Trauma

- The leading cause of non-obstetrical maternal death
- 1 in 12 pregnant women sustain a significant traumatic injury
- Incidence of trauma in the pregnant patient is 5–10%
- 50% of fetal deaths are due to trauma
- 25%–30% of pregnant women are abused (physically or sexually)
- 10–15% occur in 1st trimester
- 32–40% occur in 2nd trimester
- 50–54% occur in 3rd trimester
- Sources of trauma: MVAs (55%), falls (22%), assault (22%), and burns (1 $)

The primary goal of care for the obstetric trauma patient is to be evaluated for injuries and stabilized (same as the non–obstetric patient).

<table>
<thead>
<tr>
<th>Additional things to consider when completing the Primary Survey of the obstetric patient:</th>
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</thead>
<tbody>
<tr>
<td><strong>Airway</strong></td>
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<td>- The larynx in the pregnant patient is more anterior, edematous, and friable</td>
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<td>- High risk of aspiration (delayed gastric emptying, consider early placement of OG or NG tube to decompress the stomach)</td>
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<td>- Cricoid pressure may be needed</td>
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<td>- Consider early advanced airway (may need smaller ET tube) with pre-oxygenation.</td>
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<td><strong>Breathing</strong></td>
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<td>- Respiratory support may be needed if respirations are ≤12 or ≥25 bpm.</td>
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<td>- Expect increase resistance to BVM</td>
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<td>- Altered location of lung sounds</td>
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<td>- Diaphragm is displaced 4 cm above the normal location</td>
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<td>- If chest tube is needed, the insertion point is usually between the 3rd &amp; 4th intercostals space.</td>
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<td>- Oxygen at 10L/min by non-rebreather if indicated.</td>
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<td>- Pregnant patients have a low oxygen reserve and will become hypoxic faster than the non–pregnant patient</td>
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<td>- Pregnant patients are in a state of chronic compensated respiratory alkalemia</td>
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</tbody>
</table>
### Circulation
- The total circulating blood volume flows through the uteroplacental bed every 8–11 min.
- If the patient is ≥ 20 weeks gestation, the gravid uterus is large enough to cause venocaval compression and can cause supine hypotension.
- Use manual left uterine displacement or a left lateral tilt of 30°.
- If CPR is indicated, hand placement may need to be slightly higher on the chest. Check femoral pulse for efficacy of compressions.
- IV access should be in the upper limbs (above diaphragm).
- For hypovolemia use volume resuscitation first (normal saline or lactated ringers). Consider transfusion if needed. Vasopressors are used as a last resort for the hypovolemic pregnant patient.

### Visual Head-to-Toe Assessment
- Approximate gestation age

### Additional things to consider when completing the Secondary Survey of the obstetric patient:

<table>
<thead>
<tr>
<th>Abdominal Assessment</th>
<th>Uterine Assessment</th>
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<tbody>
<tr>
<td>Pain and tenderness</td>
<td>Uterine activity (frequency, intensity, duration of contractions, resting tone)</td>
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<tr>
<td>o Due to physiologic changes in pregnancy, the patient may have altered pain perception. Pain/tenderness may be absent even if they have sustained significant injuries.</td>
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<tr>
<td>Distention</td>
<td>Fundal Height</td>
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<tr>
<td></td>
<td>Perineum (bleeding, amniotic fluid, direct injury)</td>
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<tr>
<td></td>
<td>Sterile Speculum Exam (done by provider)</td>
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<td></td>
<td>o Bleeding, ROM, dilation, effacement, lacerations or other injury, etc.</td>
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<td></td>
<td>Cervical exam (do not do if vaginal bleeding is noted or if gestational age &lt;36 completed weeks)</td>
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</tbody>
</table>
o dilation, effacement, position, consistency, ruptured amniotic membrane, fetal station/lie/presentation
o *Amniotic fluid that is yellow/green may indicate meconium; cloudy/yellow-tinged/foul odor may indicate infection; bloody may indicate placental separation.*

- Signs & symptoms of placental abruption
  - Frequent uterine contractions, vaginal bleeding, increasing fundal height, EFM changes indicating fetal hypoxia, maternal hemodynamic instability, abdominal tenderness, increase in resting tone
- Pelvic bone (fractures)
- Genitourinary evaluation (indwelling catheter if needed)
- Laboratory evaluation
  - CBC, electrolytes, glucose, clotting analysis, Kleihauer Betke, blood type & Rh, lactic acid, serum alcohol level, urine drug screen, etc.

- Fetal Assessment (maternal assessment and resuscitation takes precedence over fetal assessment)
- FAST (focused assessment with sonography for trauma) scan for intraperitoneal hemorrhage
- OB ultrasound (gestational age, fetal heart movement, location of placenta, amniotic fluid volume)
- Ultrasound is not reliable for ruling out abruption!
- *Mom will shunt blood away from the uterus in order to perfuse the maternal heart, lungs, brain, and kidney.
- Fetal heart rate assessment: changes may be seen in the FHR pattern with fetal or placental injury
- Interventions for intrauterine resuscitation:
  - Displacement of uterus laterally
  - Consider hydration
  - Consider oxygenation
  - Consider tocolytics if indicated
Documentation
- Maternal vital signs
- FHR and contraction pattern
- Physical assessment
- Abnormal findings and interventions
- Patients response to interventions
- Resuscitation measures
- Any tests and their findings
- Communication with other care providers

References: