Obstetrical Terminology

**Antepartum:** The maternal period before delivery.

**Apgar Score:** The evaluation of an infant’s physical condition, usually performed at 1-5 minutes after birth, including heart rate, respiratory effort, muscle tone, reflex irritability and colour.

**Braxton Hicks Contractions: (false labour)** Relatively painless contractions, which may be present throughout the pregnancy, or just prior to labour.

**Gestation:** The period from fertilization of the ovum until birth.

**Grand multipara:** A woman who has had seven deliveries or more.

**Gravida:** The number of all current and past pregnancies.

**Meconium aspiration syndrome:** The inhalation of meconium by the fetus or neonate, which can block air passages and result in failure of the lungs to expand or cause other pulmonary dysfunction.

**Menarche:** The first menstruation and the commencement of the cyclic menstrual function.

**Multigravida:** A woman who has had two or more pregnancies.

**Multipara (MULTIP):** A woman who has had two or more pregnancies resulting in viable offspring.

**Nullipara:** A woman who has never delivered.

**Ovulation:** Release of an ovum or secondary oocyte from the vesicular follicle.

**Para:** The number of past pregnancies that have remained viable to delivery.

**Perinatal:** Occurring at, or near the time of birth.

**Placenta:** A highly vascular fetal – maternal organ, through which the fetus absorbs oxygen, nutrients, and other substances and excretes carbon dioxide and other wastes.

**Postpartum:** The maternal period after delivery.

**Premature Labour:** Onset of labour less than 35 completed weeks of gestation.

**Prenatal:** Existing or occurring before birth.

**Primigravida:** A woman who is pregnant for the first time.

**Primipara (PRIMIP):** A woman who has had one pregnancy that resulted in a fetus that attained a weight of 500 grams or a gestational age of 20 weeks regardless of whether the infant was living at birth.

**Term:** A pregnancy that has reached 40 weeks gestation.

**Trimester:** One of three periods of approximately 3 months into which pregnancy is divided.
Medical Conditions and Disease Processes

Medical conditions and disease processes that may be masked or aggravated by pregnancy include acute appendicitis, acute cholecystitis, hypertension, diabetes, infection, neuromuscular disorders and cardiovascular disease. Two hypertensive disorders, preeclampsia and eclampsia, are specific to pregnancy. Preeclampsia occurs in 5% to 8% of all pregnancies in the United States and is responsible for approximately 25% of maternal deaths and approximately 25% of preterm births.

Pre-eclampsia and Eclampsia

Pre-eclampsia is a disease of unknown origin that primarily affects previously healthy, normotensive primigavidae. The disease occurs after the twentieth week of gestation, often near term. The pathophysiology of pre-eclampsia (which is not reversed until after delivery) is characterized by vasospasm, endothelial cell injury, increased capillary permeability, and activation of the clotting cascade. The signs and symptoms of preeclampsia result from hypoperfusion to the tissue or organs involved. Eclampsia is a characterized by the same signs and symptoms plus seizures or coma.

The criteria for diagnosis of pre-eclampsia are based on the presence of the “classic triad,” which includes hypertension (blood pressure greater than 140/90 mmHg, a rise of 30 mmHg in systolic pressure, or a rise of 15mmHg in diastolic pressure over prepregnancy levels), proteinuria, and edema. Pre-eclampsia is a clinical diagnosis that may be confirmed by postpartum renal biopsy. When the disease is suspected, most patients are hospitalized or confined to bed rest at home until delivery.

References: BLS – PCS section 5, p.150,4it

Third-Trimester Bleeding

Third trimester bleeding occurs in 3% of all pregnancies and is never normal. The Majority of bleeding episodes are a result of abruptio placentae, placenta previa, or uterine rupture. The following table differentiates abruptio placentae, placenta previa and uterine rupture.

Abruptio Placentae

Abruptio placentae is partial or complete detachment of a normally implanted placenta at more than 20 weeks gestation. It occurs in 0.5% to 2% of all pregnancies and is severe enough to result in fetal death in 1 out of 400 cases of abruption. Predisposing factors to abruptio placentae include maternal hypertension, preeclampsia multiparity, trauma, and previous abruption. The common presentation of abruptio placentae is sudden, third-trimester vaginal bleeding and pain. The vaginal bleeding may be minimal and is often out of proportion to the degree of shock, since much of the haemorrhage may be concealed. The more extensive the abruption, the greater the uterine irritability, resulting in a tender abdomen and rigid uterus. Contractions may be present. In its severe form, fetal heart sounds are absent because fetal death is likely.
Placenta Previa

Placenta previa is placental implantation in the lower uterine segment encroaching on or covering the cervical os. It occurs in approximately 1 in 200 to 1 in 400 deliveries; the incidence is higher in preterm births. The condition is characterized by painless bright red bleeding without uterine contraction. The bleeding may occur in repetitive episodes and be slight to moderate, becoming more profuse if active labor ensues. Fetal heart rate is often diminished because of placental insufficiency and hypoxia. Placenta previa is associated with increasing maternal age, multiparity, previous cesarean section, and previous placenta previa episodes. The bleeding is frequently precipitated by recent sexual intercourse.

Uterine Rupture

Uterine rupture is a spontaneous or traumatic rupture of the uterine wall; it may result from re-opening of a previous uterine scar (for example, a previous cesarean section), a prolonged or obstructed labour, or direct trauma. It occurs in approximately in 1 in 1400 deliveries and has a 5% to 15% maternal mortality rate and a 50% fetal mortality rate. Uterine rupture is characterized by sudden abdominal pain described as steady and “tearing” active labor, early signs of shock (complaints of weakness, dizziness, anxiety), and vaginal bleeding, which may not be visible. On examination, the abdominal is usually rigid with diffuse pain, and fetal parts may be easily palpated through the abdominal wall. A previous cesarean scar may be a good indication of the rupture.

References: Appendix 40-1

Obstetrics

Ante-Partum Hemorrhage

<table>
<thead>
<tr>
<th>Signs</th>
<th>Placenta Previa</th>
<th>Placenta Abruptio</th>
<th>Internal-concealed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding from the Vagina</td>
<td>Painless Bright red flow with blood clots.</td>
<td>External – apparent: Blood from the vagina is bright red or dark and clotted.</td>
<td>Little bleeding from vagina.</td>
</tr>
<tr>
<td>Signs of Shock</td>
<td>Compatible with degree of visible bleeding.</td>
<td>Degree of shock is usually compatible with visible vaginal bleeding, but may exceed degree expected.</td>
<td>Signs exceed those expected based on visible vaginal bleeding.</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Absent</td>
<td>Usually present unless the patient is in shock.</td>
<td></td>
</tr>
<tr>
<td>Uterus</td>
<td>Soft, painless, easy to palpate fetal parts.</td>
<td>For concealed abruptio:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Firm ) Abdomen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tender) Tense )</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rigid )</td>
<td></td>
</tr>
<tr>
<td>Contractions</td>
<td>Absent</td>
<td>Tetanic</td>
<td></td>
</tr>
</tbody>
</table>
Management

Prehospital management of a patient with third-trimester bleeding is aimed at preventing shock. No attempt should be made to examine the patient vaginally; doing so may increase hemorrhage and precipitate labour.

Emergency care measures should include the following:

1. Provide adequate airway, ventilatory, and circulatory support as needed (with spinal precautions if indicated)
2. Place patient in left lateral position.
4. Apply a fresh perineal pad and note the time of application to assess bleeding during transportation.
5. Check fundal height and document it for baseline measurement.
6. Closely monitor the patient’s vital signs enroute to the hospital.

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Contractions, which before 30 weeks’ gestation were uncoordinated and of low intensity, begin to steadily increase in intensity and duration; these are termed Braxton-Hicks contractions.

NOTE:

There is a great deal of individual variation in the perception and tolerance of uterine contractions. Some mothers experience relatively painless contractions even with the onset of labour, whereas others are quite uncomfortable from the earlier and less intense Braxton-Hicks contractions. In the former group, delivery may be more imminent than anticipated; members of the latter group may develop “false labour” several days to weeks before term.

Labour begins with a prodromal stage that marks the infant’s descent in the birth canal. The fetal descent is characterized by a relief of pressure in the upper abdomen and a simultaneous increase in pressure in the pelvis. During this stage a mucous plug (sometimes mixed with blood, thus the name bloody show) is expelled from the dilating cervix and discharged from the vagina. The prodromal stage may go unnoticed by the mother.

The first stage of labour begins with the onset of regular contractions and ends with complete dilation of the cervix. The uterine contractions generally occur at 5 to 15 minute intervals and are characterized by cramp like abdominal pains that radiate to the small of the back. As the uterus contracts, the cervix becomes soft and thinned (effaced), and the less muscular segment of the uterus is pulled upward over the presenting part. The first stage usually lasts up to 8 to 12 hours in the primip mother and approximately 6 to 8 hours in the multip mother. In most pregnancies, the amniotic sac ruptures (rupture of membranes) toward the end of the first stage of labour.

The second stage of labour is measured from full dilation of the cervix to delivery of the infant. During the second stage the fetal head enters the birth canal, and the mother’s pain and contractions become more intense and frequent (usually 2 to 3 minutes apart). Often, the mother becomes diaphoretic and tachycardiac during this stage. In addition, she generally experiences an urge to bear down with each contraction, and she may express the need to have a bowel movement. The third stage of labour begins with delivery of the infant and ends when the placenta has been expelled and the uterus has contracted. The length of this stage varies from 5 to 60 minutes.

Reference: Section 5, p.151
Fig. 28-9  Parturition. **A,** The relation of the fetus to the mother. **B,** The fetus moves into the birth canal. **C,** Dilation of the cervix is complete. **D,** The fetus is expelled from the uterus. **E,** The placenta is expelled.

**A, B, C:** First Stage of Labour

**C, D:** Second Stage of Labour

**E:** Third Stage of Labour

Signs and Symptoms of Imminent Delivery

The following signs and symptoms indicate that delivery is imminent and that preparations for childbirth should be made at the scene.

- Regular contractions lasting 45-60 seconds at 1-2 minute intervals. Intervals are measured from the beginning of one contraction to the beginning of the next. If contractions are more than 5 minutes apart, there is generally time to transport the mother to a receiving hospital.
- The mother has an urge to bear down or has a sensation of a bowel movement.
- There is a large amount of bloody show.
- Crowning occurs.
- The mother believes delivery is imminent. If any of these signs and symptoms are present, the EMS crew should prepare for delivery. Delay or restraint of delivery should never be attempted in any fashion. If complications are anticipated or an abnormal delivery occurs, medical control may recommend expedited transport of the patient to a medical facility.

Preparing for Delivery

When preparing for delivery in the prehospital setting, the paramedic should attempt to provide an area of privacy. The mother should be positioned on a bed, stretcher, or table that has a surface long enough to project beyond the mother’s vagina. The delivery area should be as clean as possible and covered with absorbent material to guard against staining and contamination by blood and fecal material. The mother should be placed on her back with her knees flexed and widely separated (or in another position preferred by the mother), and the vaginal area should be draped appropriately. If delivery occurs in an automobile, the mother should be instructed to lie on her back across the seat with one leg flexed on the seat and the other leg resting on the floorboard. If available, a pillow or blanket should be placed beneath the mother’s buttocks to facilitate delivery of the infant’s head. The mother’s vital signs should be evaluated for baseline measurements, and fetal heart rate should be monitored for signs of fetal distress. Per local protocol and medical control, the paramedic should consider maternal oxygen administration.

The paramedic should coach the mother to bear down and push during contractions and to rest between contractions to conserve strength. If the mother finds it difficult to refrain from pushing, she should be encouraged to breathe deeply or “pant” through her mouth between contractions to prevent glottic closure. Deep breathing and panting help decrease the force in bearing down and promote rest.

Reference: Section 5, p.153

Premature Labour and Delivery

Management

As for the Emergency Delivery Standard, with the following specifics:

1. Prepare for a precipitous delivery and possible breech presentation.
2. Prepare for full neonatal resuscitation (CPR).
3. Attempt to deliver the head in a very slow, controlled fashion.
4. Handle the infant with extreme care and gentleness.
5. Initiate immediate warming (blanket, plastic wrap, silver blanket) and resuscitation.
Guidelines

Infants born between 20 – 25 weeks of gestation may be stillborn or die quickly. Initiate immediate resuscitation and rapid transport. Attempt to contact the receiving or base hospital physician as soon as possible for further direction. Reassure the mother that everything possible is being done for the baby, but do not give false hope.

If the infant is obviously dead – e.g. foul body odor, skin blistered, skin/tissue Deteriorated/discoloured, head soft do not resuscitate. Advise the mother as gently as possible. Allow her to see the infant if she so desires. Provide emotional support.

Reference: Section 5, p. 166

APGAR Score

The Apgar score is an objective method of evaluating the newborn’s condition. It is generally performed at 1 minute and again at 5 minutes of age. However, assessment of the infant should begin immediately at birth. If the infant requires interventions based on assessment of respirations, heart rate, or colour, they should be instituted promptly. Such interventions must not be delayed for an Apgar score. A delay could be of critical importance, particularly in the severely asphyxiated infant.

While the Apgar score is not useful as a basis for decision-making at the beginning of resuscitation, it may be helpful for assessing the infant’s condition and effectiveness of the resuscitative effort. Thus, an Apgar score should be assigned at 1 and 5 minutes of age when possible. If the 5 minute Apgar score is less than 7, additional scores should be obtained every 5 minutes for up to 20 minutes or until two successive scores are 8 or greater.

Reference: Appendix 41

APGAR Scoring Chart

<table>
<thead>
<tr>
<th>Assessment Parameters</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Appearance</td>
<td>Blue or Pale</td>
<td>Body Pink, extremities blue</td>
<td>Entirely pink</td>
</tr>
<tr>
<td>P: Pulse</td>
<td>Absent</td>
<td>&lt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td>G: Grimace (reflex irritability)</td>
<td>Absent</td>
<td>Grimace</td>
<td>Cough, cry or sneeze</td>
</tr>
<tr>
<td>A: Activity (muscle tone)</td>
<td>Limp</td>
<td>Some extremity flexion</td>
<td>Active motion</td>
</tr>
<tr>
<td>R: Respiration</td>
<td>Absent</td>
<td>Weak cry, hypoventilation</td>
<td>Strong Cry</td>
</tr>
</tbody>
</table>

TOTAL SCORE: 0-10 (the lower the score, the more depressed the infant)
- 7 - 10 = OK;
- 4 – 6 = moderately depressed;
- 0 – 3 = severely depressed.

Note: Any resuscitative effort should be based on HR(pulse), respiratory activity and colour, rather than the entire APGAR score.
If the initial score is <7, record every 5 minutes for a total of 20 minutes.
Performance Checklist
Of an Emergency Delivery

Name _______________  EHS # __________  Date __________

Situation:
While preparing for the delivery the labour intensifies until you observe crowning. Demonstrate how you would manage this delivery:

1. Deliver the head slowly in a controlled fashion
   - One hand on the infant's head, with other hand exerting steady, gently upward pressure on the lower end of the perineum

2. Check for nuchal cord
   - One loop: attempt to slip cord around infant's shoulder
   - Difficulty or more than one loop: clamp cord in two places 2-3” apart, cut the cord between the clamps

3. Wipe and suction the neonate's mouth and nose when visible
   - Be aware of meconium staining or presence

4. Assist with delivery of the neonate
   - Allow head rotation to occur spontaneously, without interference
   - Support head and neck with one hand, use other hand to guide delivery of the body
   - Shoulders: apply gently downward pressure on the head to deliver anterior shoulder, then upward to deliver posterior shoulder (never pull on the head and neck)

5. Repositions the patient having problems delivering the shoulders
   - Have patient flex her hips and knees, and tuck the legs up close to the abdominal wall
   - Have the patient straighten her legs and bring them straight up towards her head

6. Begins full assessment and treatment of neonate and mother

Evaluated by ___________________________  EHS # ___________________________
Situation:
Upon arriving at the house you find a patient who is in active labour. While assessing her you notice the presentation of a foot. Demonstrate how you would manage this delivery:

1. **Allow the delivery to occur spontaneously**
   - Support the infant’s body and legs as they deliver
   - Elevate the legs with your free hand, or let them dangle

2. **Assess and monitor cord pulse when visible**
   - If absent: elevate infant’s body or reposition the mother

3. **Assist with the delivery of the neonate’s head**
   - With visibility of the nape of the neck, gently lift and hold the infant upwards and backwards by the legs
   - Avoid hyperextension of the neck
   - Allow head to deliver spontaneously (do not pull)

4. **Monitor airway (head does not deliver within 3 minutes)**
   - Support the infant’s body, with their legs straddling your lower arm
   - Create an airway: using the same hand, palm up, make a “V” with your fingers on either side of the infant’s nose and mouth, pushing away the wall of the vagina

5. **Assist with delivery and initiate transport (head does not deliver within 3 minutes of creating an airway)**
   - Slide free hand into upper vagina over the infant’s occiput and exert gentle downward pressure to flex the head
   - Alternatively, place free hand slightly above and just behind the maternal symphysis pubis, and exert steady downward pressure with the heel of the hand
   - Initiate rapid transport while maintaining an airway

6. **Monitor both patients and update receiving facility**
Situation:
Upon arriving at the house you find a patient who is in active labour. When assessing the patient you find the presentation of a prolapsed cord. Demonstrate how you would manage this delivery:

1. **Administer high flow O\textsubscript{2} and initiate rapid transport**
   - Exceptions:
     - Crowning is present
     - Delivery appears imminent

2. **Assess and monitor cord pulse when visible**
   - If pulse is absent or weak:
     - Attempt to relieve cord compression with two gloved fingers
       (only insert fingers if presenting part is visible)
     - Reposition mother
     - Reassess cord pulse with every repositioning

3. **Management of the umbilical cord**
   - Never pull the cord or try to reinsert into the vagina, keep handling to a minimum
   - Wrap visible portion with sterile gauze moistened with saline, cover with dry gauze

4. **Delay the delivery as long as possible**
   - Encourage the mother to “pant and blow”
   - Discourage the urge to push
   - Find an acceptable position of comfort and be supportive of the patient
   - If the cord appears to be on the right side of the vagina, place patient in left lateral position with knees/hips fully flexed or supine with right buttock elevated. (Reverse positioning if cord is on left side of the vagina.)

5. **Prepare for emergency delivery**
   - Monitor patient and cord every five minutes, watching for increase or onset of contraction
   - Prepare for an emergency delivery
   - Notify receiving hospital of possible complicated delivery

Evaluated by ___________________________  EHS #____________________