OBSTETRIC HEMORRHAGE

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Objectives

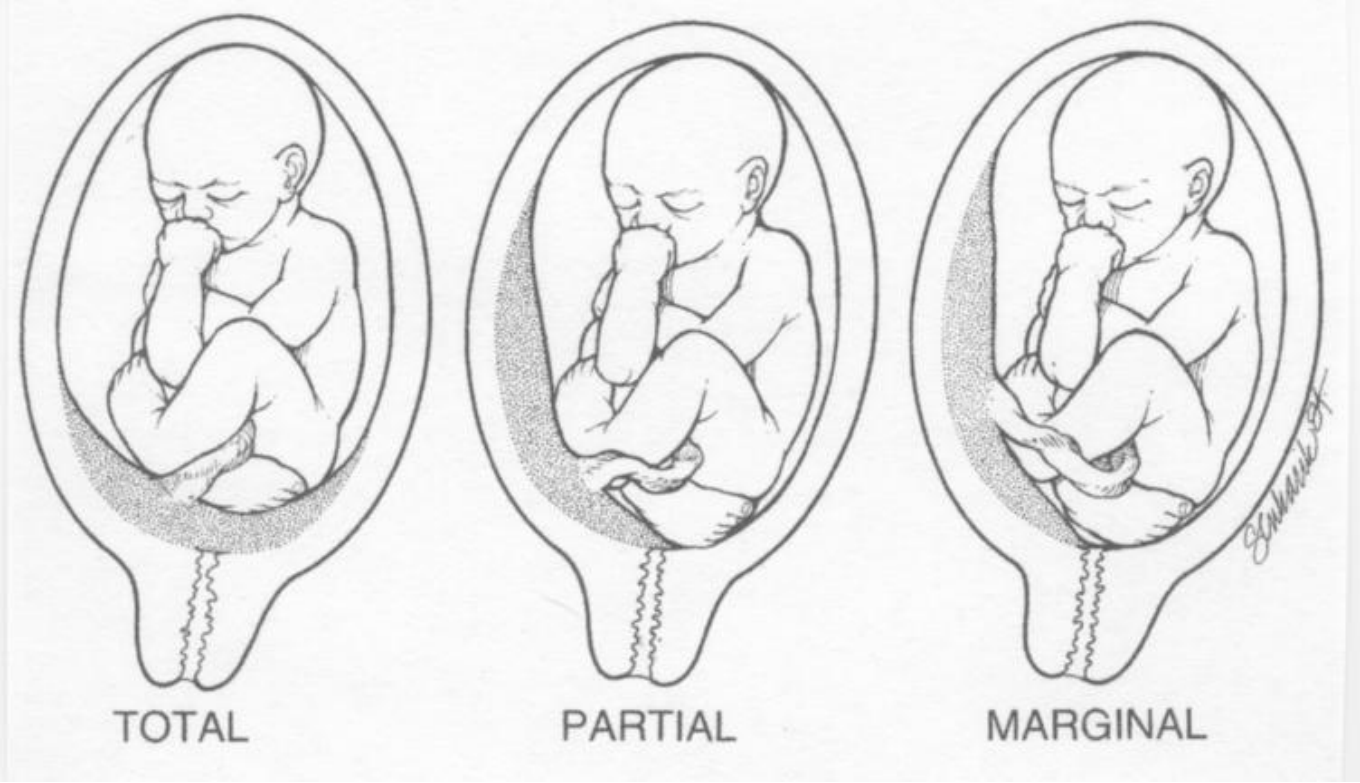
- Define the different obstetric hemorrhagic complications.
- Discuss risk factors and the implications for patient care.
- Prioritize nursing interventions during an OB emergency of an obstetric hemorrhage.

Antepartum Hemorrhage

- Abnormal placentation
- Uterine rupture
- Trauma

Placenta Previa

Abnormal implantation of the placenta over the cervical os.



Risk Factors

- Previous placenta previa
- Previous c-sections (increases with each c/s)
- Endometritis
- Abortion
- Shortened intervals between pregnancies
- Advanced maternal age
- Smoking
- Multiple gestation
- Multiparity
- African American or Asian race
- Substance abuse

Clinical manifestation and Diagnosis

- Signs and symptoms
  - Bright red painless uterine bleeding
  - May be intermittent or constant
  - After the bleeding episode, women may experience spotting of bright red or dark brown blood

- Diagnosis
  - Ultrasound

Management

- Depends largely on maternal condition and gestational age
- When an episode of bleeding occurs, hospitalization is required
  - Bedrest
  - Maintain IV access
  - Have cross matched blood at all times
  - Fetal heart rate monitoring

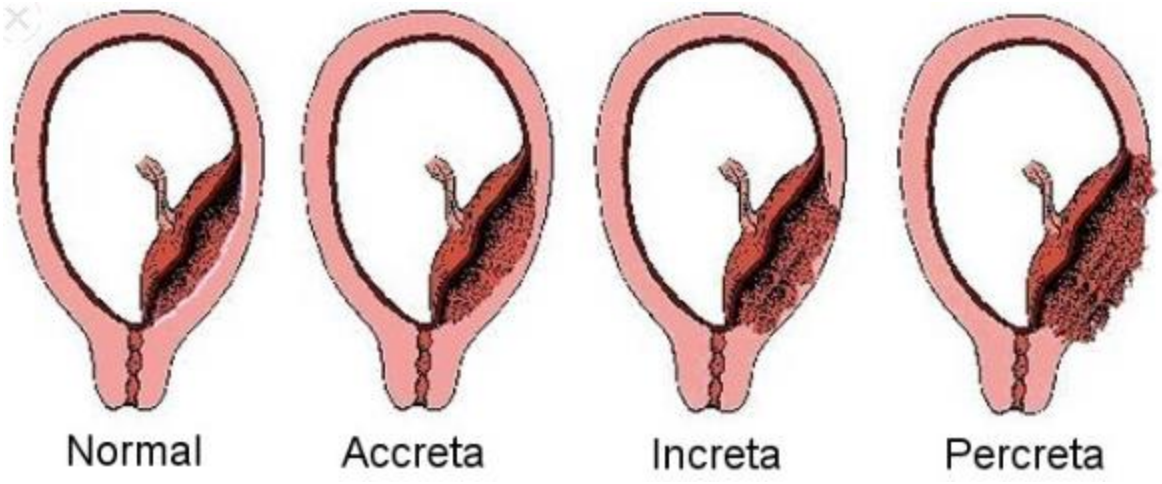
Morbidly Adherent Placenta

- Morbidly Adherent Placenta (MAP) refers to three specific types of abnormal placentation:
  - Placenta Accreta
  - Placenta Increta
  - Placenta Percreta

  The three types are differentiated based on the depth of invasion.

- The placenta is attached too deeply into the uterine wall.
- MAP is associated with significant morbidity and is potentially life-threatening to both mother and neonate.

Accreta, Increta, Percreta



Accreta, Increta, and Percreta

- https://www.youtube.com/watch?v=x3EMTQQjoA0

MAP Risk Factors

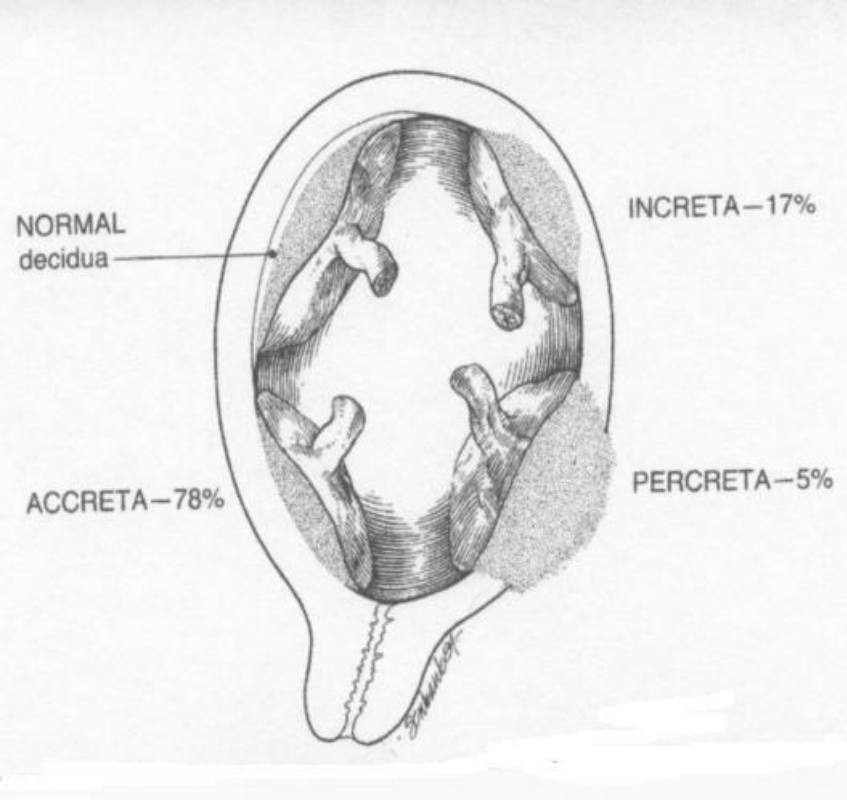
- WHY do the Trophoblasts attach more deeply in the uterine wall?
- Risk Factors:
  - C-Section—risk increases with each c-section
  - Curretage—lining of uterus is scraped away for a variety of reasons
  - Myomectomy – procedure for removal of fibroids
    - →All of these procedures create a THIN endometrium
  - Placenta Previa—placenta implants in the lower parts of the uterus
    - →Lower parts of the uterus have thinner walls
  - Aggressive trophoblasts—too aggressive in their implantation
  - Other Risk Factors: IVF, AMA, Multiparity, Smoking, short interval between c/s and pregnancy

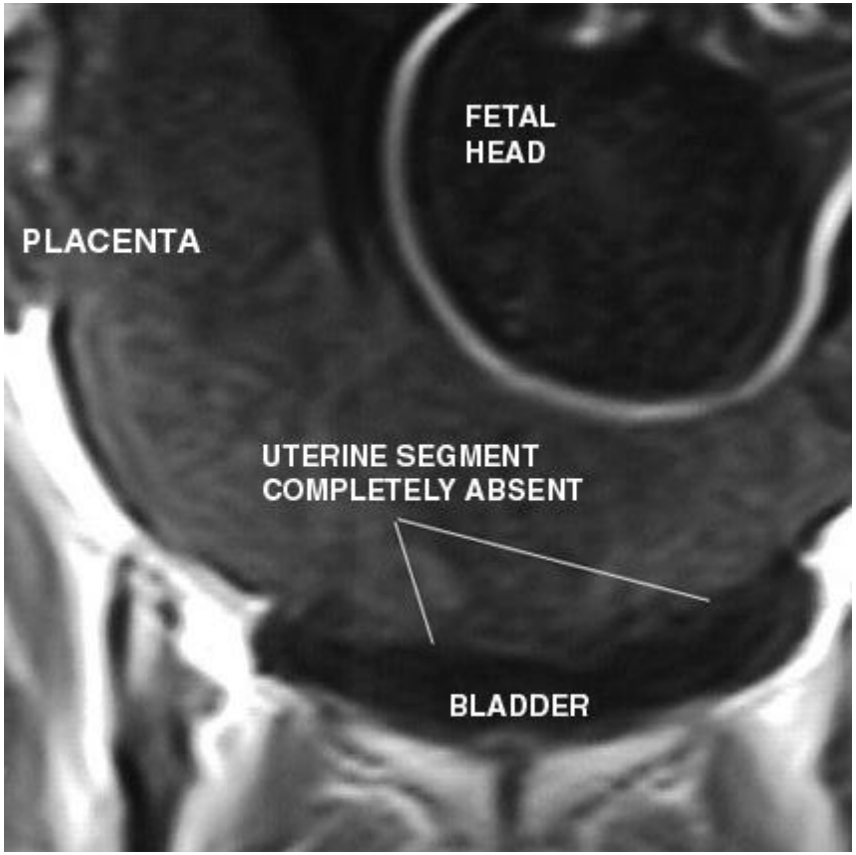
MAP Diagnosis and Management

- Diagnosis:
  - Ultrasound
  - MRI—usually an adjunctive imaging modality if something is suspected
  - Sometimes not diagnosed until after delivery when placenta will not detach from uterine wall.

- Management:
  - If known, scheduled c-section, with plan to leave the placenta in place, removing the uterus and cervix. C-Section takes place in a tertiary care center with access to large quantities of blood products, specialty providers, and ICU.

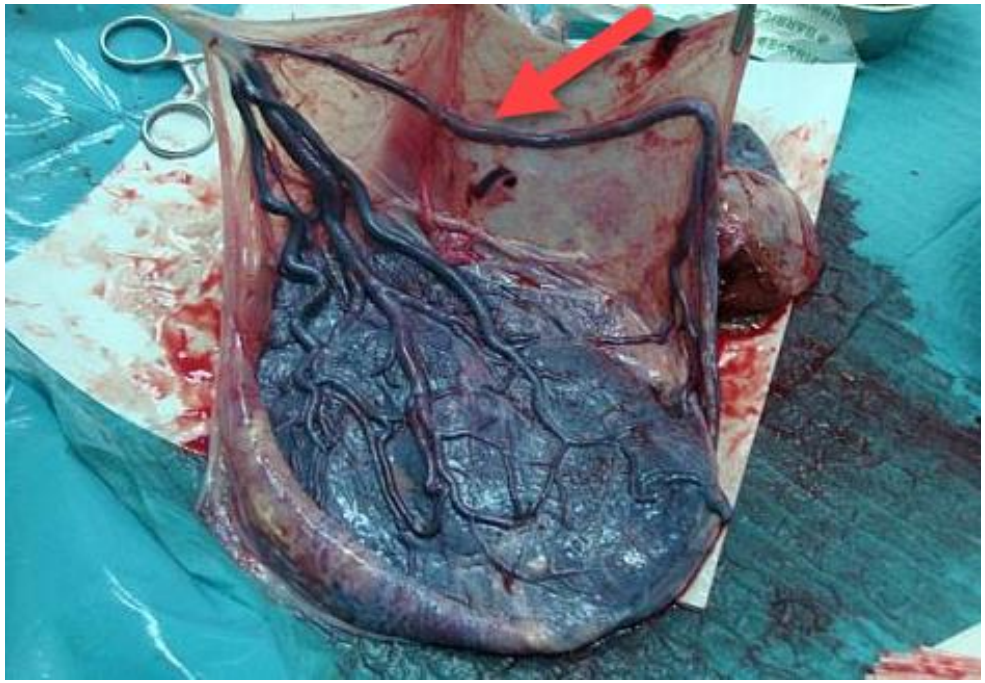
MAP Variations





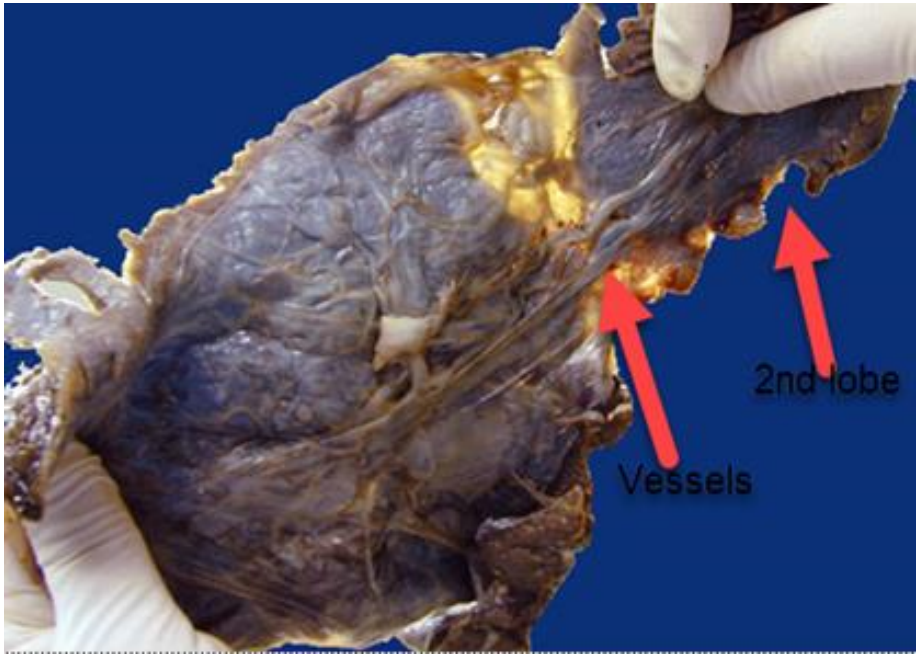
Velamentous Cord Insertion

- **Velamentous Cord Insertion--**insertion of the umbilical cord into the fetal membranes; vessels run between the chorion and amnion without protection of Warton's jelly making them vulnerable to rupture.

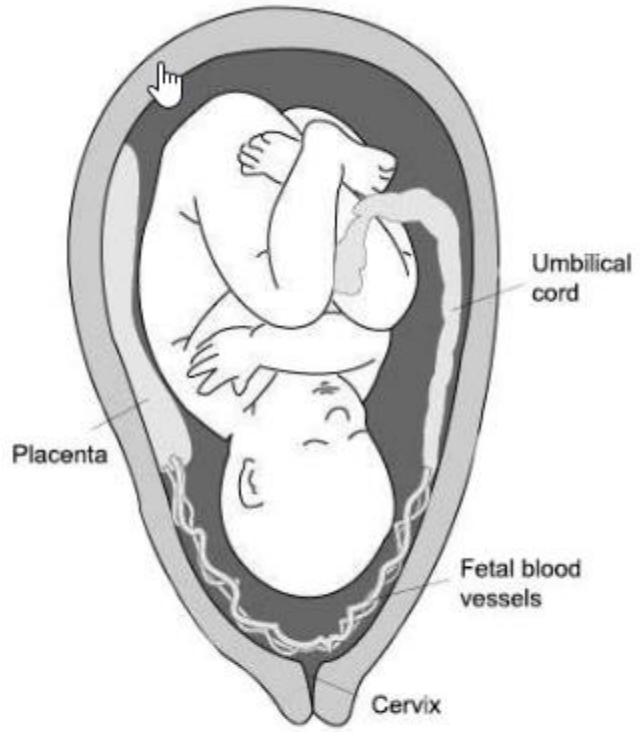


Succenturiate Lobe

- A smaller accessory placental lobe, separate from the main disc of the placenta. Vessels run between lobe and placenta, making them vulnerable to rupture.

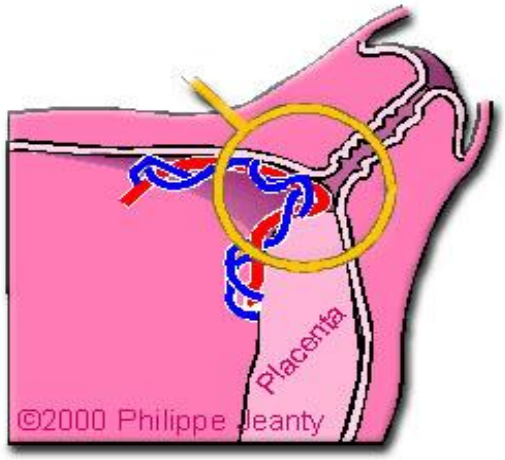


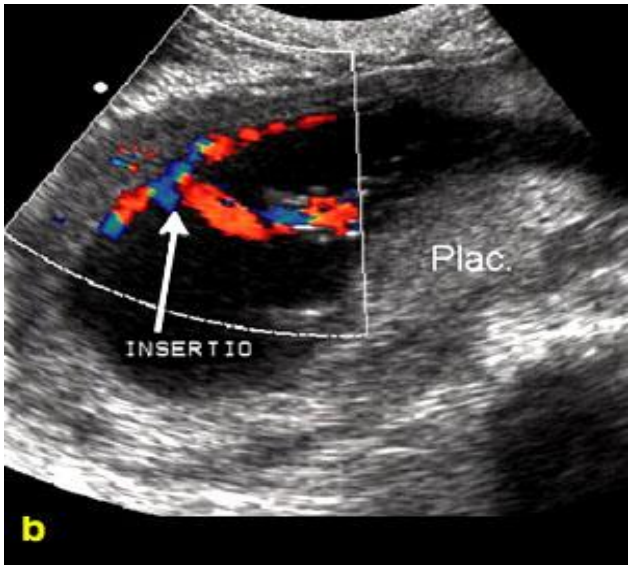
Vasa Previa



Vasa Previa

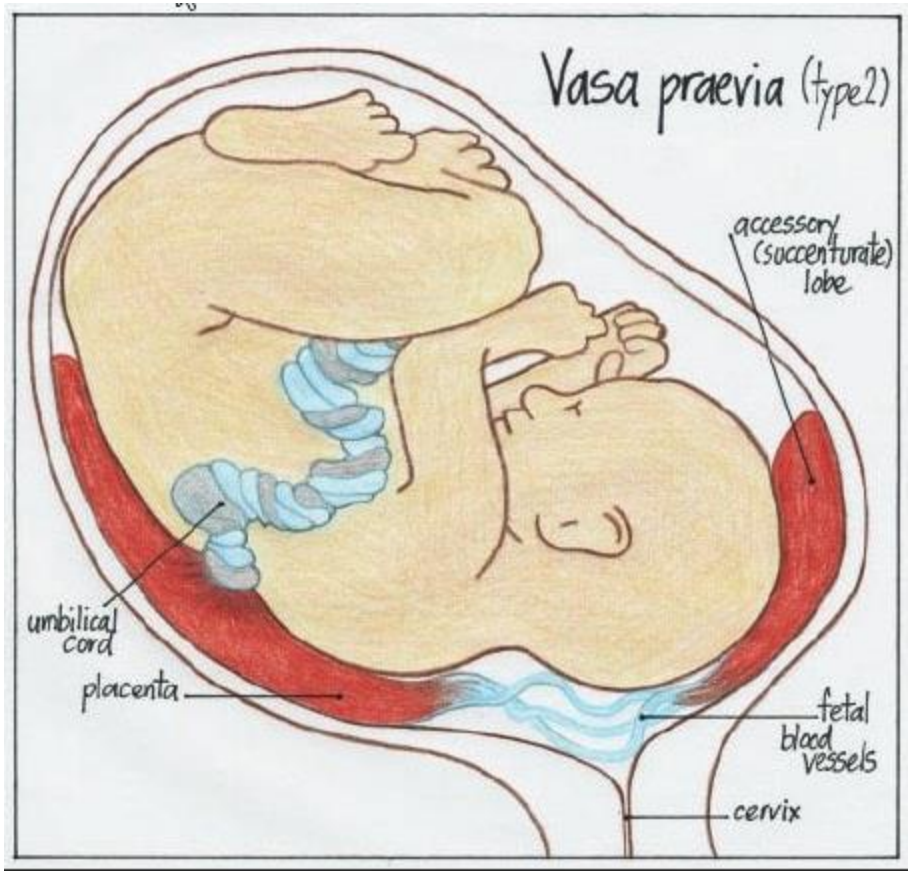
Vasa Previa





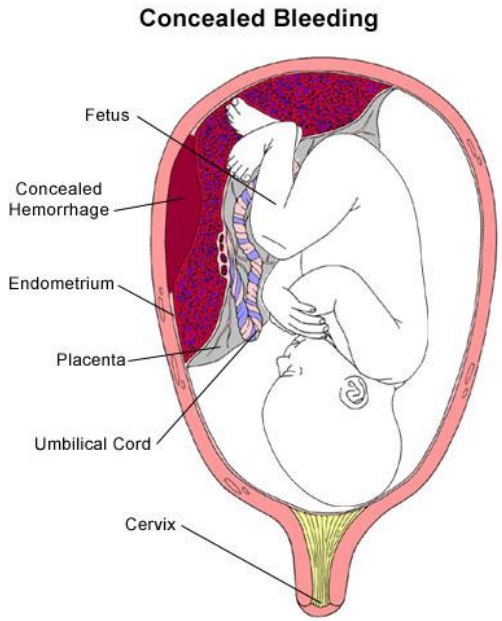
- A result of a velamentous insertion or succenturiate lobe.
- Vessels traverse within the membrane, crossing the cervical os before reaching the placenta. If SROM or AROM, fetus may exsanguinate in minutes.
- Presence of bright red blood at time of ROM, coupled with Non-reassuring FHTs should ALERT nurse to potential Vasa Previa! →EMERGENCY C/S
- US imaging, using color doppler often enables prenatal diagnosis, thus improving outcomes
  - 96% vs <50%

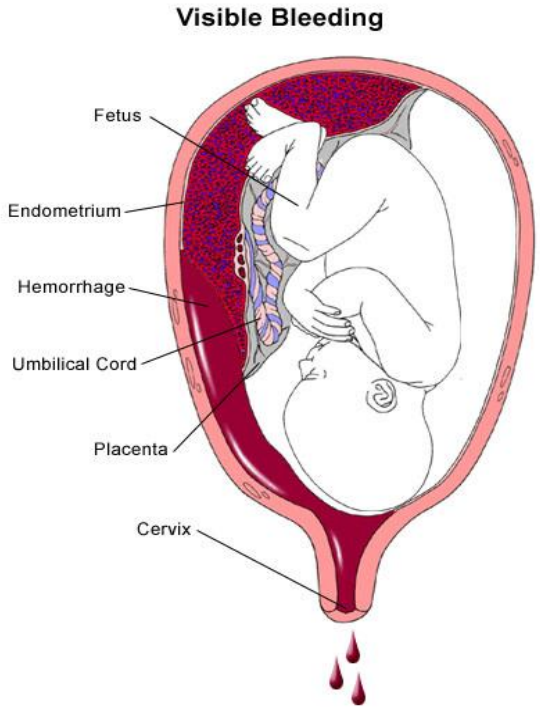
Vasa Previa


Vasa praevia (type2)
accessory (succenturiate) lobe
umbilical cord
placenta
fetal blood vessels
cervix

Placental Abruption

- Premature separation of the normally implanted placenta
  - Grade I, II, III





Grading of Placental Abruption

Grade I

- Slight vag bleeding or concealed
- Some uterine irritability
- FHR normal
- Maternal BP & fibrinogen normal

Grade II

- External bleeding mild – mod or may be concealed
- Tetanic contractions
- FHR may show compromise
- Maternal BP maintained, P↑, R↑
- Fibrinogen ↓ (150-250mg/dl)

Grade III

- Bleeding is moderate to severe – or may be concealed
- Tetanic & painful uterus
- Maternal hypotension & hypovolemia – quickly lead to shock
- Significant fetal compromise or death
- Fibrinogen ↓(<150mg/dl)
- Thrombocytopenia & factor depletion

Risk Factors

- Hypertension
- Prior C/S
- Blunt abdominal trauma
- Multiparity
- Smoking
- Cocaine use
- Rapid decompression of the uterus
- Use of IUPC
- PPROM
- Uterine anomalies or fibroids
- Prior abruption

Clinical Manifestations and Diagnosis

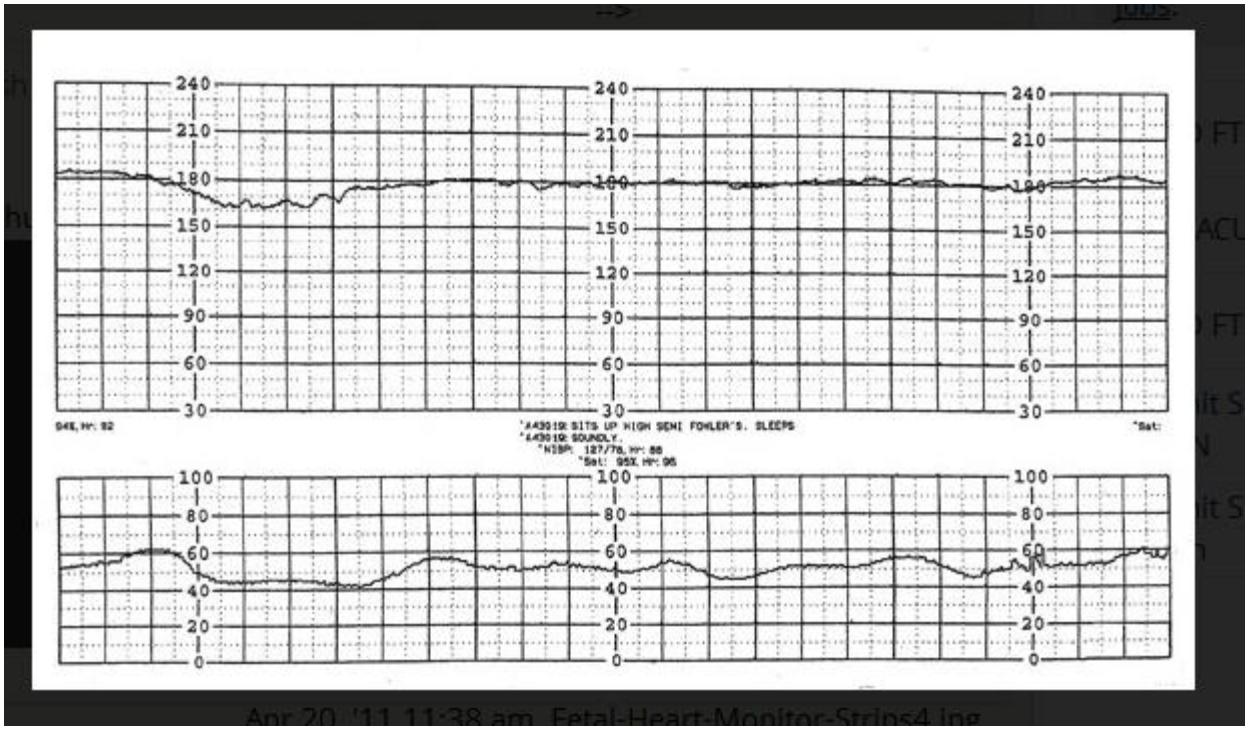
- Sudden-onset, intense uterine pain
- Tenderness
- Rigid abdomen
- Vaginal bleeding (10% may have concealed hemorrhage)
- Fetal distress
- Low amplitude, high frequency contractions

- Diagnosis
  - Based on the woman's history, physical exam and lab studies
  - Examination of placenta at birth or by pathologist
  - Ultrasound is not diagnostic for abruption

Management

- Depends on maternal and fetal status
  - In the presence of fetal compromise, severe hemorrhage, coagulopathy, poor labor progress or increasing uterine resting tone → C-SECTION
  - If the mother is hemodynamically stable and the fetus has normal FHR tracing, or the fetus is not living → vaginal birth may be attempted
  - IV access, place 2 lines if possible
  - Blood products and LR infused as necessary
  - Monitor closely for DIC

“Abruption Pattern”-high frequency, low amplitude contractions, tetanic



Uterine Rupture

- Actual separation of the uterine myometrium or previous uterine scar, with rupture of the membranes and possible extrusion of the fetus or fetal parts into the peritoneal cavity.
- Can be sudden and catastrophic

Risk Factors

- Previous uterine surgery
- High dosages of Oxytocin or Prostaglandin use
- Tachysystole
- Hypertonus
- Grand multiparity
- Blunt or penetrating abdominal trauma (MVA, battery, fall, etc)
- Midforceps rotation
- Maneuvers within the uterus
- Obstructed labor
- Abnormal fetal lie
- Previous terminations of pregnancy
- Vigorous pressure on the uterus at birth

Clinical manifestations

- Sudden FHR decelerations (most common)
- Sudden cessation of labor
- Uterine or abdominal pain (even w/ epidural)
- Asymmetric uterine shape
- Ability to palpate fetal parts through the abdominal wall
- Loss of fetal station
- Vaginal or intra-abdominal bleeding
- Signs of shock (syncope, hypotension, pallor, N/V, tachycardia)

Management

- Maternal hemodynamic stabilization
- Immediate C-section
- Possible blood transfusion
- Possible need for hysterectomy

Trauma

Trauma

- Most common source of trauma in pregnancy is MVA or domestic violence.
  - Morbidity/mortality depends on injury sustained and trimester of pregnancy.
- Head injuries, spinal cord injures and thoracic injuries are most common with MVA.
  - Seat belts with shoulder harness and air bags reduce injuries overall.
- Trauma patients are evaluated and stabilized in the ER, a perinatal nurse may be called to assist with evaluation of fetal well being.
- Continuous monitoring of FHR for 4-24 hours to rule out fetal compromise-which may be the first indication of maternal compromise.

Postpartum Hemorrhage

- Leading cause of maternal mortality, averaging 1-5% of all births
- In industrialized countries, PPH ranks in the top three causes of maternal mortality, together with embolism and hypertension
- PPH is diagnosed clinically as excessive bleeding that makes the patient symptomatic and/or results in signs of hypovolemia

- What are some symptoms of excessive bleeding?
- What are some signs of hypovolemia?

Postpartum Hemorrhage

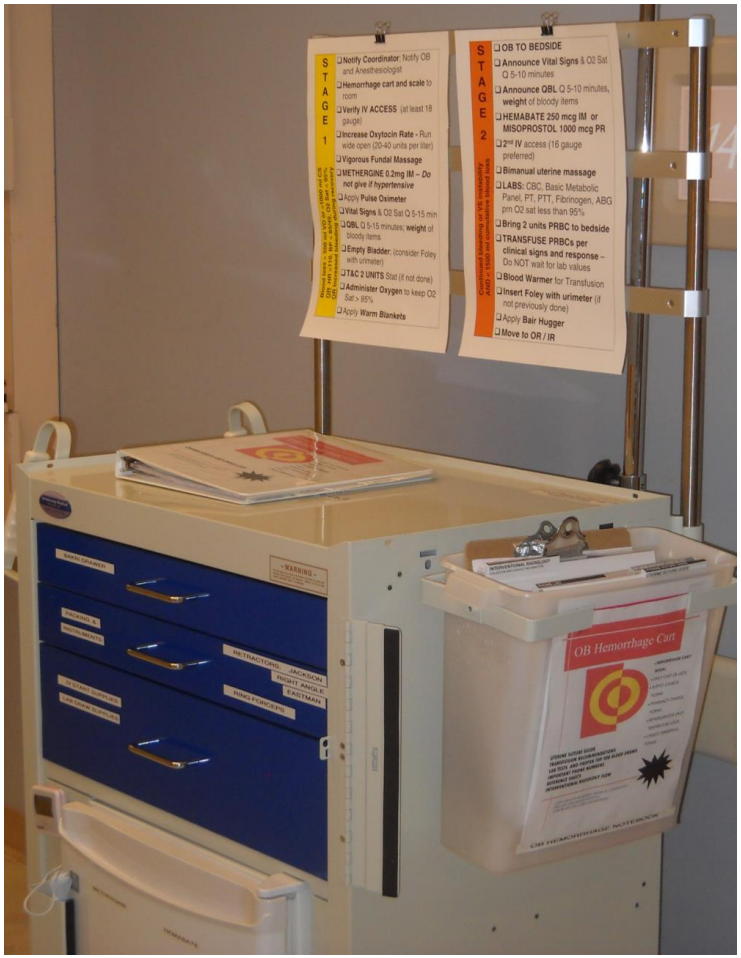
- Early or Primary PPH—80%+ cases caused by uterine atony
- Late or Secondary PPH—causes: infection, subinvolution of placental site, retained placenta, inherited coagulation defects
- Postpartum Assessments are vital to recognizing problems and complications
- Patient education is one of the most important postpartum care activities

Be Prepared!

- Readiness
- Recognition
- Response

Readiness

- OB Hemorrhage Cart
  - Quick access to emergency supplies
  - Meds easily accessible
  - Easy to find items
  - Include checklists
  - Visible protocols



Admission Risk Assessment

Low Risk

NO previous uterine surgery

Singleton pregnancy

Less than or equal to 4 previous births

No known bleeding disorder

No history of PPH

Uncomplicated delivery

No vaginal trauma

Medium Risk

Prior C/S or uterine surgery

Overdistended uterus (Multiple gestation, polyhydramnios)

Greater than 4 previous vaginal biths

Chorioamnionitis

History of previous PPH

Large uterine fibroids

Prolonged 2nd stage

Prolonged oxytocin use

Rapid labor

Operative vaginal delivery

Genital tract trauma

Shoulder dystocia

Magnesium sulfate treatment

Admission Risk Assessment

High Risk

Placenta previa, low lying placenta

Suspected placenta accreta

Hematocrit <30% and other risk factors present

Platelets <100,000

Anticoagulant therapy

Known coagulopathy

Active bleeding

Recognition—MEWS Criteria

- BP > 160 systolic or > 100 diastolic
- BP < 90 diastolic
- HR > 120 or < 50
- RR >30 or <10
- O2 Sat <95%
- Maternal confusion, agitation, or unresponsiveness
- Oliguria <35 ml/hr over a 2 hr period

Quantifying Blood Loss

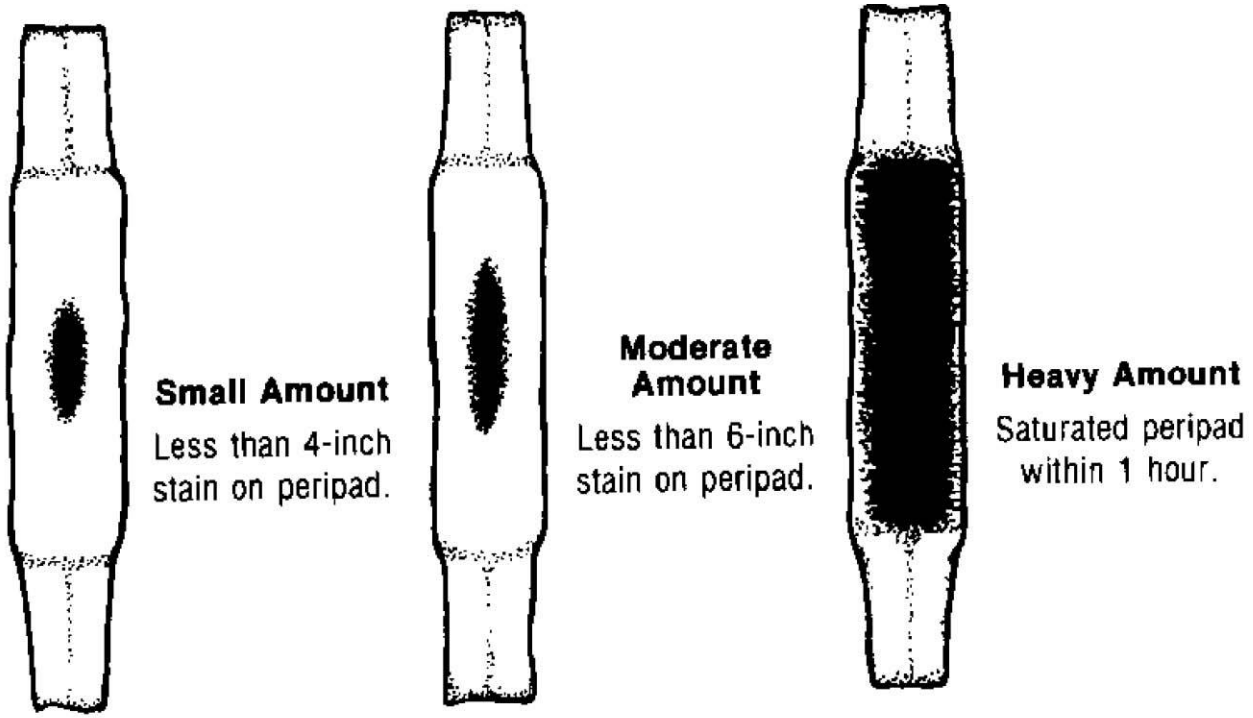
- AWHONN Quantification of Blood Loss Video

- Normal Vaginal delivery blood loss –500 mL
- Normal Cesarean delivery blood loss –1000 mL

QBL Measurement

- Tips for QBL
  - Calibrated under-buttocks drape
  - Dry weight list of commonly used items
  - Scale to weigh blood soaked items
  - Easy documentation

Visual Estimation—NOT as accurate



Small Amount
Less than 4-inch stain on peripad.

Moderate Amount
Less than 6-inch stain on peripad.

Heavy Amount
Saturated peripad within 1 hour.

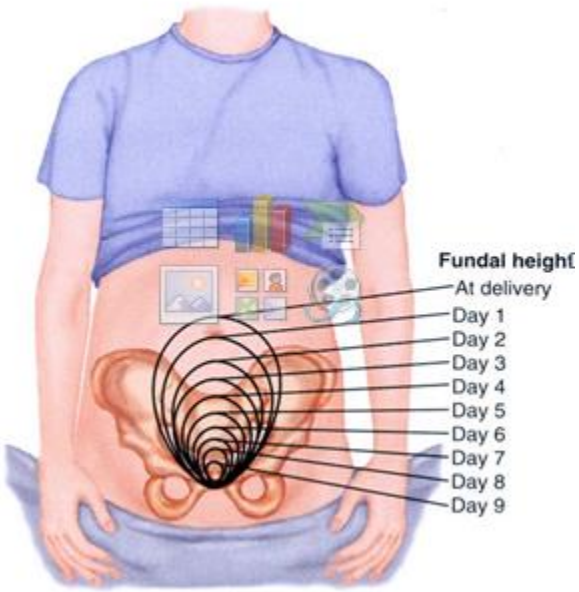
Response

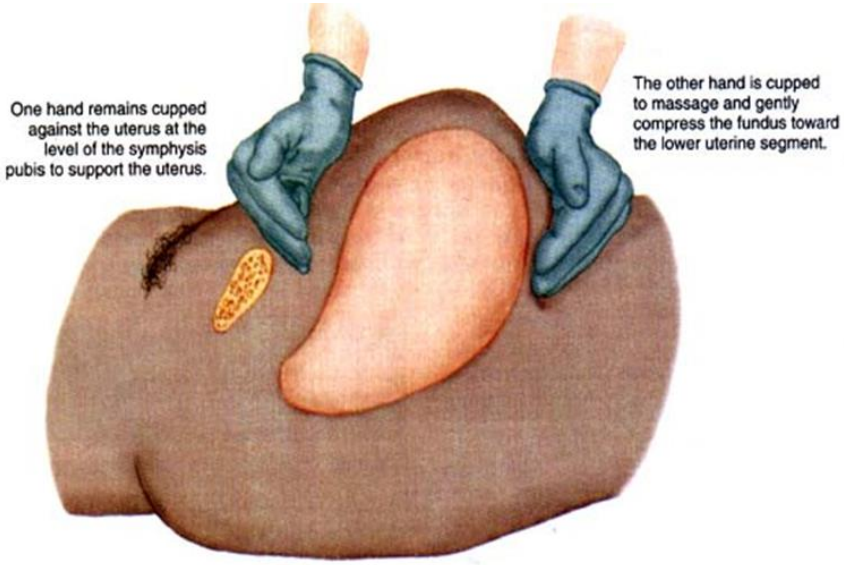
- Activate emergency response (Rapid Response Team, CODE OB, etc.)
- Simulation Drills—interdisciplinary
- Massive transfusion protocols
- SBAR Communication

Treat the Problem

- Tone—Uterine atony
- Tissue—Retained placenta
- Trauma—Lacerations
- Thrombin—Maternal blood disorder

Uterine Involution





Interventions

- Assess and weigh blood loss
- Monitor vital signs closely
- Place a Foley catheter and monitor output
- Keep patient warm
- Notify charge nurse, physician, anesthesia, others as appropriate
- Assess and treat cause
- Large bore IV access (possibly 2)
- Elevate patient legs, HOB flat (not Trendelenberg)
- Lab work: CBC, Platelets, Chemistry, Coag panel
- Medications as ordered
- Type and Cross for 2 units PRBCs

Drugs used in PPH

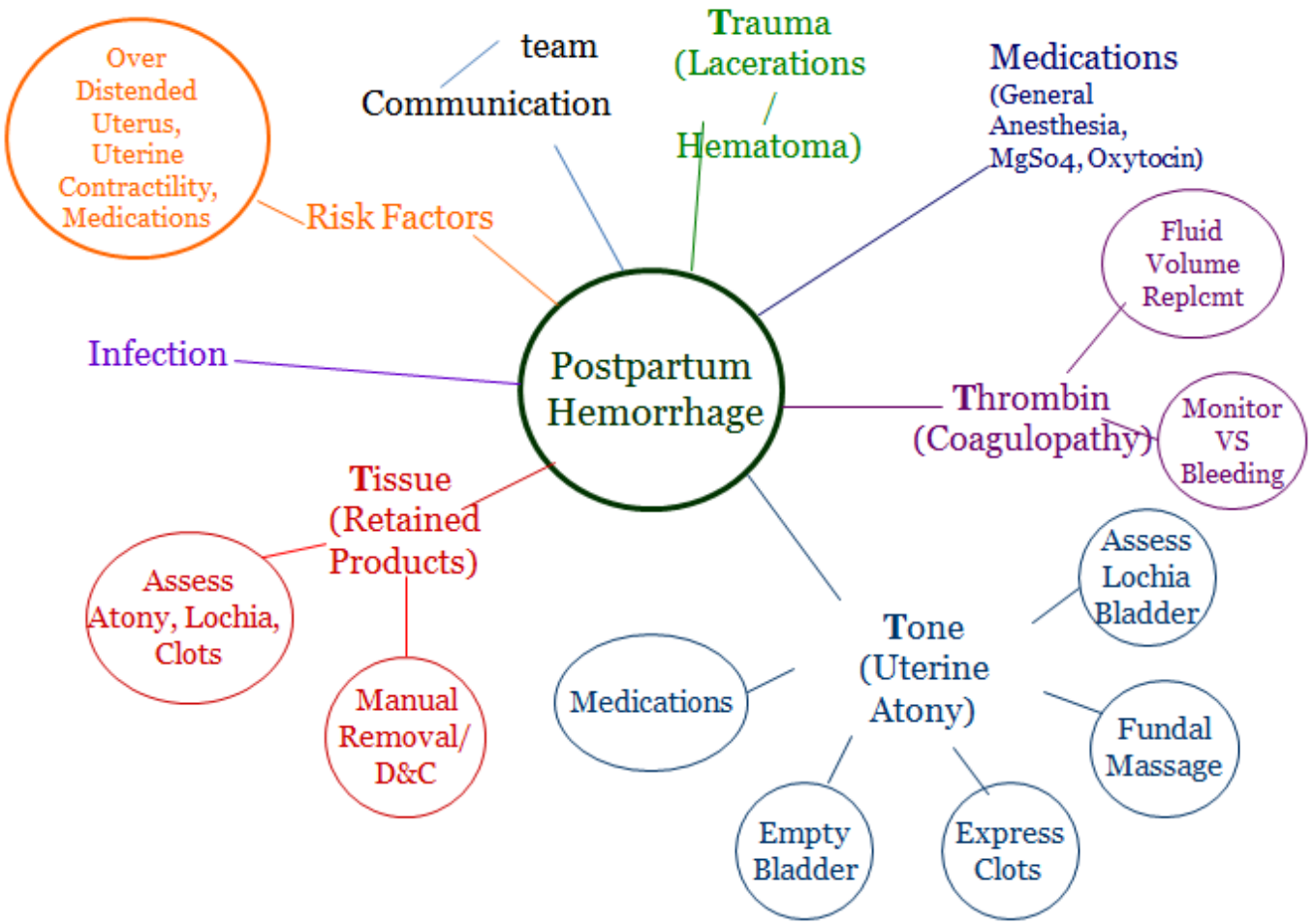
- Oxytocin: IV (10-40 units per 1000 mL NS) or IM (10 units)
- Methergine: IM (0.2mg every 2-4 hours)
- Hemabate: IM (250 mcg every 15-90 mins; max 8 doses)
- Cytotec (Misoprostol): Rectally (800 – 1000 mcg) OR Orally (time of onset is much quicker than rectally)
- Dinopostone: Suppository (20mg rectal or vaginal every 2 hours)
- TXA (Tranexamic Acid): requires preparation in solution for IV administration. Dosage = 1 g IV; a second dose may be given if bleeding continues after 30 mins.

Blood Component Therapy

- PRBCs
- Platelets
- FFP
- Cryoprecipitate

Interventions

- Massive Transfusion Protocol (MTP)
- Intrauterine tamponade balloon
- Compression suture
- Uterine packing
- Selective artery embolization
- Hysterectomy


Postpartum Hemorrhage
Risk Factors
Over Distended Uterus, Uterine Contractility, Medications
Communication
team
Trauma (Lacerations
Hematoma)
Medications (General Anesthesia, MgSo4, Oxytocin)
Infection
Thrombin (Coagulopathy)
Fluid Volume Replcmt
Monitor VS Bleeding
Tissue (Retained Products)
Assess Atony, Lochia, Clots
Manual Removal/ D&C
Tone (Uterine Atony)
Assess Lochia Bladder
Fundal Massage
Express Clots
Empty Bladder
Medications

STOP, LOOK, AND LISTEN

- Stop—If a woman does not feel well or believes something is wrong, stop and don't assume these are typical complaints
- Look—Conduct an examination
- Listen—Hear the woman's concerns