

## Adult Cardiac Related Problem

---

**Note:**

**Request Advanced Life Support if available.  
Do not delay transport to the appropriate hospital.**

**Note:**

**Be prepared to deal with respiratory and/or cardiac arrest!**

- I. Assure that the patient's airway is open and that breathing and circulation are adequate.
- II. Administer high concentration oxygen.
- III. Place the patient in a position of comfort, while reassuring the patient and loosening tight or restrictive clothing.
- IV. Transport, keeping the patient warm.
- V. Ongoing assessment. Obtain and record the patient's vital signs, repeat enroute as often as the situation indicates.
- VI. If patient has not taken aspirin and has no history of aspirin allergy and no evidence of recent gastrointestinal bleeding, administer 325mg of nonenteric chewable aspirin.
- VII. **If chest pain is present and if the patient possesses nitroglycerin prescribed by his/her physician, has a systolic blood pressure of 120mm Hg or greater and the patient has not taken any erectile dysfunction medication in the last 72 hours**, the EMT-B may assist the patient in self-administration of the patient's prescribed sublingual nitroglycerin as indicated on the medicine container.
  - A. Confirm the systolic blood pressure is above 120mm Hg.
  - B. Question patient on last dose administration of nitroglycerin, effects, and assure understanding of route and administration.
  - C. Administer one (1) metered dose of nitroglycerin spray *or* one (1) nitroglycerin tablet under the patient's tongue without swallowing and record the time of the administration and the current vital signs.
  - D. Recheck blood pressure within two (3) minutes of administration and record any changes in the patient's condition.

E. If the patient continues to have chest pain with a systolic BP above 120mm Hg, the EMT-B may assist in administering up to two additional doses following the above steps in VII-A through VII-D for each single dose administered. Each dose shall be no less than 5 minutes from the last dose given.

VII. Record all patient care information, including the patient's medical history and all treatment provided, on a Prehospital Care Report (PCR).

## Adult Respiratory Arrest/Failure (Non-Traumatic)

---

**Note:**

**Determine if the patient has a Do Not Resuscitate (DNR) order. Treatment must not be delayed while making this determination.**

**Note:**

**Request Advanced Life Support if available.  
Do not delay transport to the appropriate hospital.**

- I. Perform initial assessment.
- II. **If ventilatory status is inadequate, (patient is cyanotic, visible retractions, severe use of accessory muscles, altered mental status, respiratory rate less than 10 breaths per minute, signs of poor perfusion) proceed with positive pressure ventilations as follows.**
- III. Insert an oropharyngeal airway if tolerated (i.e., no gag reflex). Provide BLS care according to AHA/ARC/NSC standards. **If ventilations are unsuccessful, refer immediately to the Obstructed Airway Protocol. If the patient is in cardiac arrest refer immediately to the appropriate Cardiac Arrest Protocol.**
- IV. Ventilate with supplemental oxygen.
- V. Transport **immediately**, keeping the patient warm.
- VI. Ongoing assessment including the effectiveness of the ventilations/compressions.
- VII. Record all patient care information, including the patient's medical history and all treatment provided, on a Prehospital Care Report (PCR).

**Caution:**

**Patients with airway obstruction or poor lung compliance *may* require high pressures to be properly ventilated, which can be achieved by disabling the pressure-relief valve of the BVM.**

**Rates of Ventilations**

**Adults: Ventilate every 5 – 6 seconds without an advanced airway in-place and every 6 – 8 seconds if CPR is ongoing and an advanced airway in-place.  
Each breath is given over 1 second causing visible chest rise.**

**Adult Respiratory Arrest/Failure, continued**

## Pediatric Respiratory Arrest/Failure (Non-Traumatic)

---

**Note:**

**Request Advanced Life Support if available.  
Do not delay transport to the appropriate hospital.**

I. Establish airway control and ventilations using BLS techniques according to AHA/ARC/NSC guidelines.

A. Open the airway using the head-tilt/chin-lift or jaw-thrust maneuver.

**Caution:**

**If signs of impending cardiac arrest (i.e., progressive bradycardia, delayed capillary refill [greater than 2 seconds], cyanosis and limp muscle tone), be prepared to initiate the appropriate Cardiac Arrest Protocol!**

B. Remove any **visible** airway obstruction by hand and clear the airway of any accumulated secretions or fluids by suctioning.

II. **Immediately** determine if the child is breathing adequately.

A. **If the ventilatory status is inadequate (the child is cyanotic, visible retractions, grunting, head bobbing, severe use of accessory muscles, altered mental status, the respiratory rate is low for the child's age, capillary refill is greater than 2 seconds, muscle tone is limp, a slow or fast heart rate, or other signs of inadequate perfusion):**

1. Insert a properly sized oropharyngeal airway if the gag reflex is absent. If a gag reflex is present insert a nasopharyngeal airway.
2. Determine if the patient needs positive pressure ventilations. If no, use supplemental oxygen and maintain airway. If yes, maintain airway, give positive pressure ventilations and supplemental oxygen.
3. Ventilate (with high concentration oxygen) at a rate appropriate for the child's age using a pocket mask or bag-valve-mask. **Assure there is adequate chest rise with each ventilation.**

**Caution:**

**Adequate ventilation *may* require disabling the pop-off valve if the bag-valve-mask unit is so equipped. BVM must have a volume of at least 450 – 500 ml for newborns and infants**

**Rates of Ventilations**

**Infants and children: Every 3 – 5 seconds without an advanced airway in-place and every 6 – 8 seconds with an advanced airway in-place, each breath given over 1 second, causing visible chest rise.**

- III. Identify and correct any other life-threatening conditions found during the initial assessment.
- IV. Transport, keeping the child warm.
- V. Ongoing assessment including effectiveness of ventilations.
- VI. Record all patient care information, including the patient's medical history and all treatment provided, on a Prehospital Care Report (PCR).

## **Cardiac Arrest Adult and Pediatric (Non – Traumatic)**

---

**Note:**

**Determine if the patient has a Do Not Resuscitate (DNR) order.  
Treatment must not be delayed while making this determination.**

**Request Advanced Life Support if available. Do not delay transport to the hospital.**

---

- I. If patient is unresponsive and pulseless, begin Cardiopulmonary Resuscitation as per current AHA/ARC/NSC guidelines.

**DO NOT DELAY BEGINNING COMPRESSIONS TO BEGIN VENTILATIONS – COMPRESSIONS MUST BEGIN AS SOON AS IT IS DETERMINED THE PATIENT DOES NOT HAVE A PULSE**

- A. Artificial ventilation and/or compressions **must not be delayed** to attach supplemental oxygen. Initial ventilations without supplemental oxygen should be used until supplemental oxygen can be attached.
- i. Deliver each breath over 1 second.
  - ii. Give sufficient tidal volume to produce visible chest rise.
  - iii. Avoid rapid or forceful ventilations.
  - iv. When an advance airway is in-place with 2 person adult CPR, ventilations are to be given at a rate of one breath every 6-8 seconds without attempting synchronization between compressions. **Do not pause compressions for delivery of ventilations.**
- II. During application of the AED:
- A. The AED should be applied to the patient as soon as it is available and without interrupting compressions.
  - B. Assure proper application and adhesion of the pads to the patient's chest.
  - C. If present, remove Nitroglycerin medication patch from the patient's chest.

## Cardiac Arrest – Adult and Pediatric – Non-Traumatic, continued

- i. When in doubt of the type of medication patch the patient has on their chest, remove the patch
    - ii. Assure that patient’s medication patch does not come in contact with your skin (wear appropriate PPE).
    - iii. Assure proper disposal of the medication patch at the Emergency Department through use of properly identified biohazard bags.
- III. Once the AED has analyzed the patient’s rhythm, follow the voice prompts to either “check patient” or administer a “shock”.
  - A. Pediatric patients under the age of 8 should be defibrillated using an AED equipped for and approved by the FDA for use on children.
    - i. In an emergency situation where an AED equipped for use on children is unavailable, an adult AED unit can be used.
- IV. After the first and all subsequent defibrillations immediately begin CPR (approximately 2 minutes), without checking for a pulse, before the next rhythm check and/or defibrillation. Do not check for a pulse or rhythm after defibrillation until CPR has been completed (approximately every 2 minutes) *or* the patient appears to no longer be in cardiac arrest.
- V. All actions and procedures occurring during a cardiac arrest should be accomplished in a way that minimizes interruptions of chest compressions.
- VI. Transport to the Emergency Department:
  - A. A maximum of 3 defibrillations may be delivered at the scene prior to initiating transport. If transportation is unavailable, continue your AED/CPR sequence until transportation is available.
  - B. If the AED advises that no shock is indicated, initiate transport with rhythm checks by the AED occurring approximately every 2 minutes.
  - C. During transport, the AED should perform rhythm checks approximately every 2 minutes with as few interruptions of chest compressions as possible.
- VII. If patient is no longer in cardiac arrest, complete an initial assessment, support airway and breathing, place patient in the recovery position, obtain vital signs, and treat according to appropriate protocol while continuing transport.

## **Cardiac Arrest – Adult and Pediatric – Non-Traumatic, continued**

- A. If pt remains unresponsive with vital signs they may benefit from therapeutic hypothermia and medical control should be contacted to determine appropriate transportation destination.
- VIII. Record all patient care information, including the patient's medical history and all treatment provided (including the total number of defibrillations administered), on a Prehospital Care Report (PCR).

## **Bleeding (External)**

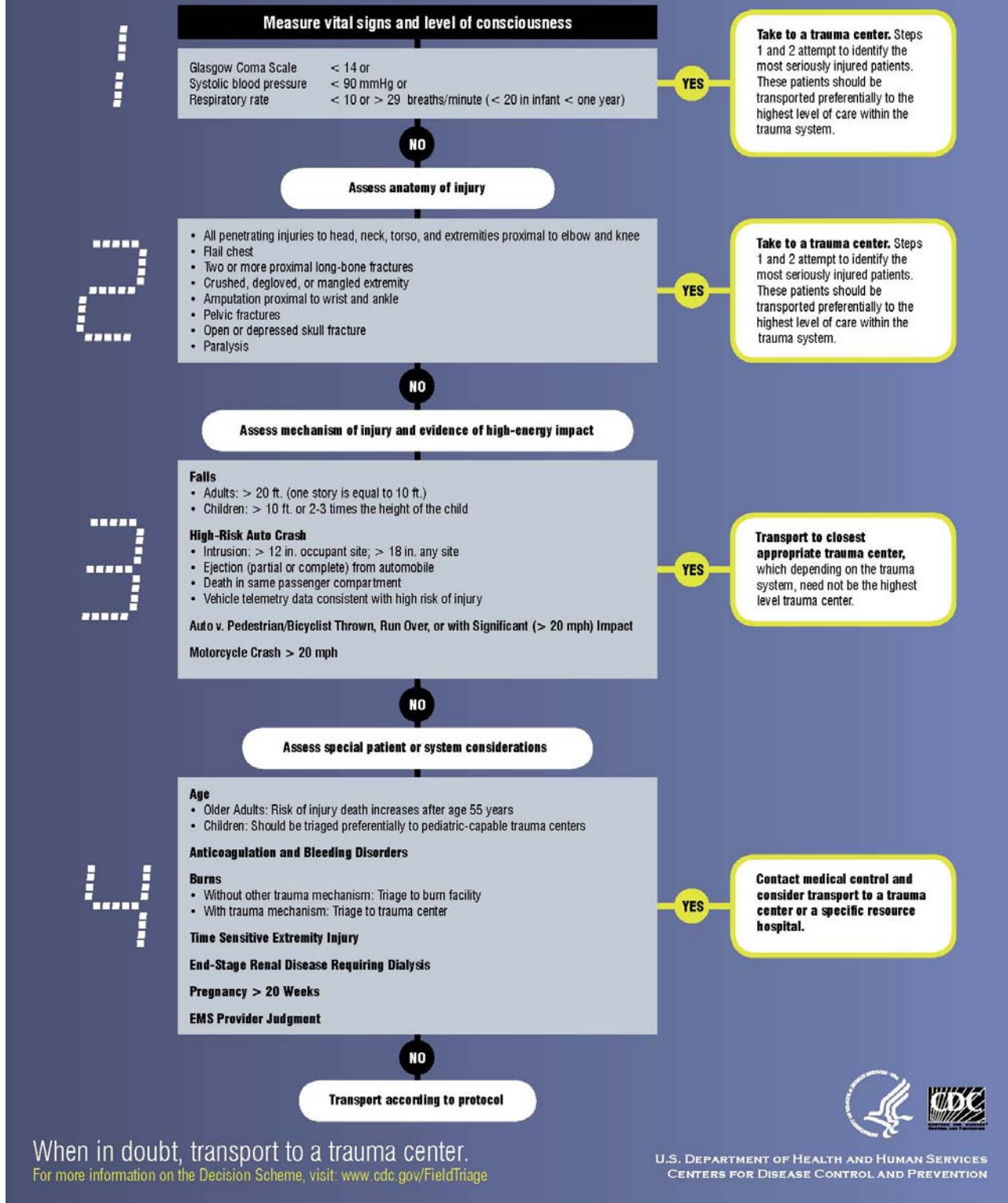
---

- I. Assure that the patient's airway is open and that breathing and circulation are adequate. Apply oxygen if needed.
- II. Control bleeding by:
  - A. Immediately applying pressure directly on the wound with a sterile dressing.

NOTE: If available and bleeding is severe, a hemostatic gauze dressing should be applied directly to the bleeding site simultaneously with direct pressure.
  - B. If bleeding soaks through the dressing, apply additional dressings while continuing direct pressure. **Do not remove dressings from the injured site!**
  - C. Cover the dressed site with a pressure bandage.
- III. **If severe bleeding persists from a limb**, apply a tourniquet just proximal to the bleeding site. If severe bleeding still persists, a second tourniquet may be applied proximal to the first tourniquet. Record time tourniquet was secured and document near the tourniquet site.
- IV. **If severe bleeding persists from the trunk, neck, head or other location where a tourniquet cannot be used**, hemostatic gauze dressings should be used.
- V. Assess for hypoperfusion. **If hypoperfusion is present, refer immediately to the hypoperfusion protocol!**
- VI. Transport keeping the patient warm.
- VII. Ongoing assessment. Obtain and record the patient's vital signs, repeat enroute as often as the situation indicates.
- VIII. Record all patient care information, including the patient's medical history and all treatment provided, on a Prehospital Care Report (PCR).

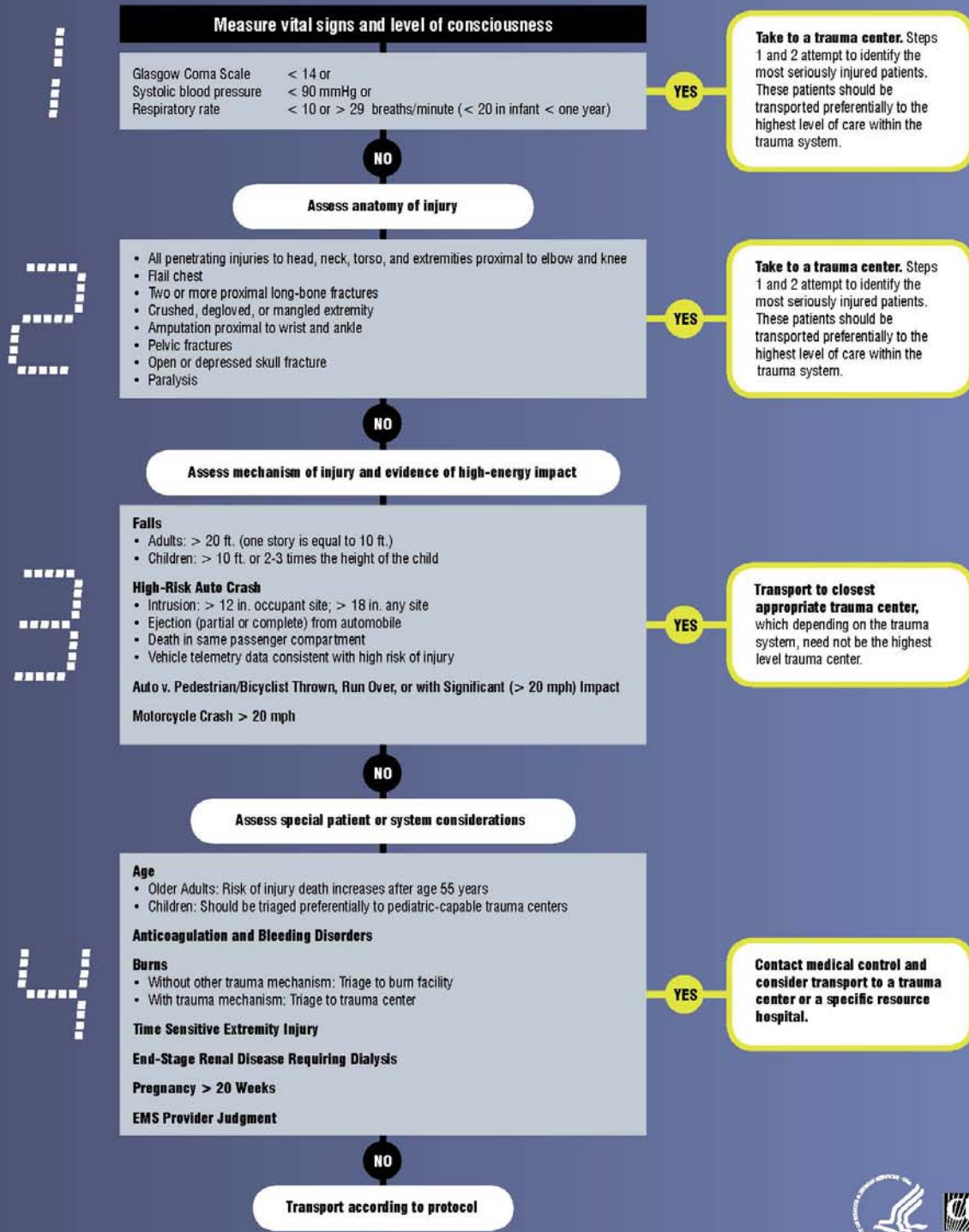
# Adult Major Trauma (Including Traumatic Cardiac Arrest)

## FIELD TRIAGE DECISION SCHEME: THE NATIONAL TRAUMA TRIAGE PROTOCOL



# Pediatric Major Trauma (Including Traumatic Cardiac Arrest)

## FIELD TRIAGE DECISION SCHEME: THE NATIONAL TRAUMA TRIAGE PROTOCOL



When in doubt, transport to a trauma center.  
For more information on the Decision Scheme, visit: [www.cdc.gov/FieldTriage](http://www.cdc.gov/FieldTriage)



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION

## Emergency Childbirth, Resuscitation and Stabilization of the Newborn

---

**Note:**

**Request Advanced Life Support if available.  
Do not delay transport to the appropriate hospital.**

- I. Perform initial assessment.
  - A. Assure that the mother's airway is open and that breathing and circulation are adequate.
  - B. Assess the mother for hypoperfusion. **If one or more signs of hypoperfusion are present, refer immediately to the Hypoperfusion Protocol!**
  - C. Obtain the mother's history to determine if the mother is in labor. The history includes:
    1. How long have you been pregnant?
    2. Number of previous pregnancies
    3. Number of previous births
    4. Frequency and duration of uterine contractions
    5. Recent vaginal discharge or bleeding
    6. Presence of urgency to move bowels or pressure in vaginal area
  - D. Be prepared to handle additional patient(s) in addition to the mother.

**Caution:**

**Do not permit the mother to go to the bathroom!**

- E. Determine if the mother is having contractions.
  1. **If the mother is having contractions** perform a visual inspection of the external genitalia and perineum for bulging and/or crowning. Have your partner present during this exam. **If there is crowning prepare for immediate delivery by:**
    - a. Informing the mother of the need for immediate delivery
    - b. Insuring a private, clean and sanitary environment
    - c. Positioning and draping the mother
    - d. Placing the OB kit within easy reach
    - e. Warming several towels (if possible)

## Emergency Childbirth, continued

**Caution:**

**Never delay or restrain delivery under normal circumstances!**

### II. Delivery procedures:

- A. During delivery support the infant's head with one hand while gently guiding it out of the birth canal to prevent an explosive delivery. Using your other hand with a sterile dressing, support the perineum (area between the vagina and the anus) to help prevent tearing during delivery of the head.
- B. If the amniotic sac has not broken, use your finger or a clamp to puncture the sac and pull it away from the infant's head and mouth as they appear.
- C. Attempt to prevent the infant's head from coming in contact with fecal material or other contaminants.
- D. **As soon as the head delivers** continue to support the infant's head with one hand. **Tell the mother to stop pushing.** Inspect the infant for the umbilical cord wrapped around the neck.
  1. **If the umbilical cord is wrapped around the infant's neck:** Gently loosen the cord and slip it over the infant's head.
  2. **If the umbilical cord is wrapped too tightly around the infant's neck or wrapped around the neck more than once, preventing the delivery of the infant, immediately** clamp the umbilical cord with two clamps and cut the cord between them.
- E. Suction the infant's oropharynx only if the airway is obstructed or artificial ventilations are required.
  1. Insert a compressed bulb syringe 1 –1 ½ inches into the infant's mouth.
  2. Suction the infant's oropharynx while controlling the release of the bulb syringe with your fingers.
  3. Repeat suction as necessary.
- G. Instruct the mother to begin pushing during contractions.
- H. **As soon as the infant has delivered,** quickly dry the infant and place the infant on a warm towel (if available) in a face-up position with the head lower than the feet. **Keep the infant at the level of the mother's vagina until the cord is cut.**

## Emergency Childbirth, continued

**Caution:**  
**Spontaneous respirations should begin within 30 seconds.**

- I. Perform an initial assessment of the infant. Quickly assess the infant's respiratory status, pulse and general condition.
  1. **If the infant is breathing spontaneously and crying vigorously and has a pulse greater than 100/min:**
    - a. Clamp the umbilical cord 1 minute after birth with two clamps three inches apart and cut the cord between them. The first clamp will be 8 – 10 inches from the baby. Place the second clamp 3 inches from the first clamp towards the mother.
    - b. Cover the infant's scalp with an appropriate warm covering.
    - c. Wrap the infant in a dry, warm blanket or towels **and** a layer of foil over the layer of blankets or towels, **or** use a commercial-type infant swaddler if one is provided with the OB kit. **Do not use foil alone!**
    - d. Ongoing assessment. Obtain and record vital signs, as often as the situation indicates.
    - e. **Keep the infant warm and free from drafts.**
  2. **Monitor the infant's respirations continuously. If the infant is not breathing spontaneously and crying vigorously:**
    - a. **If the infant's respirations are absent or depressed (less than 30/minute in a newborn):**
      - i. Rub the infant's lower back **gently**.
      - ii. Snap the bottom of the infant's feet with your index finger **gently**.
    - b. **If the respirations remain absent or become depressed (less than 30/minute in a newborn) despite stimulation, or if cyanosis is present:**
      - i. Clear the infant's airway by suctioning the mouth and nose **gently** with a bulb syringe.

## Emergency Childbirth, continued

- c. **If respirations remain absent or depressed (less than 30/minute in a newborn) despite stimulation and oxygen:**
  - i. Insert the proper size oral airway **gently**.
  - ii. Ventilate the infant without supplemental oxygen at a rate of 40 – 60 /minute with an appropriately sized pocket mask or bag-valve-mask as soon as possible. . Each ventilation given over one second **assuring that the chest rises with each ventilation. If patient does not respond within 30 seconds add supplemental oxygen.**
3. **Monitor the infant’s pulse rate continuously.**
  - i. **If the pulse rate drops below 100 beats per minute at any time, assist ventilations at a rate of 40 – 60/minute with supplemental oxygen.**
  - ii. **If the pulse rate drops below 60 beats per minute at any time, or does not increase above 60 beats per minute after 30 seconds of assisted ventilations, add chest compressions to assisted ventilations following AHA/ARC/NSC guidelines.**
4. Ongoing assessment of the newborn. Obtain and record the vital signs of all patients, and repeat enroute as often as the situation indicates.
- iii. **Transport immediately, keeping the infant warm. Do not wait for the placenta to be delivered before transporting!**
- IV. Prepare for deliver of the placenta during transport. Delivery of the placenta *usually* occurs within 20 minutes of the delivery of the infant. After delivery of the placenta, place the placenta in a plastic bag or other container and deliver to the receiving hospital. Massage the mother’s abdomen where the fundus can be palpated.
- V. Ongoing assessment of the mother.
  - A. Reassess the mother for hypoperfusion. **If one or more signs of hypoperfusion are present, refer immediately to the Hypoperfusion Protocol!**
  - B. Obtain and record the vital signs of all patients, repeat enroute as often as the situation indicates.
  - C. Record all patient care information, including the mother’s medical history and all treatment provided for each patient, on a separate Prehospital Care Report (PCR) for each patient.

## Emergency Childbirth, continued

### VI. Complicated Childbirth.

#### A. Breech Birth

##### 1. If the buttocks presents first:

- a. Administer high concentration oxygen to the mother.
- b. Attempt to establish an open path in the birth canal to the infant's mouth with sterile-gloved fingers.
- c. **Transport the mother immediately** in a face-up position with her hips elevated, while maintaining an open path in the birth canal to the infant's mouth.

##### 2. If a limb presents first:

- a. Administer high concentration oxygen to the mother.
- b. Place the mother in a face-up position with her hips elevated and **transport immediately!**

#### B. Prolapsed Umbilical Cord

- a. Administer high concentration oxygen to the mother.
- b. Place the mother in a face-up position with her hips elevated, and using a sterile gloved hand, palpate the cord for pulses.
- c. Insert a sterile gloved hand into the vagina and gently push up on the presenting part of the fetus to keep pressure off of the cord. Continue to hold the presenting part away from the cord until you are relieved by the ED staff. **Do not insert the cord back into the uterus!**
- d. Wrap the exposed cord with sterile towel or dressings. The cord must be kept warm.
- e. **Transport immediately** while protecting the umbilical cord from pressure during transportation.

#### C. Multiple Births

- a. Obtain additional help as needed.

## Emergency Childbirth, continued

- b. Deliver each multiple birth according to the above protocol for **Uncomplicated Childbirth**, making sure to clamp and cut each umbilical cord between births.
- c. **If the anticipated second birth does not occur after 10 minutes, transport immediately!**
- d. A Prehospital Care Report (PCR) must be completed for each patient.