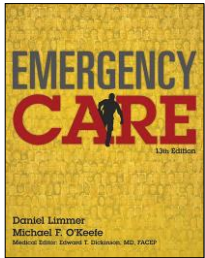


Emergency Care

THIRTEENTH EDITION



CHAPTER 32

Obstetric and Gynecologic Emergencies

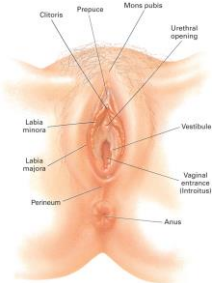
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Anatomy and Physiology

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External Genitalia

- Labia
- Perineum
- Mons pubis



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Internal Genitalia

- The vagina
 - Birth canal
 - Smooth muscle
- The Ovaries
 - Responsible for producing ova (eggs)
- Fallopian Tubes
 - Where fertilization usually occurs
 - Ectopic pregnancy can occur if the ovum implants in the fallopian tubes

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Internal Genitalia

- The uterus
 - Muscular, hollow organ located along midline in women's lower abdominal quadrants
 - Intended site for fertilized egg to implant and develop into a fetus
 - Can stretch and grow as fetus gets larger

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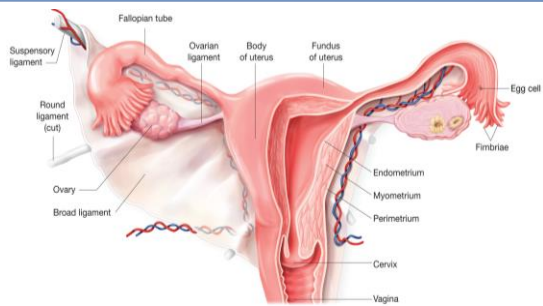
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Internal Genitalia

- The Cervix
 - Muscular ring separating uterus and vagina
 - In labor, cervix thins and dilates to allow the uterus to contract and push the fetus out through the vagina

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Internal Female Genitalia



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The Female Reproductive Cycle

- Menstruation
 - Stimulated by estrogen and progesterone
 - Ovaries release ovum.
 - Uterus walls thicken.
 - Fallopian tubes move egg (peristalsis).
 - Uterine walls expelled
 - Bleeding three to five days

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Fertilization

- Sperm reaches ovum.
- Ovum becomes embryo.
- Embryo implants in uterus.
- Fetal stage begins (8 weeks)

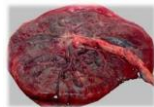
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Physiologic Changes in Pregnancy

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Changes in the Reproductive System

- Nine months of pregnancy
 - Three 3-month trimesters
- Placenta
 - Organ of maternal and fetal tissues
 - Exchange area between mother and fetus
 - Oxygen
 - Nutrients



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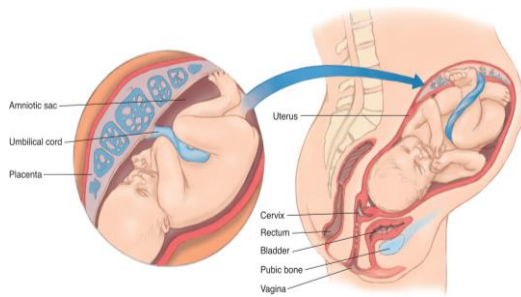
Changes in the Reproductive System

- Umbilical cord
 - Circulates blood
 - Expelled with delivery of baby, placenta
- Amniotic sac
 - Fluid that allows fetus to float, cushions fetus, and maintains constant fetal body temperature



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Changes in the Reproductive System



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Other Physiologic Changes in Pregnancy

- Cardiovascular system
 - Increased blood volume, cardiac output, and heart rate
- Respiratory system
 - Increased oxygen demand and consumption
- Gastrointestinal system
 - Nausea and vomiting
 - Slowed digestion

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Other Physiologic Changes in Pregnancy

- Hormones released with pregnancy
 - Ligaments made more elastic, thus more vulnerable to injury
- Additional weight affecting posture, possibly leading to back pain and balance issues
- Preexisting medical conditions

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Overall Physiologic Changes



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Supine Hypotensive Syndrome

- Placenta, infant, and amniotic fluid total twenty to twenty-four lbs.
- When supine, mass compresses inferior vena cava.
- Cardiac output decreases.
- Dizziness and drop in blood pressure



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Think About It

- How does the development of the fetus affect other body systems?

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Labor and Delivery

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The Stages of Labor

First stage:
beginning of contractions to full cervical dilation



Second stage:
baby enters birth canal and is born



Third stage:
delivery of the placenta



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First Stage – Dilation Period

- Braxton-Hicks contractions
 - Irregular, not sustained, and not indicative of impending delivery
- Lightening
 - Fetus's movement from high in the abdomen down toward birth canal
- Contractions of the uterus produce normal labor pains.

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First Stage

- Characteristics of labor pains
 - Contraction time, or duration
 - Contraction interval, or frequency
 - Delivery imminent = Last 30 seconds to 1 minute and are 2–3 minutes apart.
 - Breaking of amniotic sac
 - Fluid with meconium staining indicates that there may be fetal distress.

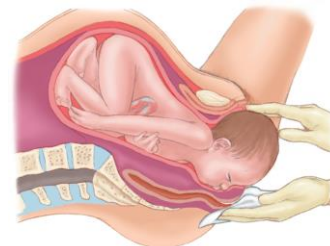
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Second Stage

- Full dilation of cervix
- Contractions increasingly frequent
- Labor pain severe
- Mother feels urge to push or move bowels.
- EMT will have to decide whether to transport the patient, or keep her where she is and prepare to assist with delivery.

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Second Stage



Support the infant's head.

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Third Stage

- After baby's birth, contractions resume until placenta is delivered.
- Placenta detaches from the wall of the uterus
- Usually lasts ten to twenty minutes



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Think About It

- Why is childbirth such an exhausting ordeal for the mother?

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Assisting with Childbirth Video



Click on the screenshot to view a video on the subject of childbirth.

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Patient Assessment

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Assessing the Woman in Labor

- Is delivery imminent?
- Name, age, expected due date?
- First pregnancy?
- Prenatal care?
- When did labor pains start?
- Has her water broken?

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Assessing the Woman in Labor

- Patient feeling the urge to push or to move her bowels?
- Examine for crowning.
- Feel for uterine contractions.
- Take vital signs.



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Assessing the Woman in Labor

- Findings that might indicate the need for neonatal resuscitation
 - No prior prenatal care
 - Premature delivery
 - Labor induced by trauma
 - Multiple births
 - History of pregnancy problems (placenta previa, breech presentation)
 - Labor induced by drug use (especially narcotics)
 - Meconium staining when water breaks

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Think About It

- How can you get necessary information from a patient who may be having uncontrolled pain from contractions?

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Normal Childbirth

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Role of the EMT

- EMTs do not deliver babies; mothers do.
- Primary role is to determine whether the delivery will occur on scene and if so, to assist mother as she delivers her child

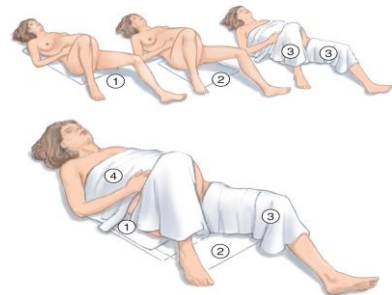
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Preparing the Mother for Delivery

- Control scene.
- Wear proper PPE.
- Place mother on bed, floor, or ambulance stretcher.
- Remove clothing obstructing vagina.
- Position assistant and OB kit.
- If possible, make environment as warm as possible.

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Preparing Mother for Delivery



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Preparing the OB Kit



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Preparing the Mother for Delivery

- Off-duty delivery supplies
 - Clean sheets and towels
 - Heavy, flat twine or new shoelaces
 - Towel or plastic bag (for placenta)
 - Clean, unused rubber gloves and eye protection
 - Head covering for the baby

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Think About It

- Are there legal/moral/ethical concerns for an off-duty delivery?

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Delivering the Baby

- Position for constant view of the vaginal opening.
- Be prepared for the patient to experience discomfort.
- Provide emotional support.
- Communicate with patient through contractions.

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Delivering the Baby

- Assisting with a normal delivery
 - Keep someone at mother's head.
 - Position gloved hands at vaginal opening when baby's head starts to appear.
 - Place hand on baby's head as it bulges out to prevent sudden uncontrolled expulsion.
 - Place one hand below baby's head as it delivers.

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Delivering the Baby

- Assisting with a normal delivery
 - If amniotic sac has not broken at time of delivery, use your finger to puncture the membrane.
 - Once the head delivers, check to see if the umbilical cord is wrapped around the baby's neck.
 - Help deliver the shoulders.

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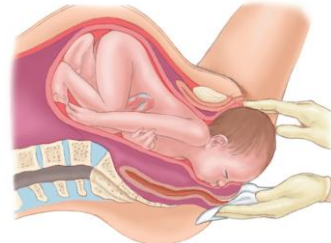
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Delivering the Baby

- Assisting with a normal delivery
 - Support the baby during the entire process.
 - Assess the airway.
 - Use syringe to suction mouth and nose if necessary.
 - Note exact time of birth.

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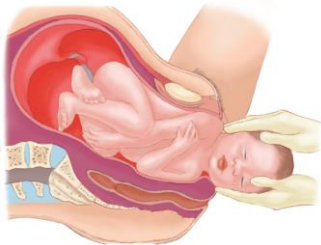
Delivering the Baby



First Take Standard Precautions.
1. Support the infant's head. (Assist the mother by supporting the baby throughout the birth process.)

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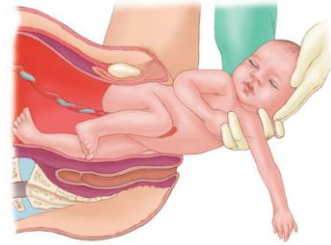
Delivering the Baby



2. Aid in the birth of the upper shoulder.

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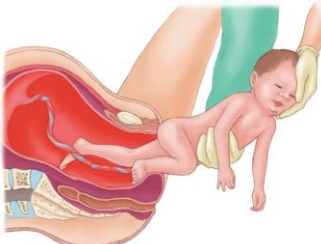
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3. Support the trunk.

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Delivering the Baby



4. Support the pelvis and lower extremities.

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The Neonate

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Assessing the Neonate

- As soon as they are born
- Protocol usually calls for noting ease of breathing, heart rate, crying, movement, and skin color.
- APGAR score
 - Does not guide resuscitation efforts
 - Based on Apppearance, Pulse, Grimace, Activity, and Respiratory effort.

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Apgar Scoring System

Indicator		0 Points	1 Point	2 Points
A	Activity (muscle tone)	Absent	Flexed limbs	Active
P	Pulse	Absent	< 100 BPM	> 100 BPM
G	Grimace (reflex irritability)	Flaccid	Minimal response to stimulation	Prompt response to stimulation
A	Appearance (skin color)	Blue/Pale	Pink body Blue extremities	Pink
R	Respiration	Absent	Slow and irregular	Vigorous cry

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Caring for the Neonate

- It may be necessary to stimulate the baby
- Keeping the baby warm
 - Heat retention is high priority.
 - Dry baby and discard wet blankets.
 - Wrap baby in a dry blanket.
 - Infant swaddler or "space blanket"
 - Cover head.
 - Encourage



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Caring for the Neonate

- Cutting the umbilical cord (Delayed)
 - Circumstances necessitating cutting
 - If cord wrapped around baby's neck and cannot be slipped over head
 - If attachment impedes resuscitation effort
 - If attachment interferes with urgent need for transport of mother or baby
 - If protocol requires it

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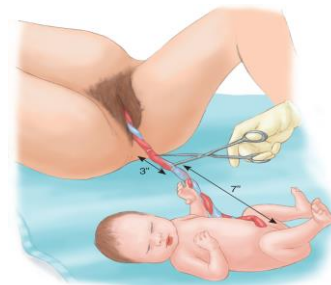
Caring for the Neonate

- Cutting the umbilical cord
 - Steps
 - Keep infant warm
 - Use sterile clamps or umbilical tape.
 - Apply one clamp about 10 inches from the baby.
 - Place a second clamp about 7 inches from the baby.

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Cutting the Umbilical Cord



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Caring for the Neonate

- Cutting the umbilical cord
 - Steps
 - Cut the cord between clamps using surgical scissors.
 - Be careful when moving the baby so no trauma is brought to the clamped cord.
 - Place the baby on the mother's abdomen after the birth process.

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Think About It

- Why is it so important to stimulate the baby?

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Neonatal Resuscitation

- Provide warmth and assess baby's airway.
- Establish that the baby is **breathing**.
 - Evaluate respirations, heart rate, and muscle tone.
 - If shallow, slow, gasping, or absent, provide positive pressure ventilation at a rate of 40 to 60 per minute.

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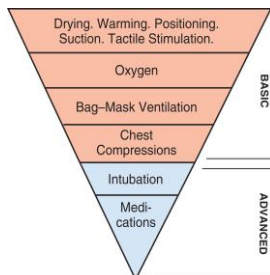
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Neonatal Resuscitation

- Assess infant's **heart rate**.
 - If less than 100 bpm, provide above artificial ventilations.
 - If less than 60 bpm, initiate chest compressions at 120 compressions per minute.
- If adequate respirations and a pulse greater than 100 bpm, reassess the airway.

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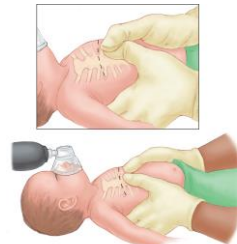
Neonatal Resuscitation



Inverted pyramid of neonatal resuscitation.

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Neonatal Resuscitation



Deliver chest compressions midsternum with two thumbs, at a depth of one-third to one-half depth of the chest. For a very small infant (inset), the thumbs may be overlapped.

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Think About It

- What are the first steps in neonatal resuscitation?
- What is central cyanosis?
- When is artificial ventilation required, and what is the rate of artificial ventilations?

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Care After Delivery

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Caring for the Mother

- Mother at risk for serious bleeding, infection, emboli
- Deliver placenta.
- Control vaginal bleeding.
- Comfort.



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Delivering the Placenta

- Afterbirth
 - Placenta with umbilical cord, amniotic sac membranes, and tissues lining uterus
- Placental delivery starts with labor pains.
- May take thirty minutes or longer
- Begin transport in twenty minutes.

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Controlling Vaginal Bleeding

Control Bleeding



After delivery of the placenta, massage the uterus to help control vaginal bleeding.

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Controlling Vaginal Bleeding after Birth

- Place a sanitary napkin over the mother's vaginal opening. Do not place anything in the vagina.
- Have the mother lower her legs and keep, but not squeeze, them together.
- Massaging the uterus will help it contract, which controls the bleeding.
- Encourage the mother to begin nursing the baby.

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Providing Comfort to the Mother

- Take vital signs frequently.
- Acts of kindness will be appreciated and remembered.
- Wipe face and hands with damp washcloth.
- Replace blood-soaked sheets and blankets.

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Think About It

- What are your responsibilities in caring for the mother?
- What is considered to be the usual blood loss?
- Give examples of acts of kindness toward the mother.

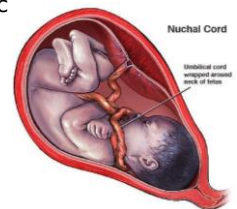
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Childbirth Complications

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Complications of Delivery

- Common complications
 - Cord around the neck
 - Unbroken amniotic sac
 - Infants who need encouragement to breathe



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Breech Presentation

- Most common abnormal delivery
- Buttocks- or both-legs-first delivery
- Risk of birth trauma to baby is high.
- Meconium staining often occurs.



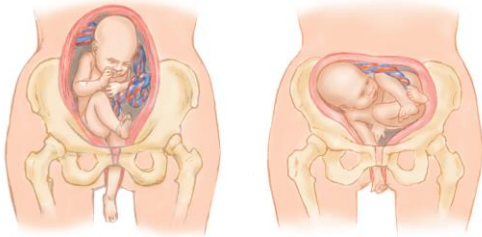
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Limb Presentation

- A limb of infant protrudes from the vagina.
- Commonly a foot when baby in breech position.
- Rapid transport essential
 - Cannot be delivered in a prehospital setting

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Limb Presentation



Limb presentation.

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Prolapsed Umbilical Cord

- When umbilical cord presents first and becomes squeezed between vaginal wall and baby's head
- Oxygen supply to the baby may be totally interrupted.
- Life-threatening condition

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Prolapsed Umbilical Cord

- Elevate hips, administer oxygen, and keep mother warm
- Keep baby's head away from cord
- Do not attempt to push cord back
- Wrap cord in sterile moist towel
- Transport mother to hospital, continuing pressure on baby's head



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Multiple Birth

- Have appropriate resources.
- Clamp or tie cord of first baby.
- Assist with delivery of second baby.
- Placenta and cord care are same as single delivery.
- Keep babies and mother warm.

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Premature Birth

- Keep baby warm.
- Keep airway clear.
- Provide ventilations and/or chest compressions.
- Watch umbilical cord for bleeding.
- Avoid contamination.
- Call ahead to emergency department.

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Meconium

- Stains amniotic fluid greenish or brownish yellow in color
- Do not stimulate infant before suctioning.
- Suction mouth, then nose.
- Maintain open airway.
- Provide ventilations and/or chest compressions.
- Transport as soon as possible.



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Think About It

- Why is it important to have your partner or another person (birthing coach or other adult acceptable to the mother) observing as you help the mother through childbirth?

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Emergencies in Pregnancy

- Excessive prebirth bleeding
- Ectopic pregnancy
- Seizures in pregnancy
- Miscarriage and abortion
- Trauma in pregnancy
- Stillbirths
- Cardiac arrest of pregnant woman

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Excessive Prebirth Bleeding

- Main sign is unusually profuse bleeding.
- Abdominal pain may or may not be felt.
- Assess for signs of shock.
- Provide high-concentration oxygen and transport.
- Place sanitary napkin over vagina.
- Save all tissue that is passed.

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Ectopic Pregnancy

- Be alert for:
 - Acute abdominal pain, can be referred to the shoulder
 - Vaginal bleeding
 - Rapid and weak pulse
 - Low blood pressure
 - Absent menstrual period

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Seizures in Pregnancy

- Existing preeclampsia
- Elevated blood pressure
- Excessive weight gain
- Excessive swelling to face, ankles, hands, and feet
- Altered mental status, headache, or other unusual neurologic findings

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Miscarriage and Abortion

- Spontaneous or induced
- Cramping, abdominal pains
- Bleeding ranging from moderate to severe
- Noticeable discharge of tissue and blood from vagina

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Trauma in Pregnancy

- Pregnant patient's pulse 10 to 15 beats per minute faster than non-pregnant women.
- Blood loss may be 30 to 35 percent before signs/symptoms appear.
- Ask patient if she received blows to abdomen.

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Stillbirths

- Do not resuscitate if it is obvious the baby died some time before birth.
- Provide full resuscitation measures if baby is born in pulmonary or cardiac arrest.
- Prepare to provide life support.
- Provide emotional support for family.

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Cardiac Arrest of Pregnant Woman

- Chance to save unborn child
- Begin CPR on mother immediately.
 - Displace uterus if more than 20 weeks
 - Position hands 1 to 2 inches higher on sternum to make up for shifting of the heart by large uterus.
- Continue CPR until emergency cesarean section can be performed or you are relieved in emergency department.

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Information About Preeclampsia Video



Click on the screenshot to view a video on the subject of preeclampsia.

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Ectopic Pregnancy Animation



Other ectopic implantation sites include the ovary, abdominal cavity, and cervix.

Click on the screenshot to view an animation on the subject of ectopic pregnancy.

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Gynecological Emergencies

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Vaginal Bleeding

- Treat as potentially life-threatening.
- Check for associated abdominal pain.
- Monitor for hypovolemic shock.

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Trauma to External Genitalia

- When sizing up the scene, observe for mechanisms of injury.
- During primary assessment, look for signs of severe blood loss and shock.
- Consider additional internal injuries.

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Sexual Assault

- Treat immediate life threats.
- Do not disturb potential criminal evidence.
- Examine genitals only if severe bleeding is present.
- Discourage bathing, voiding, or cleansing wounds.
- Fulfill mandated reporting requirements.

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Think About It

- When arriving at a crime scene, what are the key things to keep in mind as you respond?

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Chapter Review

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Chapter Review

- Although birth is a natural process that usually takes place without complications, the involvement of EMS usually indicates something unusual has happened.
- The EMT's role at a birth is generally to provide reassurance and to assist the mother in the delivery of her baby.

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Chapter Review

- During the normal delivery, the EMT will evaluate the mother to determine if there should be immediate transport or if birth is imminent and will take place at the scene.
- If birth is to take place at the scene, have equipment ready and appropriate resources on hand. Always be prepared for resuscitation.

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Chapter Review

- Complications of delivery are a true emergency. An EMT must be prepared to initiate rapid transport in the case of breech presentation, prolapsed umbilical cord, limb presentation, premature birth, or meconium staining of the amniotic fluid.

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Chapter Review

- There may also be predelivery emergencies or emergencies associated with pregnancy (such as excessive bleeding, ectopic pregnancy, seizures, abortion, or trauma to the pregnant mother) that the EMT must be prepared to treat.

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Chapter Review

- Stillbirth, death of the mother, and sexual assault are difficult emergencies the EMT is occasionally called upon to manage. Emotional care for these issues may be as important as medical care.

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Remember

- Female reproductive organs present new anatomy and specific potential emergencies. EMTs should recognize the different anatomy and be prepared to address reproductive emergencies.
- A growing fetus creates massive change to the mother's body. All systems undergo major alterations.

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Remember

- Assessment of the woman in labor is designed to predict imminent delivery and to recognize likely resuscitation.
- The urge to push and crowning indicate imminent delivery. Transport typically should be deferred for a home delivery.

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Remember

- Lack of prenatal care, premature labor, multiple gestation, and underlying conditions indicate a likelihood of neonatal resuscitation.
- Childbirth requires a high level of personal protective equipment.

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Remember

- The most important aspect of care for a neonate is keeping the baby warm. Resuscitation may be indicated by assessing breathing and heart rate.
- After delivery, there are two patients to care for: the infant and the mother.

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Remember

- EMTs should be familiar with the pathophysiology and emergency treatment of the various complications of childbirth.
- Care of the sexual assault patient must include medical, legal, and psychological considerations.

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Questions to Consider

- What is the difference between abruptio placenta and placenta previa?
- How do you care for a prolapsed cord?
- What do you do if the bag of water is still intact during delivery?

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Critical Thinking

- You are called to a pregnant woman in labor. During your evaluation you find that it is the woman's first pregnancy, the baby's head is not crowning, and contractions are 10 minutes apart.

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Critical Thinking

- You ask the mother if she feels the need to move her bowels, and she says no. Do you prepare for delivery at the scene? Or do you transport the mother to the hospital?

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