

**UNIT TERMINAL OBJECTIVE**

5-14 At the completion of this unit, the paramedic student will be able to apply an understanding of the anatomy and physiology of the female reproductive system to the assessment and management of a patient experiencing normal or abnormal labor.

**COGNITIVE OBJECTIVES**

At the completion of this unit, the paramedic student will be able to:

- 5-14.1 Review the anatomic structures and physiology of the reproductive system. (C-1)
- 5-14.2 Identify the normal events of pregnancy. (C-1)
- 5-14.3 Describe how to assess an obstetrical patient. (C-1)
- 5-14.4 Identify the stages of labor and the paramedic's role in each stage. (C-1)
- 5-14.5 Differentiate between normal and abnormal delivery. (C-3)
- 5-14.6 Identify and describe complications associated with pregnancy and delivery. (C-1)
- 5-14.7 Identify predelivery emergencies. (C-1)
- 5-14.8 State indications of an imminent delivery. (C-1)
- 5-14.9 Explain the use of the contents of an obstetrics kit. (C-2)
- 5-14.10 Differentiate the management of a patient with predelivery emergencies from a normal delivery. (C-3)
- 5-14.11 State the steps in the predelivery preparation of the mother. (C-1)
- 5-14.12 Establish the relationship between body substance isolation and childbirth. (C-3)
- 5-14.13 State the steps to assist in the delivery of a newborn. (C-1)
- 5-14.14 Describe how to care for the newborn. (C-1)
- 5-14.15 Describe how and when to cut the umbilical cord. (C-1)
- 5-14.16 Discuss the steps in the delivery of the placenta. (C-1)
- 5-14.17 Describe the management of the mother post-delivery. (C-1)
- 5-14.18 Summarize neonatal resuscitation procedures. (C-1)
- 5-14.19 Describe the procedures for handling abnormal deliveries. (C-1)
- 5-14.20 Describe the procedures for handling complications of pregnancy. (C-1)
- 5-14.21 Describe the procedures for handling maternal complications of labor. (C-1)
- 5-14.22 Describe special considerations when meconium is present in amniotic fluid or during delivery. (C-1)
- 5-14.23 Describe special considerations of a premature baby. (C-1)

**AFFECTIVE OBJECTIVES**

At the completion of this unit, the paramedic student will be able to:

- 5-14.24 Advocate the need for treating two patients (mother and baby). (A-2)
- 5-14.25 Value the importance of maintaining a patient's modesty and privacy during assessment and management. (A-2)
- 5-14.26 Serve as a role model for other EMS providers when discussing or performing the steps of childbirth. (A-3)

**PSYCHOMOTOR OBJECTIVES**

At the completion of this unit, the paramedic student will be able to:

- 5-14.27 Demonstrate how to assess an obstetric patient. (P-2)
- 5-14.28 Demonstrate how to provide care for a patient with: (P-2)
  - a. Excessive vaginal bleeding
  - b. Abdominal pain
  - c. Hypertensive crisis
- 5-14.29 Demonstrate how to prepare the obstetric patient for delivery. (P-2)

- 5-14.30 Demonstrate how to assist in the normal cephalic delivery of the fetus. (P-2)
- 5-14.31 Demonstrate how to deliver the placenta. (P-2)
- 5-14.32 Demonstrate how to provide post-delivery care of the mother. (P-2)
- 5-14.33 Demonstrate how to assist with abnormal deliveries. (P-2)
- 5-14.34 Demonstrate how to care for the mother with delivery complications. (P-2)



2. Umbilical cord
    - a. Connects placenta to fetus
    - b. Contains two arteries and one vein
  3. Amniotic sac and fluid
    - a. Membrane surrounding fetus
    - b. Fluid originates from fetal sources - urine, secretions
    - c. Between 500 and 1000 ccs of fluid after 20 weeks
    - d. Rupture of the membrane produces watery discharge
- C. Fetal growth process
1. End of 3rd month
    - a. Sex may be distinguished
    - b. Heart is beating
    - c. Every structure found at birth is present
  2. End of 5th month
    - a. Fetal heart tones can be detected
    - b. Fetal movement may be felt by the mother
  3. End of 6th month
    - a. May be capable of survival if born prematurely
  4. Approximately middle of 10th month
    - a. Considered to have reached full term
    - b. Expected date of confinement (EDC)
- D. Obstetric terminology
1. Antepartum - before delivery
  2. Postpartum - after delivery
  3. Prenatal - existing or occurring before birth
  4. Natal - connected with birth
  5. Gravida - number of pregnancies
  6. Para - number of pregnancies carried to full term
  7. Primigravida - a woman who is pregnant for the first time
  8. Primipara - a woman who has given birth to her first child
  9. Multiparous - a woman who has given birth multiple times
  10. Gestation - period of time for intrauterine fetal development

### III. General assessment of the obstetric patient

- A. Initial assessment
- B. History of present illness
  1. SAMPLE
    - a. Pertinent medical history
      - (1) Diabetes
      - (2) Heart disease
      - (3) Hypertension/ hypotension
      - (4) Seizures
  2. Current health of patient
    - a. Pre-existing conditions
    - b. Prenatal care
      - (1) None
      - (2) Physician
      - (3) Nurse midwife
- C. Obstetrical history
  1. Length of gestation

- 2. Primipara or multiparous
  - 3. Previous cesarean sections
  - 4. Previous gynecologic or obstetric complications
  - 5. Contractions
  - 6. Patient states that "the baby is coming"
  - 7. Anticipating normal delivery (versus multiple births, etc.)
  - 8. Pain
    - a. OPQRST
  - 9. Vaginal bleeding
    - a. Presence
    - b. Amount
    - c. Color
    - d. Duration
  - 10. Vaginal discharge
    - a. Presence
    - b. Amount
    - c. Color
    - d. Duration
- D. Physical examination
- 1. Comforting attitude and approach
    - a. Protect patient modesty
    - b. Maintain privacy
    - c. Be considerate of reasons for patient discomfort
  - 2. Recognition of pregnancy
    - a. Breast tenderness
    - b. Urinary frequency
    - c. Amenorrhea
    - d. Nausea, vomiting (morning sickness)
    - e. Uterine
  - 3. Evaluating uterine size
    - a. Between weeks 12 and 16
      - (1) Visually and by palpation to be above the symphysis pubis
    - b. 20 weeks
      - (1) At the level of the umbilicus
    - c. At term
      - (1) Near the xiphoid process
  - 4. Presence of fetal movements
    - a. By observation
    - b. By questioning the patient
  - 5. Presence of fetal heart tones
    - a. Audible at approximately the 20th week
    - b. May be detected earlier with fetal doppler
    - c. Normal rate 120 to 160 beats per minute
  - 6. Vital signs
    - a. Consider orthostatic
  - 7. Genital inspection
    - a. When indicated
    - b. Visually inspect for crowning and/ or vaginal bleeding

IV. General management of the obstetric patient



- (2) (a) Uterus completely evacuates fetus, placenta, and decidual lining
- (2) Incomplete
  - (a) Some placental tissue remaining in uterus after expulsion of fetus
- (3) Spontaneous
  - (a) Occur before 20th week, due to maternal or ovular defects
- (4) Criminal
  - (a) Intentional ending of pregnancy under any condition not allowed by law
- (5) Therapeutic
  - (a) End pregnancy as thought necessary by a physician
- (6) Threatened
  - (a) Vaginal bleeding during first half of pregnancy
- (7) Inevitable
  - (a) Severe cramping and cervix effacement and dilation
  - (b) Attempts to maintain pregnancy are useless; changes are irreversible
- b. Incidence
  - (1) Assume during first and second trimester of known pregnancy
- c. Specific assessment findings
  - (1) Additional history
    - (a) Statement that she has recently passed tissue vaginally
    - (b) Complaint of abdominal pain and cramping
    - (c) History of similar events
  - (2) Additional physical examination
    - (a) Evaluate impending shock - check orthostatic vital signs
    - (b) Presence and volume of vaginal blood
    - (c) Presence of tissue or large clots
- d. Additional management
  - (1) Collect and transport any passed tissue, if possible
  - (2) Emotional support extremely important
- 2. Ectopic pregnancy
  - a. Incidence
    - (1) Approximately 1 of every 200 pregnancies
    - (2) Most are symptomatic and/or detected 2-12 weeks gestation
  - b. Cause
    - (1) Ovum develops outside the uterus
      - (a) Previous surgical adhesions
      - (b) Pelvic inflammatory disease
      - (c) Tubal ligation
      - (d) Use of an IUD
  - c. Organs affected
    - (1) Fallopian tube
  - d. Complications
    - (1) May be life-threatening
    - (2) May lead to hypovolemic shock and death
  - e. Specific assessment findings
    - (1) Severe abdominal pain, may radiate to back
    - (2) Amenorrhea - absence of monthly blood flow and discharge
    - (3) Vaginal bleeding absent or minimal



- (4) Uterus becomes board-like if hemorrhage retained
- (5) Symptoms of shock inconsistent with amount of visible bleeding
- f. Additional management
  - (1) Assess fetal heart tones often
  - (2) Transport in LLR position unless Trendelenburg is indicated
  - (3) Emergency transport of patient to an appropriate facility
    - (a) Definitive treatment is a cesarean section
- C. Complications of pregnancy
  - 1. Exacerbation of pre-existing medical conditions
    - a. Diabetes
      - (1) May become unstable during pregnancy
      - (2) Higher incidence of coma
    - b. Hypertension
      - (1) May be complicated by pre-eclampsia/ eclampsia
      - (2) More susceptible to additional complications
        - (a) Cerebral hemorrhage
        - (b) Cardiac failure
        - (c) Renal failure
    - c. Neuromuscular disorders
      - (1) May be aggravated by pregnancy
    - d. Cardiac disorders
      - (1) Additional stress on the heart
        - (a) Cardiac output increases 30% by week 34
  - 2. Medical complications of pregnancy
    - a. Toxemia (pre-eclampsia/ eclampsia)
      - (1) Incidence
        - (a) Serious condition
        - (b) Pregnancy induced hypertension (PIH)
          - i) Hypertension, with albuminuria and/ or edema
          - ii) After the 20th week of gestation
      - (2) Cause
        - (a) Associated with first birth, multiple births, excessive amniotic fluid
        - (b) Pre-existing conditions
          - i) Hypertension
          - ii) Renal disease
          - iii) Diabetes
      - (3) Organs affected
      - (4) Complications
        - (a) Convulsions seriously threaten the fetus by abruptio placenta
      - (5) Specific assessment findings
        - (a) Occurs in the last trimester of pregnancy
        - (b) Pre-eclampsia is non-convulsive state of toxemia
        - (c) Pre-eclampsia has two of the following three signs
          - i) Hypertension (B/P > 140/90 - acute systolic rise > 20 and diastolic rise > 10)
          - ii) Fluid retention with excessive weight gain
          - iii) Proteinuria
        - (d) Eclampsia includes convulsions
        - (e) Additional history







- i. Control the delivery of the fetal head
  - (1) Apply gentle hand pressure on the head
  - (2) Beware of fontanelle
  - (3) Support the head as it delivers
- j. Tear amniotic sac if it continues to cover the baby's head
  - (1) Permits escape of amniotic fluid
  - (2) Allows the newborn to start breathing
- k. Check for the presence of the umbilical cord wrapped amount the neck
  - (1) Carefully remove it
- l. Suction the neonate's mouth and nose
- m. Provide support as the head rotates and the shoulders deliver
  - (1) Keep the neonate's head above the level of the vagina
- n. Clamp the umbilical cord
  - (1) First clamp approximately 4 inches from neonate
  - (2) Second clamp approximately 6 inches from the neonate
  - (3) Cut the cord between the two clamps
- o. Support and evaluate the neonate following delivery
- 3. Delivery of the placenta
  - a. Usually occurs 5-20 minutes after delivery of neonate
  - b. Do not delay transport to wait for the delivery of the placenta
  - c. If it delivers, place the placenta in a plastic bag
- E. Additional care
  - 1. Care for the mother
    - a. Excessive bleeding
      - (1) Perform fundal massage of the uterus
        - (a) Stimulates contraction
        - (b) Breast feeding stimulates contraction of the uterus
      - (2) Manage any perineal tears by direct pressure
    - b. Observe and monitor the mother
      - (1) Signs of hemorrhage and stability of pulse and blood pressure
  - 2. Neonate care
- VII. Routine care of the neonate (for more detail, see neonatology unit)
  - A. Care within first minute following delivery
    - 1. Support
      - a. Newborns are slippery
      - b. Use both hands to support the head and torso
      - c. Work closely to surface of the stretcher, bed, floor
    - 2. Dry
    - 3. Maintain warmth
      - a. Hypothermia is a major concern
      - b. Prevent heat loss by quickly drying and then covering the newborn, especially the head
    - 4. Positioning
      - a. Position the newborn on his/her side
      - b. Place on warm clean object, such as sterile towels
    - 5. Clear airway
      - a. Repeat suction of the nose and mouth
      - b. Wipe away secretions with sterile gauze
    - 6. Tactile stimulation









- b. Assessment
  - (1) Severe, sudden, shearing pain during strong contraction
  - (2) Absent fetal heart tones or movement
  - (3) Complete rupture - pain subsides
  - (4) Uterus palpated as hard mass next to fetus
  - (5) Rapid shock onset
  - (6) Minimal external bleeding do to concealed bleeding
- c. Management
  - (1) Treat for shock
  - (2) Emergency transport
- 3. Uterine inversion
  - a. Incidence
    - (1) Infrequent, but serious
    - (2) 1 in approximately 2100 deliveries
    - (3) Turning the uterus inside out
    - (4) Occurs following contraction or with abdominal pressure
      - (a) Coughing, sneezing
      - (b) Improper fundal massage
    - (5) Occurs as a result of umbilical cord traction
    - (6) Protrusion of uterine fundus beyond cervix
  - b. Assessment
    - (1) Profuse postpartum bleeding
    - (2) Severe, sudden lower abdominal pain
  - c. Management
    - (1) Oxygenation, ventilation, circulatory support
    - (2) Emergency transport
    - (3) Do not attempt to deliver placenta
    - (4) Cover protruding tissue with moist, sterile dressings
    - (5) Replace protruding tissue upward into cervix
      - (a) Discuss with medical direction physician
- 4. Pulmonary embolism
  - a. Incidence
    - (1) Most common cause of maternal death
    - (2) Result of blood clot in pelvic circulation
    - (3) More common with cesarean
  - b. Assessment
    - (1) Sudden dyspnea
    - (2) Sharp, localized chest pain
  - c. Management
    - (1) Oxygenation, ventilation
    - (2) Positioning
    - (3) Cardiac monitoring
    - (4) Emergency transport