# EMS Subspecialty Certification Review Course

**Obstetric and Gynecologic Emergencies**

1.3.6 Obstetric and Gynecologic Emergencies, 1.3.6.2 Childbirth, 1.3.6.3 Vaginal Hemorrhage, 1.3.6.4 Ectopic Pregnancy

1.4.2.4 Obstetrics

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## Learning Objectives

Upon the completion of this program participants will be able to:

- Describe peri-natal complications and their management
- Explain normal and high-risk childbirth
- Describe the management of complications of delivery
- Describe the management of post-partum complications

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**FYI: Core Content. . .**

1.3.6 Obstetric and Gynecologic Emergencies

- **1.3.6.1 Perinatal issues**
  - 1.3.6.1.1 Control of seizures in eclampsia
  - 1.3.6.1.2 Placental abruption
  - 1.3.6.1.3 Placenta previa
- **1.3.6.2 Childbirth**
  - 1.3.6.2.1 High risk vs. normal delivery
  - 1.3.6.2.2 Managing home birth catastrophes
  - 1.3.6.2.3 Post-partum hemorrhage
  - 1.3.6.2.4 Breech/shoulder dystocia in the field
  - 1.3.6.2.5 Umbilical cord prolapse
- **1.3.6.3 Vaginal hemorrhage**
  - 1.3.6.3.1 Packing in the field
- **1.3.6.4 Ectopic pregnancy**
  - 1.3.6.4.1 Effect of clinical diagnosis on transport decision


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## Gynecologic Complaints

- Gynecologic complaints in children or pre-teens
  - Consider sexual abuse
- Visual inspection or palpation beneath umbilicus usually deferred, UNLESS pregnant, hx precipitous delivery/urge to push
- Vaginal bleeding
  - Assume ectopic pregnancy in childbearing age with abdominal pain and vaginal bleeding
  - IV access and O2 if ↑HR, ↓BP, or significant tenderness
  - Consider IV Fluid bolus (local protocol dependent)

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## Differential Diagnosis of Vaginal bleeding

- Pregnant, 1st trimester
  - Ectopic pregnancy, threatened miscarriage/abortion, trauma
- Pregnant, 2nd or 3rd trimester
  - Placenta previa, placental abruption, bloody show, trauma
- Unknown pregnancy status
  - Ectopic pregnancy, dysfunctional uterine bleeding, degenerating fibroid, menses, trauma, cancer

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## Physiologic Changes in Pregnancy

- Blood volume increased by >50%
- Baseline heart rate increased by 10%-15%
- Respirations increased by 10%-15%
- Cardiac output increased
- Blood pressure decreased or normal

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*Prepartum Complications*

## Preeclampsia and Eclampsia

- **Preeclampsia WITHOUT severe features**
  - BP readings >140 mmHg Systolic or >90 mmHg diastolic **AND** proteinuria.
- Preeclampsia WITH severe features
  - BP readings > 160 mmHg systolic or 110 mmHg diastolic OR
  - HTN meeting the criteria for preeclampsia with evidence of end organ damage
    - Consider IV labetolol/hydralazine or PO nifedipine
- **Eclampsia** (preeclampsia + new-onset grand mal sz)
  - All should receive magnesium sulfate 4-6 gm over 10-15 min, followed by 2 grams/hour
  - IV/IM benzodiazepines for progression to status epilepticus
  - Airway, monitor respirations, rapid transport

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## Antepartum Complications
## Placental Abruption and Previa

- Commonly associated with bleeding in late 2nd or 3rd trimester
- **Placental Abruption**
  - May be caused by minor trauma
  - Non-trauma cases associated with HTN, smoking, cocaine
  - Classically: Abd pain & vaginal bleeding in late pregnancy
- **Placenta Previa**
  - Classically: Heavy painless bleeding in late pregnancy
  - No digital exam with potential placenta previa

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## Impending Delivery

- All women in active labor: $O_2$ and IV
- If possible, expedite transport for in-hospital delivery
- Steps of Delivery
  - Deliver head
  - Deliver remaining body
  - Double clamp and cut umbilical cord
  - Immediately dry and evaluate baby

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## Peripartum Complications

- **Umbilical Cord Prolapse**
  - Do not push cord back into vagina
  - Wrap cord in moist sterile gauze and insert two sterile gloved fingers into vagina to keep presenting part off pelvic brim
  - Mother in knee-chest position
- **Vaginal Hemorrhage**
  - Leading cause of maternal death
  - DDx: uterine atony, coagulopathies, retained placenta, placenta accreta, uterine inversion, pelvic/vaginal trauma
  - Tx: Fundal massage, large bore IV, O2, TXA (?), expedite transport

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## Peripartum Complications

- **Breech Presentation**
  - Support presenting part and transport
  - Let delivery occur spontaneously if possible
  - When head presents, place 2 fingers as a "V" into vagina to allow neonate to breathe.

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## Peripartum Complications

- **Shoulder Dystocia**
  - *McRoberts Maneuver* – Hyperflex hips against abdomen with mild suprapubic pressure. If ineffective, then...
  - Rotate mother into upright position on hands/knees. If ineffective, then...
  - *Corkscrew Maneuver* – Rotate shoulders
  - Rapid transport as soon as possible

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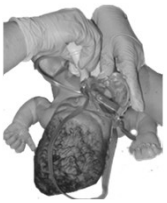
## Post-Delivery Care of the Neonate



- After umbilical cord is clamped and cut:
  - Place neonate supine. Assess airway and suction only if needed
  - Keep warm, dry, stimulate
  - Assess HR and RR (crying?)
  - If HR <100, PPV, SPO2
  - If HR <60, chest compressions, 100% FiO2 via BVM
- Evaluate 1- and 5-minute APGAR Scores

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## APGAR Scoring System

| Sign | 0 | 1 | 2 |
|---|---|---|---|
| **Heart rate** | Absent | Below 100 | Over 100 |
| **Respiratory effort** | Absent | Slow, irregular | Good, crying |
| **Muscle tone** | Flaccid | Some flexion of extremities | Active motion |
| **Reflex irritability** | No response | Grimace | Vigorous cry |
| **Color** | Blue, pale | Body pink, extremities blue | Pink |

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## Postpartum Care

- **Delivery of the Placenta**
  - Placenta normally delivers spontaneously
  - Should not delay transport for delivery of the placenta

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## Pregnant Trauma Patients

- Pregnant patients may have massive blood loss before decompensation
- Minor trauma (falls, minor MVC) can cause placental abruption
  - Transport to hospital
- Transport patient tilted 15$^{o}$ to the LEFT if patient MUST lie flat

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## Pregnant patient in cardiac arrest

- Consider gestational age (>20 weeks) vs. nonpregnant patient
- Primary directive is to maximize maternal resuscitative measures
- Focus on external chest compressions
- Manual displacement of the uterus using a hand to push the upper right upper border of the uterus approximately 1.5 inches from midline
- Medication dosage and defibrillation energy requirements are the same

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## Perimortem Cesarean Section (PMCS)

- PMCS is recommended to be initiated within 4-5 minutes of resuscitation for pregnant patients in cardiac arrest after 20-24 weeks gestation
  - Beneficial for mother's resuscitation
  - Infants have survived after >25 minutes of maternal death
- Do not delay procedure to assess fetal viability
- Vertical abdominal and uterine incisions usually recommended
  - Pfannenstiel (transverse) abdominal incision and transverse uterine incision also reasonable options if more familiar to operator

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## Take-Home Points

- This topic is part of the EMS core content
  - Clinical aspects of EMS = 40% of test questions
- Take home points
  - Most OB/Gyn patients only require uneventful transport
  - Emphasis on transport of laboring patients to the hospital unless signs of imminent delivery
  - All pregnant patients with trauma or hypertension require ED evaluation
  - Perimortem cesarean section recommended in maternal cardiac arrests beyond 20-24 weeks gestation

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