1. **Chapter 40 Obstetrics**

2. **The Prenatal Period**
   The prenatal period is the time from _______________ until delivery of the _______________.

3. **Terminology**
   - **Ovulation**: the release of an egg from the ovary.
   - **Uterus**: organ of pregnancy.
   - **Afterbirth**: placenta and membranes that are expelled from uterus after the birth of a child.
   - **Umbilical cord**: structure that connects fetus and _______________.
   - **Amniotic sac**: membranes that surround and protect the developing fetus.
   - **Amniotic fluid**: clear watery fluid that surrounds and protects the developing fetus.

4. **Anatomy**

5. **Physiologic Changes of Pregnancy**
   **Reproductive System**:
   - **Uterus**: ___________________________ in size.
   - **Vascular system**.
   - **Formation of mucous plug in ___________________________**.
   - **Estrogen causes vaginal mucosa to thicken**.
   - **________________________ enlargement**.

6. **Physiologic Changes of Pregnancy**
   **Respiratory System**:
   - **Progesterone causes a ___________________________ in airway resistance**.
   - **Increase in oxygen consumption**.
   - **Increase in ___________________________ volume**.
   - **Slight increase in respiratory rate**.

7. **Physiologic Changes of Pregnancy**
   **Cardiovascular System**:
   - **Cardiac output**: ___________________________.
   - **Blood volume increases**.
   - **Supine ___________________________**.
   **Gastrointestinal System**:
   - **________________________ levels**.
   - **Peristalsis (the rhythmic contraction of smooth muscles to propel contents) is slowed**.

8. **Physiologic Changes of Pregnancy**
   **Urinary System**:
   - **Urinary ___________________________ is common**.
   **Musculoskeletal System**:
   - **Loosened ___________________________ joints**.
Fetal Circulation
- During pregnancy, the fetus is totally dependant on the mother for circulation of oxygenated blood
- Fetus receives ______________________ from the placenta
- Fetal circulation changes immediately at ______________________

Fetal Development Milestones
- 4 weeks: fetal heart begins to beat
- 8 weeks: all body ________________________ and structures are formed
- 8-12 weeks: heart tones audible to Doppler, ________________________ produced
- 16 weeks: ________________________ can be determined, meconium produced
- 20 weeks, heart tones audible with ________________________, movement felt, hair is present

Fetal Development Milestones
- 24 weeks: increased activity, ________________________ movement
- 28 weeks: ________________________ surfactant formed, eyes open and close
- 32 weeks: ________________________ fully developed, fat deposited, nails formed
- 38-40 weeks: fully formed

Other Terminology
- ________________________ : time interval prior to delivery
- Postpartum: time interval after delivery
- ________________________ : time interval prior to birth, same as antepartum
- Natal: relating to birth or date of birth
- Gravidity: number of times a woman has been pregnant
- ________________________ : number of pregnancies carried to full term
- ________________________ : pregnant for first time

Other Terminology
- Primapara: a woman who has given birth to her first child
- ________________________ : a woman who has been pregnant more than once
- Nulligravida: a woman who has not been pregnant
- ________________________ : a woman who has delivered more than one baby

Other Terminology
- ________________________ : a woman who has yet to deliver her first
Grand multiparity: a woman who has delivered at least seven babies.

16 General Assessment of the Obstetric Patient
History—SAMPLE
- Estimated due date
- Previous:
- Preexisting Medical Conditions:
  - __________________________, heart disease, hypertension, seizure
- Pain
- __________________________ Bleeding
- Labor

17 Physical Exam of the Obstetric Patient
- Assess __________________________ height to determine gestation.

18 General Assessment of the Obstetric Patient
- Do not perform an __________________________ vaginal examination in the field.
- Always remember that you are caring for __________________________ patients, the mother and the fetus.
- ABC, monitor for __________________________ .

19 Complications of Pregnancy

20 Trauma in Pregnancy
- __________________________ blood loss possible
- Mother’s natural response it to cut blood flow off to fetus to protect it’s own body
- S/S of shock is delayed due to increase in blood

- Transport all pregnant trauma patients at ___________ weeks or more gestation

21 Trauma Management
- Apply __________________________ for cervical stabilization and immobilize on a long backboard.
- Administer high-flow oxygen concentration.
- Initiate two large-bore IVs per protocol.
- Place patient __________________________ to the left to minimize supine hypotension.
- Reassess patient.
- Monitor the fetus.

22 Medical Conditions
- Any pregnant patient with __________________________ pain should be evaluated by a physician.
Excessive vaginal bleeding is ________________________________ normal
Pregnancy can worsen or even cause other ____________________________ conditions

23 Causes of Bleeding During Pregnancy
• Ectopic pregnancy
• Placenta ________________________________ placentae

24 Abortion
• Termination of pregnancy before the ________________________________ week of gestation.
• Signs and symptoms include cramping, abdominal pain, ____________________________, and vaginal bleeding.
• Treat for ________________________________.
• Provide emotional support.

25 Ectopic Pregnancy
• Assume that any female of childbearing age with lower abdominal pain is experiencing an ectopic pregnancy.
• Ectopic pregnancy is life-threatening. ________________________________ the patient immediately.
• S/S include abdominal pain ________________________________ weeks after LMP.
• Management is to prevent/treat shock

26 Placenta Previa
• Placenta develops over the cervix, thus blocking passageway of the fetus
• Usually presents with ________________________________ bright red bleeding.
• Never attempt ________________________________ exam.
• Treat for shock.
• Transport immediately—treatment is delivery by ________________________________.

27 Placenta Previa

28 Abruptio Placentae
• Premature ________________________________ of a normally implanted placenta from the uterine wall
• Can be a life threat
• Signs and symptoms ________________________________:
  – can include bleeding or ________________________________ present
  – Can produce ________________________________ of abdomen
• Classified as partial, severe, or complete.
• Treat for shock, ________________________________ resuscitation.
• Transport ________________________________ lateral recumbent position.
Abruptio Placentae

Medical Complications of Pregnancy

- Disorders
  - Supine Syndrome
  - Gestational

Hypertensive Disorders

- Preeclampsia and Eclampsia
- Chronic
- Chronic Hypertension Superimposed with Preeclampsia
- Hypertension

Preeclampsia

- A progressive disorder that is an increase in systolic BP by ______ mmHG and/or diastolic of ______ mmHg
- Most common PIH
- Most common in last 10 weeks of gestation
- Highest rate in ________________, especially teenagers and those over 35 yoa.
- Exact cause is unknown
- S/S include: edema, __________ in urine, headache, visual disturbances, hyperactive reflexes, decrease in urinary output
- Primary danger is development of ______________________

Eclampsia

- Characterized by grand mal seizure activity
- Often preceded by visual disturbances or pain in the ________________
- Normally have massive __________________________ and extremely elevated BP
- Death of __________________________ and fetus often occur

Treatment of Preeclampsia

- Monitor patient carefully
- Establish IV of __________
- Rapid transport __________________________ lights and siren
- Consider ___________________________ if diastolic BP is over 110mmHg
- Consider ___________________________ Sulfate if transport time is long

Treatment of Eclampsia

- Oxygen and airway management
- Magnesium Sulfate __________________________ diluted slow IV push to control seizures
  - Calcium __________________________ is antidote for Mag Sulfate OD
● If unable to control seizure with Magnesium Sulfate, administer

Rapid transport

36 Magnesium Sulfate (MGSO4)
● Mineral based drug, anti-______________________________ for eclampsia
● Blocks neuromuscular transmission and decreases acetylcholine
● Indications: eclampsia and Torsades
● Loading Dose for eclampsia: ___________ - ___________ grams slow IV push (diluted) over 15 minutes
● Maintenance Dose for eclampsia: ___________ gram/hr via IV drip

37 Magnesium Sulfate (MGSO4)
● Contraindications
  – Allergic
  – __________________________________________
  – Used with caution with ___________________________ impairment
● Side Effects: May cause Magnesium__________________________ (Magnesium intoxication)

38 S/S of Magnesium Toxicity
● Flushing, sweating, depressed ________________________________, flaccid paralysis, hypothermia
● Circulatory collapse, cardiac depression
● CNS depression proceeding to respiratory paralysis
● Hypocalcemia
● Reversed with ________________________________ Gluconate

39 Calcium Gluconate 10%
● Mineral based drug
● Indications: Magnesium toxicity
● Adult dosage is ___________ gram slow IVP
● Contraindications:

40 Calcium Gluconate 10%
● Side Effects:
  – ________________________________, constipation, GI irritation
  – Rapid IV push can cause vasodilation, cardiac
  – ________________________________, hypotension, and bradycardia
● Infiltrated IV line can cause ________________________________ and abscesses

41 Chronic Hypertension
● Chronic is 140/90 or over before pregnancy or prior to
  __________________________________________________________________ week
● Cause is __________________________________________________________________
● Goal of management is to prevent the development of
Other Hypertension Syndromes

- Hypertension __________________________ With Preeclampsia: chronic hypertension that develops into preeclampsia and eclampsia
- __________________________ Hypertension: temporary rise in BP which occurs during labor or early in postpartum that normalizes within 10 days

Supine Hypotensive Syndrome

- AKA: Vena Cava Syndrome
- Occurs in the 3rd trimester when the uterus compresses the inferior vena cava when the mother lies in the __________________________ position
- Treat by placing patient in the left lateral __________________________ position, or elevate right hip.
- Monitor fetal heart tones and maternal vital signs.
- If volume is __________________________ , initiate an IV of normal saline.

Gestational Diabetes

- Occurs when __________________________ imbalance causes an increase in insulin production
- Consider __________________________ when encountering a pregnant patient with altered mental status.
- Signs include __________________________ and tachycardia.
- If blood glucose is below 60 mg/dl, start IV-NS, give 25 grams of D50. If blood glucose is above 200 mg/dl, administer 1–2 liters NS by IV per protocol.

Braxton-Hicks Contractions

- __________________________ labor that increases in intensity and frequency but does not cause cervical changes
- Normally requires no treatment other than supportive and reassurance
- __________________________ if any doubt

Preterm Labor

- Any labor < __________ weeks gestation
- Maternal Factors
  - Cardiovascular disease, renal disease, diabetes, uterine and cervical abnormalities, maternal __________________________, trauma, contributory factors
- Placental Factors
  - Placenta previa
  - Abruptio placentae

Preterm Labor

- Fetal Factors
  - __________________________ gestation
  - Excessive __________________________ fluid
  - Fetal __________________________
● Assess labor status as a normal pregnancy

49 □ Stopping Labor
3 approaches to stopping labor:
● Sedate the patient with ___________________________ or barbiturates
● ___________________________ bolus
● ___________________________
  – Terbutaline, Magnesium Sulfate, Ritodrine
● Normally limited only to sedation in EMS, consult protocols

50 □ The Puerperium (the time period surrounding the ____________________________ of the fetus)

51 □ Stages of Labor
● Stage 1: onset of ____________________________ to full dilation of the cervix
● Stage 2: Complete dilation to delivery of the ____________________________
● Stage 3: Delivery of the fetus to delivery of the ____________________________

52 □ Stages of Labor

53 □ Management of a Patient in Labor
● Transport active labor patients unless delivery is ____________________________
● Maternal urge to push or the presence of ____________________________ indicates imminent delivery
● Delivery at the scene or in the ambulance will be necessary.
● If contractions are 2-3 minutes apart and delivery does not occur within __________ minutes, transport

54 □ Field Delivery
1. Set up delivery area.
2. Give ____________________________ to mother and start IV-NS TKO.
   ● Drape mother with ____________________________ from OB kit.
   ● Monitor ____________________________ heart rate.
   ● As head crowns, apply gentle ____________________________.
  • Suction the mouth and then the ____________________________.
  • Clamp and cut the cord.
  • Dry the infant and keep it warm.
  • Deliver the ____________________________ and save for transport with the mother.

55 □ Neonatal Care
● Support the infant’s head and ____________________________, using both hands.
Maintain _____________________________!
• Clear infant’s airway by suctioning mouth and nose.
• Assess the neonate using ____________________________ score.

56 Apgar Scoring

57 Neonatal Resuscitation
• If the infant’s respirations are below __________ per minute and tactile stimulation does not increase rate to normal range, assist ventilations using bag valve mask with high-flow oxygen.
• If the heart rate is below __________ and does not respond to ventilations, initiate chest compressions.
• Transport to a facility with neonatal intensive care capabilities.

58 Abnormal Delivery Situations

59 Breech Presentation
• The buttocks or both feet present first.
• Do not ___________________________ on infant’s feet
• If the ___________________________ does not immediately deliver or the infant starts to breathe with its face pressed against the vaginal wall, form a “V” and push the vaginal wall away from infant’s face. Continue during transport.

60 Breech Presentation

61 Prolapsed Cord
• The umbilical cord ___________________________ the fetal presenting part.
• Administer oxygen, and keep warm.
• Place in ___________________________ or knee-chest position
• If the umbilical cord is seen in the vagina, insert two gloved fingers to raise the fetus off the cord. Do not push cord back.
• Wrap cord in sterile ___________________________ towel.
• Transport immediately; do not attempt delivery.

62 Prolapsed Cord

63 Limb Presentation
• With limb presentation, place the mother in ________________ position, administer oxygen, and transport immediately. Do not attempt delivery.
• Do not touch limb as it may stimulate ___________________________
• Apply oxygen

64 Other Abnormal Presentations
• Whenever an abnormal presentation or position of the fetus makes normal delivery impossible, ___________________________ the mother.
• Administer oxygen.
• ___________________________ immediately.
• Do not attempt field delivery in these circumstances.
Other Delivery Complications

Multiple Births
- Follow normal guidelines, but have ________________________________ personnel and equipment.
- In twin births, labor starts ________________________________ and babies are smaller.
- Prevent ________________________________.

Cephalopelvic Disproportion
- Infant’s ________________________________ is too big to pass through pelvis easily.
- Causes include oversized fetus, hydrocephalus, conjoined twins, or fetal tumors.
- If not recognized, can cause ________________________________ rupture.
- Usually requires cesarean section.
- Give oxygen to mother and start IV.
- Rapid transport.

Precipitous Delivery
- Occurs in less than ________ hours of labor.
- Usually in patients in grand ________________________________, fetal trauma, tearing of cord, or maternal lacerations.
- Be ready for ________________________________ delivery, and attempt to control the head.
- Keep the baby warm.

Shoulder Dystocia
- Infant’s shoulders are larger than its head.
- Occurs most often with __________ or obese mothers
- Shoulders are trapped between the symphysis pubis and the sacrum (Turtle sign)
- Do not pull on the infant’s ________________________________.
- Administer O2 and have mother drop her buttocks off the end of the bed and flex her thighs upward and apply pressure over symphysis pubis
- If baby does not deliver, ________________________________ the patient immediately.

Meconium Staining
- Fetus passes ________________________________ into the amniotic fluid.
- 10 to 30% of all deliveries
- Indicates a fetal ________________________________ incident
- Color of amniotic fluid is yellowish ________________________________ to dark green “pea soup” instead of the light color of normal fluid

Meconium Staining
- If meconium is thick, visualize the ________________________________ and suction the ________________________________ and trachea using an endotracheal suction tube until all meconium has been cleared from the airway.
- Consider intubation if baby is not active
Maternal Complications of Labor and Delivery

Postpartum Hemorrhage
- Defined as a loss of more than __________ cc of blood following delivery.
- Establish two large-bore IVs of normal saline.
- Treat for shock as necessary.
- Follow protocols if applying ______________________ trousers.

Uterine Rupture
- Tearing, or rupture, of the ________________________________.
- Patient complains of severe abdominal pain and will often be in shock. Abdomen is often tender and _______________________________. Possibly have an hour glass shape.
- Fetal heart tones are ________________________________.
- Treat for shock.
- Give high-flow oxygen and start two large-bore IVs of normal saline.
- Transport patient rapidly.

Uterine Inversion
- Uterus turns inside out after delivery and extends through the cervix.
- ________________________________ loss ranges from 800 to 1,800 cc.
- Could be caused by too aggressive uterine ________________________________.
- Begin fluid resuscitation.
- Make ________________________________ attempt to replace the uterus. If this fails, cover the uterus with towels moistened with saline and transport immediately.
- Apply oxygen and establish IV’s to maintain BP

Pulmonary Embolism
- Presents with sudden severe ________________________________ and sharp chest pain.
- Administer high-flow oxygen and support ________________________________ as needed.
- Establish an IV of normal saline.
- Transport immediately, monitoring the heart, vital signs, and oxygen ________________________________.
# Apgar Scoring

## The Apgar Score

<table>
<thead>
<tr>
<th>Element</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance (skin color)</td>
<td>Body and extremities blue, pale</td>
<td>Body pink, extremities blue</td>
<td>Completely pink</td>
<td></td>
</tr>
<tr>
<td>Pulse rate</td>
<td>Absent</td>
<td>Below 100/min</td>
<td>100/min or above</td>
<td></td>
</tr>
<tr>
<td>Grimace (Irritability)</td>
<td>No response</td>
<td>Grimace</td>
<td>Cough, sneeze, cry</td>
<td></td>
</tr>
<tr>
<td>Activity (Muscle tone)</td>
<td>Limp</td>
<td>Some flexion of extremities</td>
<td>Active motion</td>
<td></td>
</tr>
<tr>
<td>Respiratory effort</td>
<td>Absent</td>
<td>Slow and irregular</td>
<td>Strong cry</td>
<td>TOTAL SCORE =</td>
</tr>
</tbody>
</table>

TOTAL SCORE =