in semi-fowler's position

ENDOMETRITIS

- ❖ Infection of the lining of the uterus
- ❖ Maternal fever >38℃
- ❖ Foul smelling vaginal discharge
- ❖ Uterine or abdominal tenderness

Management for Endometritis

- Antibiotics
- Position: Semi-fowler's position

Important Concept

- Endometritis is a prelude to thrombophlebitis

THROMBOPHLEBITIS

- Most common sites are the vessels of the lower extremities
- (+) for Homan's Sign
  - ✓ Upon lying supine with legs extended. Ask the patient to dorsiflex the foot
  - ✓ Stretching of the blood vessels causes pain on calf muscles (gastrocnemius muscle)

Management:

- ✓ Antibiotics
- ✓ Anticoagulant: Heparin