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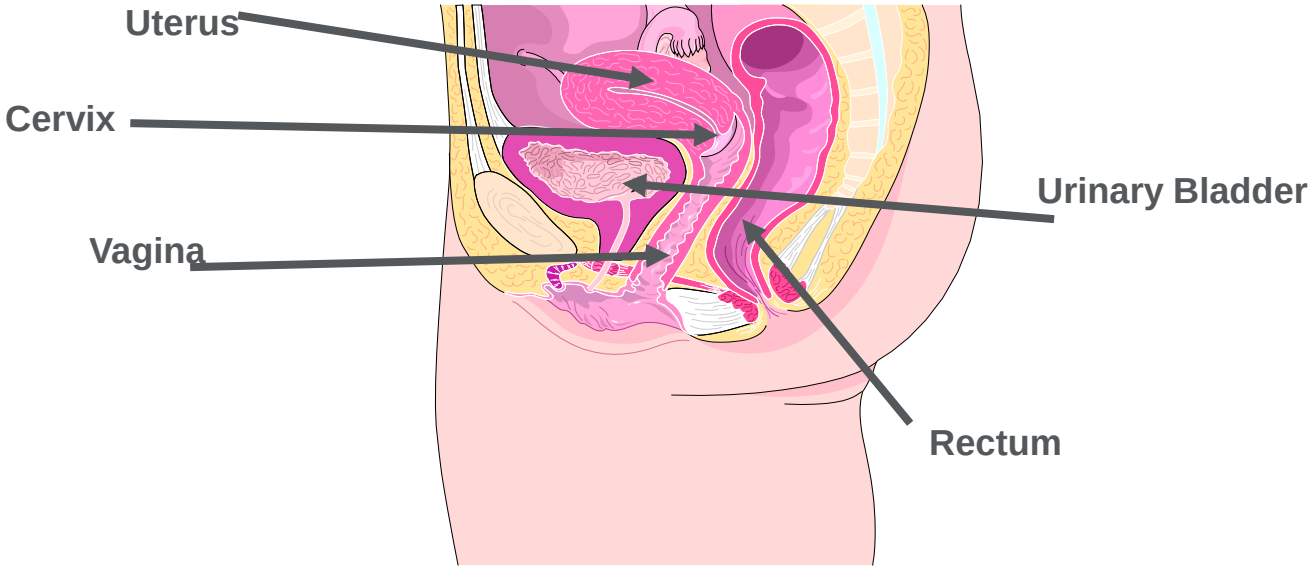
Obstetrics/Gynecological Emergencies

McHenry Western Lake County EMS

Female Reproductive System



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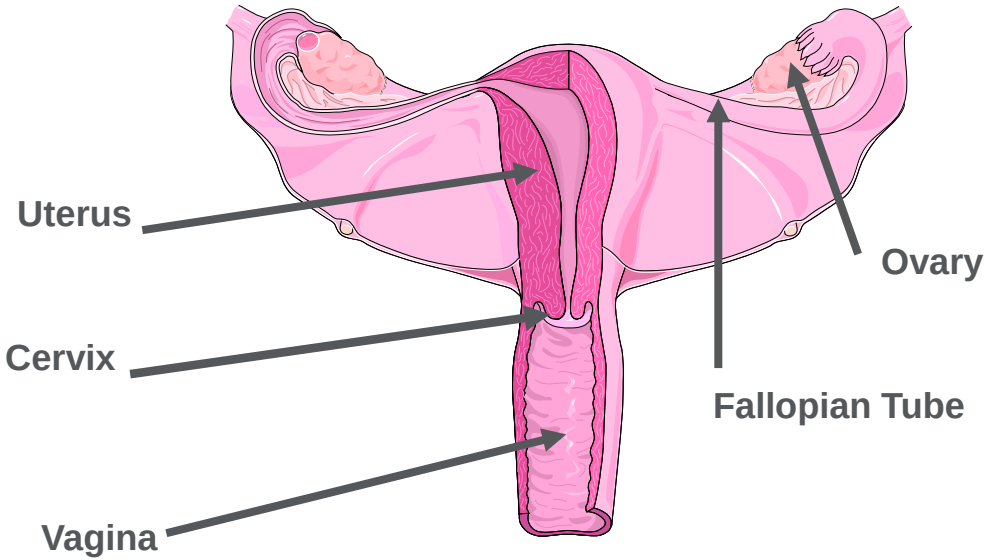
Female Reproductive System



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OB/Gyn Assessment

- History
  - When was your last normal menstrual period (LMP)
  - Any abdominal pain? (location/quality)
  - Any vaginal bleeding ?
  - Any vaginal discharge?

OB/Gyn Assessment

- History
  - “Is there a possibility you might be pregnant?”
  - Have you had a missed menstrual period?
  - Nausea or vomiting?
  - Any urinary frequency?
  - Breast enlargement?

OB/Gyn Assessment

- History
  - If pregnant:
    - Para = # of live births
    - Gravida = # of pregnancies
      - Para 2 Grava 4 would be 2 children with 4 pregnancies
    - To estimate due date:
      - Subtract 3 from the month of the LMP
      - Add 7 to the date of the LMP
      - LMP was 10/8/06
      - Due date will be 7/15/07

OB/Gyn Assessment

- Vital signs
  - Hypertention
  - Hypotension
  - Tilt test if blood loss is suspected
- Focused exam
  - Edema (especially to face and hands)

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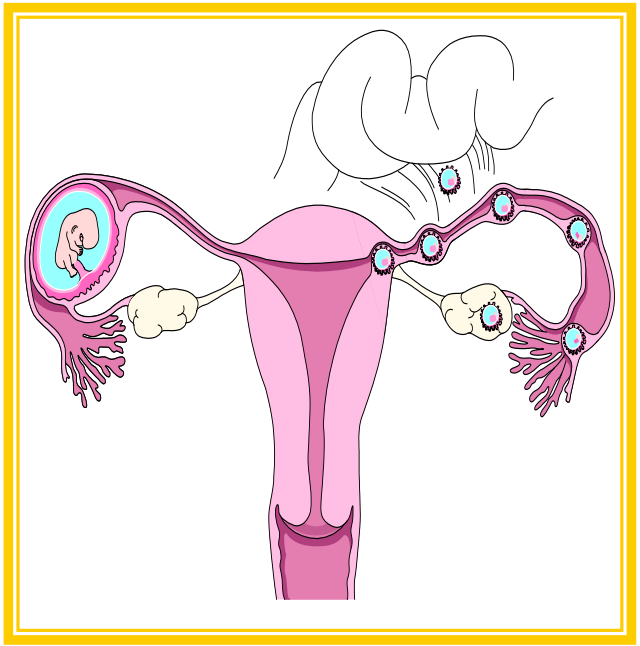
Gynecological Emergencies

Ectopic Pregnancy

- 95% of these are in the Fallopian tube
- Also known a “Tubal Pregnancy”
- This is a life threatening situation!



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Ectopic Pregnancy

- Signs and symptoms
  - Missed menstrual period as well as other early signs of pregnancy
  - Light vaginal bleeding or spotting 6-8 weeks after her LMP
  - Abdominal pains that may radiate to the shoulder
  - Positive tilt test

Ectopic Pregnancy

- Signs and Symptoms
  - Patient may not exhibit abdominal pains
  - May have had a negative pregnancy test
  - They may not have missed a period to date
  - Signs and symptoms of hypovolemic shock

Ectopic Pregnancy

Any lower abdominal pain or unexplained hypovolemic shock in a female patient of child bearing age

=

Ectopic Pregnancy

until proven other wise!

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Ectopic Pregnancy

- Management
- **O_2** 12-15 L by tight fitting mask even w/o respiratory distress until $SpO_2 \geq 96\%$;
  - **Warm NS IV fluid challenges** in 200 mL increments **titrated to patient response**. Repeat as necessary. Permissive hypotension is contraindicated in pregnant women. Maintain SBP ≥ 90 (MAP≥ 65).
  - Immediate transportation

Hypovolemic Shock Protocol

- Class I - IV hemorrhage/acute volume loss
- Sustained RR $\geq$ 20; sustained P $\geq$ 100 altered mental status (including anxiety/agitation); cool, moist, pale skin; narrowed pulse pressure.
- SBP may be above 100 (compensated shock) or below 100 (uncompensated shock).

Pelvic Inflammatory Disease

- Acute or chronic infection
- Involves Fallopian tubes, ovaries, uterus and peritoneum
- Staph, strep and coliform bacteria also can cause infections.
- Most common cause is gonorrhea

Pelvic Inflammatory Disease

- Management
  - 100% 02 by NRB
  - IV of 0.9 Saline
  - Transport

Spontaneous Abortion

- Otherwise known as a miscarriage
- Pregnancy terminates before 20th week
- Usually occurs in first trimester (first three months of pregnancy)

Spontaneous Abortion

- Signs and Symptoms
  - Vaginal bleeding
  - Cramping lower abdominal pain or pain in back
  - Passage of fetal tissue

Spontaneous Abortion

- Complications
  - Incomplete abortion
  - Hypovolemia
  - Infection, leading to sepsis

Spontaneous Abortion

- Management
  - 100% 02 by NRB
  - Anticipate significant bleeding/shock. If AMS or signs of hypoperfusion:
  - Warm NS IV fluid challenges in 200 mL increments titrated to patient response. Repeat as necessary. Permissive hypotension is contraindicated in pregnant women. Maintain SBP ≥ 90 (MAP≥ 65).
  - Shock positioning
  - Transport any tissue to the hospital for evaluation
  - Provide emotional support

Pre-eclampsia

- Acute hypertension after the 24th week of gestation
- Most often in first pregnancies
- 5-7% of pregnancies
- Other risk factors:
  - Young mothers, no prenatal care, multiple gestation, lower socioeconomic status

Pre-eclampsia

- Trio of complications:
  - Hypertension
  - Proteinuria
  - Edema

Pre-eclampsia

- Signs and Symptoms
  - Hypertension
    - Systolic B/P >140 mm Hg
    - Diastolic B/P >90 mm Hg
    - Either reading >30 mm Hg above patients normal B/P
    - Edema (particularly in the hands and face) present early in the day

Pre-eclampsia

- Signs and Symptoms
  - Rapid weight gain
    - >3 lbs/week in second trimester
    - >1lb/week in third trimester
    - 10 lbs in one week
  - Decreased urine output
  - Headache and blurred vision
  - Nausea and vomiting
  - Epigastric pains
  - Pulmonary edema

Pre-eclampsia

- Complications
  - Eclampsia
  - Premature separation of the placenta
  - Retinal damage
  - Pulmonary edema
  - Lower birth weight infants
  - Cerebral hemorrhage

Pre-eclampsia

- Management
  - **GENTLE HANDLING,** quiet environment
  - Position patient on side if > 20 wks gestation. Manually displace uterus to the side
  - Obtain BP while patient is positioned on side
  - Obtain pregnancy history per Emergency Childbirth SOP;
  - If AMS: Assess glucose level. Rx per hypoglycemia SOP
  - Minimal CNS stimulation. Do **NOT** check pupil light reflex

Pre eclampsia

continued

- Lights and sirens may be contraindicated. Contact OLMC for orders
- Anticipate seizures; prepare suction,
- **MAGNESIUM** (50%) **2 Gm** in16 mL NS (slow IVP) or in 50 mL NS IVPB over 5-10 min. Max 1 Gm / minute.
- Begin on scene, continue enroute. Put gauze moistened in cold water or cold pack over IV site to relieve burning.

Eclampsia

- Occurs in less than 1% of pregnancies
- This is the gravest form of pregnancy induced hypertension

Eclampsia

- Signs and Symptoms
  - Same signs and symptoms as pre-eclampsia plus:
    - Gran Mal seizure
    - Comatose

Eclampsia

- Complications
  - Same as pre-eclampsia
  - Fetal mortality rate is 25%
  - Maternal mortality rate is 10%

Eclampsia

- Management
  - 100% 02 by NRB
  - Assist ventilations as needed
  - Reduce the light in the patient compartment
  - Manage for seizures
  - Transport immediately

Eclampsia

- Remember!
  - Assess every pregnant patient for
    - Increased B/P
    - Edema
  - Take all reports of seizures in pregnant females seriously!

Protocol per MWLCEMS for Pre-Eclampsia or Hypertension of Pregnancy

- **Definition: HTN in pregnancy: SBP ≥140 and/or DBP ≥90** (have at least 2 measurements taken at least 15 minutes apart)
- **PLUS** any one of the following: moderate to severe fluid retention/edema, rapid weight gain (>10 lbs in one week), headache, diplopia or blurred vision, photophobia, confusion, irritability, AMS, epigastric distress; nausea/vomiting; or claims to be spilling protein in urine.

Protocol per MWLCEMS for Pre-Eclampsia or Hypertension of Pregnancy

- **IMC** special considerations:
  - **GENTLE HANDLING,** quiet environment
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  - If AMS: Assess glucose level. Rx per hypoglycemia SOP
  - Minimal CNS stimulation. Do **NOT** check pupil light reflex
  - Lights and sirens may be contraindicated. Contact OLMC for orders

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- Begin on scene, continue enroute. Put gauze moistened in cold water or cold pack over IV site to relieve burning.

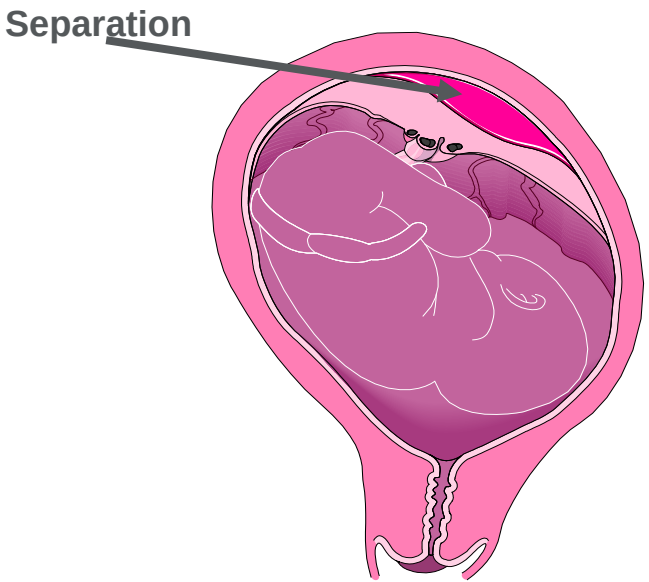
Protocol per MWLCEMS for Pre-Eclampsia or Hypertension of Pregnancy

- **MAGNESIUM** (50%) **2 Gm** in16 mL NS (slow IVP/IO) or in 50 mL NS IVPB over 5-10 min. Max 1 Gm / minute.
- If patient received 2 Gm for preeclampsia prior to experiencing a seizure, may give an additional 2 Gm to Rx seizure

Protocol per MWLCEMS for Pre-Eclampsia or Hypertension of Pregnancy

- **If seizure persists after magnesium:**
  - **MIDAZOLAM 2 mg increments IVP/IO** q. 30-60 sec (0.2 mg/kg IN*)* **up to 10 mg IVP/IO/IN** titrated to stop seizure.
  - If IV/IO unable and IN contraindicated: IM dose 5-10 mg (0.1-0.2 mg/kg) max 10 mg single dose.
  - All routes: may repeat to total of 20 mg prn if SBP $\geq$ 90 (MAP $\geq$ 65) unless contraindicated.
  - If chronic dx (HF); and/or on opiates or CNS depressants: $\downarrow$ total dose to 0.1 mg/kg.

Abruptio Placenta



- Premature separation of placenta from the uterus
- High risk groups include:
  - Older pregnant patients
  - Hypertensives
  - Multigravidas

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Abruptio Placenta

- Signs and Symptoms
  - Mild to moderate vaginal bleeding
  - Continuous, knife like abdominal pain
  - Rigid, tender uterus
  - Hypovolemia

Abruptio Placenta

Third trimester abdominal pain

=

Abruption Placenta

until it is proven otherwise

Abruptio Placenta

Hypovolemic shock out of proportion
to visible bleeding

=

Abruptio Placenta
until proven otherwise

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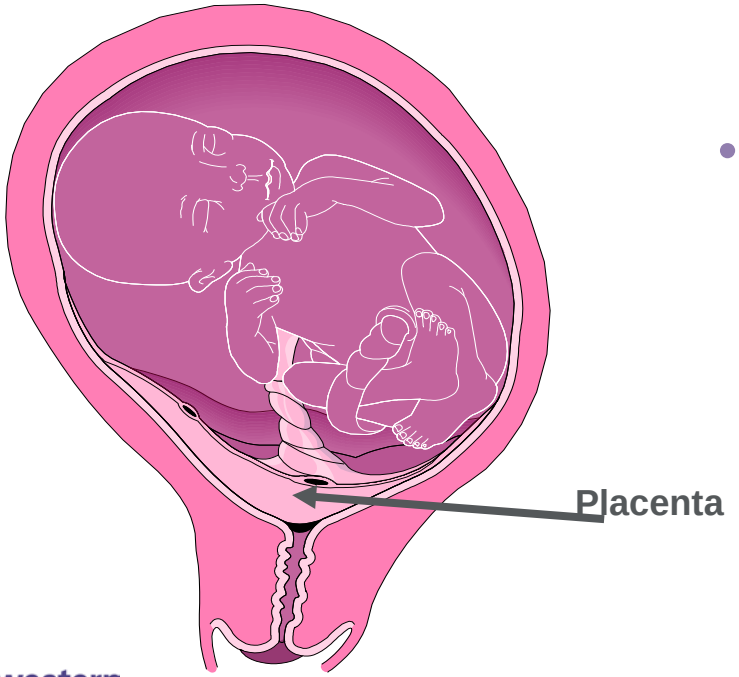
Abruptio Placenta

- Management
  - 100% 02 by NRB
  - Place patient in the L lateral recumbent position
  - IV of 0.9 Saline
  - Supportive care for hypovolemic shock
  - Immediate transport

Placenta Previa



- Implantation of the placenta over the cervical opening

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Placenta Previa

- Signs and Symptoms
  - Painless, bright red vaginal bleeding
  - Soft, non tender uterus
  - Signs and symptoms are the same as hypovolemia

Placenta Previa

- Management
  - 100% 02 by NRB
  - IV of 0.9 Saline
  - Place patient in the L lateral recumbent position
  - Supportive care for hypovolemic shock

Placenta Previa

A vaginal exam should

NEVER

Be performed on a patient in the 3rd trimester with vaginal bleeding

Uterine Rupture

- Causes
  - Blunt trauma to pregnant uterus
  - Prolonged labor against an obstruction
  - Labor against weakened uterine wall
    - Old Cesarean section scar
    - Grand Multiparous patients

Protocol per MWLCEMS for Bleeding in Pregnancy:

Threatened miscarriage/Ectopic Pregnancy/Placenta Previa/Abruptio Placenta

- **IMC** special considerations:
- Position patient on side if in > 20 wks gestation
- Raise either side of backboard if spine motion restriction is necessary.
- Obtain BP while patient is positioned on side.

Protocol per MWLCEMS for Bleeding in Pregnancy:

Threatened miscarriage/Ectopic Pregnancy/Placenta Previa/Abruptio Placenta

- 02 12-15 L by tight fitting mask even w/o respiratory distress until Sp02 >96%.
- Anticipate significant bleeding/shock. If AMS or signs of hypoperfusion:
- **Warm IV NS fluid challenges in 200 mL increments** titrated to patient response. Repeat as necessary.
- Permissive hypotension is contraindicated in pregnant women. Maintain SBP >90 (MAP >65)

Protocol per MWLCEMS for Bleeding in Pregnancy:

Threatened miscarriage/Ectopic Pregnancy/Placenta Previa/Abruptio Placenta

- Obtain pregnancy history per Emergency Childbirth SOP.
- Ask about the onset, provocation, quality, region, radiation, severity and duration of abdominal pain
- Complete serial abdominal exam per OB Trauma SOP.
- Note type, color, amount and nature of vaginal bleeding or discharge. If tissue is passed, collect and transport to hospital.
- See notes on bleeding/shock in OB Trauma SOP

Protocol per MWLCEMS for Bleeding in Pregnancy:

Threatened miscarriage/Ectopic Pregnancy/Placenta Previa/Abruptio Placenta

- Ask about the onset, provocation, quality, radiation, severity, and duration of abdominal pain.
- Note type, color, amount, and nature of vaginal bleeding or discharge.
- If tissue is passed, collect and transport to hospital with the patient.
- Palpate uterus for rigidity. Compare to abdominal wall tone.

TRAUMA IN PREGNANCY

1. **ITC** special considerations: Same immediate priorities. Pregnancy does not limit or restrict any resuscitative Rx.
   - Stabilize mom first as fetus's life depends on the mother's.
   - Upper airways are congested due to increased blood and swollen capillaries. Advanced airway per SOP (pg 12).
   - O_2 12-15 L / tight fitting mask until SpO_2 ≥ 96%; SpO_2 must be >94% for adequate fetal oxygenation.
   - Hypotension: SBP < 90 (MAP 65) or <80% of baseline. **Warm NS IVF challenges** in consecutive 200 mL increments. Repeat prn – **permissive hypotension contraindicated** (maintain SBP >90; MAP ≥65)
     Consider TXA 1 Gm in 100mL NS IVPB over 10 min if within 3 hours of trauma
   - If spine precautions indicated and gestational age > 20 weeks:
     Tilt patient to either side by raising the side of the board and supporting board with blanket rolls. Manually displace uterus to side. Avoid Trendelenburg position.
   - Asess BP while mother is seated or tilted towards side if gestational age > 20 wks.
   - **Pain mgt.**: – **Fentanyl**: Category C – Consult with OLMC. The potential benefits to mother must be balanced against possible hazard to fetus.
2. **Serial abdominal exams**: Note abdominal shape & contour
   - Inspect for deformity, contusions, abrasions, punctures, and wounds
   - Assess rigidity of uterus vs. abdominal wall, leakage of amniotic fluid (presence of meconium/blood), presence/absence of fetal movements/presenting parts.
   - **If contractions present**: Assess duration, frequency, strength; pain scale; check for imminent delivery.
   - **Vaginal bleeding**: May be earliest sign of placental separation, abortion or preterm labor. May indicate injury to GU tract. Note presence, amount, color, consistency of blood. Do not pack vagina.
   - **If bag of waters ruptures** in EMS presence: evaluate color, consistency, odor, quantity of fluid.
   - Assess for prolapsed cord.
3. Prepare to deliver if signs of imminent birth are present.

Parameter	Normal	Changes in pregnancy
Blood volume	5 L	Increased 40-50%; May NOT show S&S of shock until ≥30% blood loss
HR	70	Increased 10-15 BPM higher than prepregnant state
Blood pressure	110-120/70	Decreased 10-15 mmHg in 2nd trimester; returns to normal 3rd trimester Beware supine hypotensive syndrome > 20 wks Vena caval & aortic compression when supine ↓ RV preload & CO by 30-40%
Cardiac output	5 L/min	Increased 20-30%
Hematocrit/hemoglobin	13-15 / 40	Decreased due to plasma dilution (physiologic anemia)
$ETCO_2$	35-45	25-32 >10 wks gestation: Hyperventilation normal (gradient for gas exchange w/ fetus)
Gastric motility	Normal	Decreased; prone to vomiting & aspiration. Last meal unreliable indicator of gastric contents. Decreased motility mimics silent abdomen.

- Pregnancy influences patterns of injury/clinical presentations after trauma. Highest risk in moms with injuries to thorax, abdomen, and pelvis
- Prime causes of fetal death d/t trauma: placental abruption; maternal death; maternal hypovolemic shock; **60% - 70% of fetal deaths occur following minor maternal injuries**. Risk for fetal injury highest in 3rd trimester when head is engaged, torso exposed, & ratio between fetus & amniotic fluid is lowest.
- Peripheral vasodilation causes ↑ peripheral circulation in 1st & 2nd trimesters. **Pt in shock may be warm and dry**.
- Maternal shock causes uterine vasoconstriction that ↓ blood flow to fetus by 20% - 30% before BP changes in mom.
- Will see changes in fetal HR pattern if FHTs can be assessed.
- Stretched abdominal wall **masks guarding, rigidity, & rebound tenderness**. Palpation exam unreliable in trauma. Less able to detect abdominal bleeding clinically. Bladder vulnerable to rupture w/ direct trauma to suprapubic area. Appendix in RUQ in late pregnancy due to upward shifting of abdominal organs.

CHILDBIRTH

PHASE I: LABOR

1. Obtain history and determine if there is adequate time to transport to hospital with OB services
   - **Gravida** (# of pregnancies); **para** (# of live births)
   - Number of miscarriages, stillbirths, abortions or multiple births
   - **Gestational age** in weeks: Due date (EDC) or last menstrual period (LMP)
   - Onset, strength, duration & frequency of contractions (time from beginning of one to the beginning of the next)
   - Length of previous labors in hours
   - **Status of membranes** ("bag of waters") - intact or ruptured
     If ruptured, inspect for prolapsed cord & evidence of meconium. Note time since rupture.
   - Presence of **vaginal bleeding/discharge** ("bloody show")
   - **High-risk concerns**: Lack of prenatal care, drug abuse, teenage pregnancy, mom 35 yrs & older; history of diabetes, HTN, CV and other pre-existing diseases that may compromise mother and/or fetus, pre-term labor (< 37 wks), previous breech or C-section, or multiple fetuses.
2. **IMC** special considerations:
   - Maintain eye contact; coach her to pant or blow during contractions.
   - If mother becomes **hypotensive or lightheaded**: turn pt. on side; O_2 12-15 L/NRM; NS IVF challenges in 200 mL increments, if indicated.
3. ✓**for S&S imminent delivery**: Contractions ≤ 2 min apart; bulging/crowning during contraction, involuntary pushing, urgency to move bowels
   - **DELIVERY NOT IMMINENT**: Allow pt. to assume most comfortable position; transport to hospital w/ OB services
   - **DELIVERY IS IMMINENT**:
     - **Do not attempt to restrain or delay delivery unless prolapsed cord is present.**
     - Provide emotional support; mom is in pain and may not cooperate
     - Position semi-sitting (head up 30°) w/ knees bent or on side on a firm surface, if possible
     - Wash hands w/ waterless cleaner. Put on **FULL** BSI. Remove clothing below her waist if able.
     - **Open OB pack**; maintain content cleanliness; place absorbent materials beneath perineum and drapes over abdomen, each leg, & beneath perineum. Prepare bulb syringe, cord clamps, scalpel, and chux to dry and warm infant. Ready neonatal BVM, NRM, resuscitation equipment, and O_2 supply. Prepare warmer if available.

PHASE II: DELIVERY

1. **HEAD**: Allow head to deliver passively.
   - Control rate of descent by placing palm of one hand gently over occiput
   - Protect perineum with pressure from other hand
   - If amniotic sac still intact, gently twist or tear the membrane
2. **After head is delivered**:
   - **No meconium**: Do not suction during delivery to avoid Vagal stimulation and fetal bradycardia
   - **Meconium present**: Gently suction mouth then nose w/ bulb syringe
     Anticipate need for resuscitation of a nonvigorous infant after delivery
   - Feel around neck for the umbilical cord (**nuchal cord**). If present, attempt to gently lift it over baby's head.
     If unsuccessful, double clamp and cut cord between the clamps.
   - Support head while it passively turns to one side in preparation for shoulders to deliver.
3. **SHOULDERS**:
   - Gently guide head downwards to deliver upper shoulder first
   - Support and lift the head and neck slightly to deliver lower shoulder
   - **If shoulder dystocia**: Gently flex mother's knees alongside her abdomen
     Attempt to rotate anterior shoulder under symphysis pubis
4. The rest of the infant should deliver quickly with next contraction. Firmly grasp infant as it emerges.
   Baby will be wet and slippery.
5. Note date and time of delivery. Proceed to **POST-PARTUM CARE**

OBSTETRICAL COMPLICATIONS

Time sensitive pts

BLEEDING IN PREGNANCY

Threatened miscarriage / Ectopic pregnancy / Placenta previa / Abruptio placenta

1. **IMC** special considerations:
   - Position patient on side if > 20 wks gestation
     Raise either side of backboard if spine motion restriction is necessary; manually displace uterus to side
     Obtain BP while patient is positioned on side
   - **O_2** 12-15 L by tight fitting mask even w/o respiratory distress until $SpO_2 \geq 96\%$;
     SpO_2 must be > 94% for adequate fetal oxygenation.
   - Anticipate significant bleeding/shock. If AMS or signs of hypoperfusion:
     Warm NS IV fluid challenges in 200 mL increments **titrated to patient response**. Repeat as necessary.
     Permissive hypotension is contraindicated in pregnant women. Maintain SBP ≥ 90 (MAP≥ 65).
   - Obtain pregnancy history per Emergency Childbirth SOP (pg. 66)
   - Ask about the onset, provocation, quality, region, radiation, severity, and duration of abdominal pain
2. Complete serial abdominal exams per OB Trauma SOP
3. Note type, color, amount, and nature of vaginal bleeding or discharge
   If tissue is passed, collect and transport to hospital with patient
4. See notes on bleeding/shock in OB Trauma SOP

PRE-ECLAMPSIA OR HYPERTENSION OF PREGNANCY

HTN in pregnancy: SBP ≥140 and/or DBP ≥90 (ave. of at least 2 measurements taken at least 15 minutes apart) **PLUS** any one of the following: moderate to severe fluid retention/edema, rapid weight gain (>10 lbs in one week), headache, diplopia or blurred vision, photophobia, confusion, irritability, AMS, epigastric distress; nausea/vomiting; or claims to be spilling protein in urine.

1. **IMC special considerations**:
   - **GENTLE HANDLING,** quiet environment
   - Position patient on side if > 20 wks gestation. Manually displace uterus to the side
     Obtain BP while patient is positioned on side
   - Obtain pregnancy history per Emergency Childbirth SOP;
   - If AMS: Assess glucose level. Rx per hypoglycemia SOP
   - Minimal CNS stimulation. Do **NOT** check pupil light reflex
   - Lights and sirens may be contraindicated. Contact OLMC for orders
2. Anticipate seizures; prepare suction,
   MAGNESIUM (50%) **2 Gm** in16 mL NS (slow IVP) or in 50 mL NS IVPB over 5-10 min. Max 1 Gm / minute.
   Begin on soene, continue enroute. Put gauze moistened in cold water or cold pack over IV site to relieve burning.

If generalized tonic clonic seizure activity (ECLAMPSIA):

3. **MAGNESIUM** (50%) **2 Gm** in16 mL NS (slow IVP/IO) or in 50 mL NS IVPB over 5-10 min. Max 1 Gm / minute.
   If patient received 2 Gm for preeclampsia prior to experiencing a seizure, may give an additional 2 Gm to Rx seizure
4. **If seizure persists after magnesium:**
   MIDAZOLAM 2 mg increments IVP/IO q. 30-60 sec (0.2 mg/kg IN**) up to 10 mg IVP/IO/IN** titrated to stop seizure.
   If IV/IO unable and IN contraindicated: IM dose 5-10 mg (0.1-0.2 mg/kg) max 10 mg single dose.
   All routes: may repeat to total of 20 mg prn if SBP ≥ 90 (MAP ≥ 65) unless contraindicated.
   If chronic dx (HF); and/or on opiates or CNS depressants: ↓ total dose to 0.1 mg/kg.

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Quiz for CE Credit

Please complete the quiz for this lesson and follow the directions on how to submit for credit.

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Thank You!