

New York State
Department of Health
Bureau of Emergency Medical Services

Statewide
Basic Life Support
Adult & Pediatric
Treatment Protocols
EMT-B and AEMT

2003
Version III



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Adult Obstructed Airway

Note:

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

- I. **If the patient is conscious and can breathe, cough or speak, do not interfere!** Encourage the patient to cough. **If the foreign body cannot be dislodged by the patient coughing:**
 - A. Administer high concentration oxygen.
 - B. Transport in a sitting position, keeping the patient warm.
 - C. Ongoing assessment. Obtain and record the patient's vital signs, repeat enroute as often as the situation indicates.
 - D. Record all patient care information, including the patient's medical history and all treatment provided, on a Prehospital Care Report (PCR).
- II. **If the patient is conscious with signs of severe airway obstruction (i.e. signs of poor air exchange and increased breathing difficulty, such as a silent cough, cyanosis, or inability to speak or breathe),** perform obstructed airway maneuvers according to AHA/ARC/NSC guidelines.
- III. **If the airway obstruction persists after two sequences of obstructed airway maneuvers and/or the patient becomes unconscious:**

Caution:

If obstructed airway is traumatic, manually immobilize the head and cervical spine in a neutral position while opening the patient's airway using the jaw-thrust maneuver, and transport the patient without delay!

Continue to attempt removal of the airway obstruction while enroute to the hospital.

- A. Begin CPR .
- B. Transport, keeping the patient warm..
- C. Ongoing assessment. Obtain and record the patient's vital signs, repeat enroute as often as the situation indicates.

Adult Obstructed Airway, continued

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

IV. If the airway obstruction is cleared and the patient resumes breathing:

- A. Administer high concentration oxygen.
- B. Transport, keeping the patient warm.
- C. Obtain and record the patient's vital signs, repeat enroute as often as the situation indicates.
- D. Record all patient care information, including the patient's medical history and all treatment provided, on a Prehospital Care Report (PCR).

Pediatric Obstructed Airway

Note:

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

- I. **Partial Airway Obstruction – If the child is alert and can breathe, cough, cry or speak:**
 - A. **Do not interfere, and do not perform BLS airway maneuvers! Allow the child to assume and maintain a position of comfort or to be held by the parent, preferably in an upright position. Do not lay the child down.**
 - B. Administer high concentration oxygen (preferably humidified) by a face mask, **if tolerated without agitating the child!** Administration of oxygen may best be accomplished by allowing the parent to hold the face mask about 6 – 8 inches from the patient's face.
 - C. Transport immediately, keeping the child warm.
 - D. Ongoing assessment. Obtain and record the patient's initial vital signs, including capillary refill, **if tolerated**, repeat enroute as often as the situation indicates, **without agitating the child**. Limit your exam and do not assess blood pressure.
 - E. Record all patient care information, including the patient's medical history and all treatment provided, on a Prehospital Care Report (PCR).
- II. **If the child is conscious but cannot breath, cough, speak, or cry, perform obstructed airway maneuvers according to AHA/ARC/NSC guidelines.**

Caution:

**Agitating a child with a partial airway obstruction could cause complete obstruction! As long as the child can breathe, cough, cry, or speak, do not upset the child with unnecessary procedures (e.g., blood pressure determination)!
Use a calm, reassuring approach, transporting the parent and child securely as a unit.**

Pediatric Obstructed Airway, continued

III. If the child is unconscious, becomes unconscious and is not breathing:

- A. Attempt to establish airway control using BLS techniques. Open the child's mouth, and remove any **visible** foreign body.
- B. Begin CPR according to AHA/ARC/NSC guidelines and transport immediately.

IV. **Immediately upon removal of the foreign body and/or establishment of chest rise** in a child of any age (including infants), **assess the child's ventilatory status!**

Caution:

If signs of impending cardiac arrest are present (i.e., progressive bradycardia, delayed capillary refill [greater than 2 seconds] and cyanosis), be prepared to initiate the non-traumatic cardiac arrest protocol!

1. If the ventilatory status is inadequate (the child is cyanotic, the respiratory rate is low for the child's age or capillary refill is greater than 2 seconds):
 - a. Ventilate at the rate appropriate for the child's age using a pocket mask or bag-valve-mask. **Assure there is adequate chest rise with each ventilation given over one second.**

Caution:

Adequate ventilation may require disabling the pop-off valve if the bag-valve-mask unit is so equipped!

- b. Supplemental ventilations with high concentration oxygen.
 - c. Transport, keeping the child warm.
 - d. Ongoing assessment. Obtain and record the patient's vital signs, repeat enroute as often as the situation indicates.
 - e. Record all patient care information, including the patient's medical history and all treatment provided, on a Prehospital Care Report.
2. **If the ventilatory status is adequate (i.e., the child is breathing spontaneously, the respiratory rate is appropriate for the child's age, cyanosis is absent, and capillary refill is less or equal to 2 seconds):**

Pediatric Obstructed Airway, continued

- a. Administer high concentration oxygen (preferably humidified) by a face mask, **if tolerated, without agitating the child!** Administration of oxygen may best be accomplished by allowing the parent to hold the face mask about 6 – 8 inches from the patient's face.
- b. Transport, keeping the child warm.
- c. Ongoing assessment. Obtain and record the patient's vital signs, including capillary refill, **if tolerated**, repeat enroute as often as the situation indicates, **without agitating the child.**
- d. Record all patient care information, including the patient's medical history and all treatment provided, on a Prehospital Care Report (PCR).

Pediatric Obstructed Airway, continued

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. 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 and an automated external defibrillator (AED) is available, **refer immediately to the Automated External Defibrillator (AED) Protocol!**
- IV. Ventilate with high concentration 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:

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

Adults: 10 – 12 times a minute. Each breath given over 1 second, with or without an advanced airway in place, 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: 12 - 20 times a minute, each breath given over 1 second, with or without an advanced airway in place, 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).

Pediatric Respiratory Arrest/Failure, continued

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. Perform initial assessment.
- II. If patient is confirmed to be absent of respirations and pulse, begin Cardiopulmonary Resuscitation as per current AHA/ARC/NSC guidelines.
 - A. Artificial ventilation and/or CPR 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 a secure/advance airway is in-place (endotracheal tube, Combitube, or LMA) with 2 – person adult CPR, ventilations are to be given at a rate of 8 – 10 breaths per minute without attempting synchronization between compressions. Do not pause compressions for delivery of ventilations.
 - B. If cardiac arrest was unwitnessed by EMS or EMS arrival to the patient is more than 4 to 5 minutes since the patient went in to cardiac arrest, begin CPR for 2 minutes (5 cycles for adult CPR) prior to defibrillation.
 - i. During this initial administration of CPR, the AED should be attached to the patient.
 - ii. Initial AED analysis of the patient's rhythm should occur 2 minutes after CPR has been initiated.

Cardiac Arrest, continued

- C. If cardiac arrest was witnessed by EMS or EMS arrival to the patient is less than 4 minutes since the patient went in to cardiac arrest, attach the AED to the patient and check rhythm prior to beginning CPR.
- III. During application of the AED pads:
 - A. Assure proper application and adhesion of the pads to the patient's chest.
 - B. If present, remove Nitroglycerin medication patch from the patient's chest.
 - 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.
- IV. 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 or who are preadolescent (prepubescent) should be defibrillated using an AED equipped for and FDA approved 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.
- V. After the first and all subsequent defibrillations immediately begin CPR for 5 cycles (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 5 cycles of CPR has been completed **or** the patient appears to no longer be in cardiac arrest.
- VI. All actions and procedures occurring during a cardiac arrest should be accomplished in a way that minimizes interruptions of chest compressions.
- VII. 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.

Cardiac Arrest, continued

- VIII. 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.
- IX. 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).

Adult Major Trauma

(Including Traumatic Cardiac Arrest)

Note:

**Request Advanced Life Support if available.
Consider Air Medical Transport per regional protocol.
Do not delay transport to the appropriate hospital.**

For the purpose of this protocol, major trauma is present if the patient's physical findings or the mechanism of injury meets any one of the following criteria:

PHYSICAL FINDINGS

- 1. Glasgow Coma Scale is less than or equal to 13**
- 2. Respiratory rate is less than 10 or more than 29 breaths per minute**
- 3. Pulse rate is less than 50 or more than 120 beats per minute**
- 4. Systolic blood pressure is less than 90 mmHg**
- 5. Penetrating injuries to head, neck, torso or proximal extremities**
- 6. Two or more suspected proximal long bone fractures**
- 7. Suspected flail chest**
- 8. Suspected spinal cord injury or limb paralysis**
- 9. Amputation (except digits)**
- 10. Suspected pelvic fracture**
- 11. Open or depressed skull fracture**

MECHANISM OF INJURY

- 1. Ejection or partial ejection from an automobile**
- 2. Death in the same passenger compartment**
- 3. Extrication time in excess of 20 minutes**
- 4. Vehicle collision resulting in 12 inches of intrusion in to the passenger compartment**
- 5. Motorcycle crash >20 MPH or with separation of rider from motorcycle**
- 6. Falls from greater than 20 feet**
- 7. Vehicle rollover (90 degree vehicle rotation or more) with unrestrained passenger**
- 8. Vehicle vs pedestrian or bicycle collision above 5 MPH**

HIGH RISK PATIENTS

If a patient does not meet the above criteria for Major Trauma, but has sustained an injury and has one or more of the following criteria, they are considered a "High Risk Patient". Consider transportation to a Trauma Center.

Consider contacting medical control.

- 1. Bleeding disorders or patients who are on anticoagulant medications**
- 2. Cardiac disease and/or respiratory disease**
- 3. Insulin dependent diabetes, cirrhosis, or morbid obesity**
- 4. Immunosuppressed patients (HIV disease, transplant patients and patients on chemotherapy treatment)**
- 5. Age >55**

Note:

The following management may be instituted before or during extrication or enroute as appropriate. In no case should patient transport be delayed because of this management!

- I. Establish and maintain airway control while manually stabilizing the cervical spine.
- II. Perform initial assessment.
- III. Assess level of consciousness.
- IV. Assess the patient's ventilatory status:

A. If the ventilatory status is inadequate:

1. Insert an oropharyngeal airway if no gag reflex is present or a nasopharyngeal airway if a gag reflex is present.
2. Ventilate the patient with an adjunctive device and high concentration oxygen at a rate of 12 breaths per minute. Each ventilation given over one second **assuring that there is sufficient chest rise.**

Caution:

If head injury is suspected, the Glasgow Coma Scale (GCS) score is less than 8, and active seizures or one or more of the following signs of brain herniation are present, hyperventilate the patient with high concentration oxygen at a rate of 20 breaths/min.

- **Fixed or asymmetric pupils.**
- **Abnormal flexion or abnormal extension (neurological posturing).**
- **Hypertension and bradycardia (Cushing's reflex).**
- **Intermittent apnea (periodic breathing).**
- **Further decrease in GCS score of 2 or more points (neurological deterioration).**

Do not hyperventilate unless the above criteria are met!

Adult Major Trauma, continued

3. **Expose the patient's chest to locate and identify injuries and to listen for breath sounds.**
4. **Seal any open chest wounds with an occlusive dressing; stabilize impaled objects in the chest.**

B. **If the ventilatory status is adequate**, administer high concentration oxygen as soon as possible.

V. Assess the patient's circulatory status.

A. If the pulse is absent (Traumatic Cardiac Arrest):

1. Extricate the patient using the Rapid Extrication technique.
2. Initiate transportation **immediately**. (Refer to item VI below).
3. Perform CPR according to AHA/ARC/NSC standards.
4. Take appropriate steps to control hemorrhage.
5. Apply and inflate MAST, if available and regionally approved¹, or elevate the foot of the backboard 8 – 12 inches if MAST are not available or not regionally approved¹.
6. Ongoing assessment. Obtain and record the patient's vital signs, level of consciousness, repeat enroute to the hospital as often as the situation indicates.
7. Record all patient care information, including all treatment provided, on a Prehospital Care Report (PCR).

B. If the pulse is present:

1. Take appropriate steps to control hemorrhage.
2. Extricate the patient using the Rapid Extrication technique.
3. Initiate transportation **immediately**. (Refer to item VI below)
4. Perform rapid trauma assessment.
5. Apply and inflate MAST, if available and regionally approved¹, in adults with severe hypotension, or hypotension with unstable pelvic fracture, according to the **Hypoperfusion Protocol**, or elevate the foot of the backboard 8 – 12 inches if MAST are not available or not regionally approved¹.

Adult Major Trauma, continued

6. Keep the patient warm during transport.
7. Ongoing assessment. Obtain and record the patient's vital signs, and level of consciousness, repeat enroute to the hospital as often as the situation indicates.
8. Record all patient care information, including all treatment provided, on a Prehospital Care Report (PCR).

C. If life-threatening hemorrhage is present:

1. Take appropriate steps to control the hemorrhage.
2. Extricate the patient using the Rapid Extrication technique.
3. Initiate transportation **immediately**. (Refer to item VI below)
4. Perform rapid trauma assessment.
5. Keep the patient warm during transport.
6. Assess for **hypoperfusion** enroute.
7. Ongoing assessment. Obtain and record the patient's vital signs, and level of consciousness, repeat enroute to the hospital as often as the situation indicates.
8. Record all patient care information, including all treatment provided, on a Prehospital Care Report (PCR).

D. If one or more signs of hypoperfusion are present, refer immediately to the Hypoperfusion Protocol!

1. Take appropriate steps to control life threatening hemorrhage.
2. Extricate the patient using the Rapid Extrication technique.
3. Initiate transportation **immediately**. (Refer to item VI below)
4. Apply and inflate MAST, if available and regionally approved¹, in adults with severe hypotension, or hypotension with unstable pelvic fracture, according to the **Hypoperfusion Protocol**, or elevate the foot of the backboard 8 - 12 inches if MAST are not available or not regionally approved¹.
5. Keep the patient warm enroute.

Adult Major Trauma, continued

6. Perform rapid trauma assessment.
7. Ongoing assessment. Obtain and record the patient's vital signs, and level of consciousness, repeat enroute to the hospital as often as the situation indicates.
8. Record all patient care information, including all treatment provided, on a Prehospital Care Report (PCR).

VI. Transport to the appropriate hospital.

Note:
Consider Air Medical Transport per regional protocol.
Do not delay transport to the appropriate hospital.

- A. Transport the patient to the **nearest designated Regional or Area Trauma Center; or**
- B. Transport the patient to the **nearest hospital emergency department (ED)** if:
 1. The patient is in cardiac arrest; **or**
 2. The patient has an unmanageable airway; **or**
 3. An on-line medical control physician so directs.
- C. Ongoing assessment. Obtain and record the patient's vital signs, and level of consciousness, repeat enroute to the hospital as often as the situation indicates.
- D. Notify the receiving hospital as soon as possible.
- E. Record all patient care information, including all treatment provided, on a Prehospital Care Report (PCR).

1 "Regionally Approved" means approved by the appropriate Regional Emergency Medical Advisory Committee (REMAC) for use in that region

Adult Major Trauma, continued

Pediatric Major Trauma

(Including Traumatic Cardiac Arrest)

Note:

**Request Advanced Life Support if available.
Consider Air Medical Transport per regional protocol.
Do not delay transport to the appropriate hospital.**

Note:

For the purpose of this protocol, major trauma is present if the mechanism of injury or patient's findings meets any one of the following criteria:

MECHANISM OF INJURY

- 1. Death in the same passenger compartment.**
- 2. Fall more than 10 feet.**
- 3. Vehicle-pedestrian collision.**
- 4. Patient ejected from the vehicle.**
- 5. Vehicle collision >20 MPH resulting in 12 inches of deformity to the vehicle.**
- 6. Vehicle rollover.**
- 7. Motorcycle crash.**
- 8. Vehicle vs. bicycle collision >5 MPH.**

PHYSICAL FINDINGS

- 1. Pulse greater than normal range for patient's age (see pediatric appendix).**
- 2. Systolic blood pressure below normal range (see pediatric appendix).**
- 3. Respiratory status inadequate (central cyanosis, respiratory rate low for the child's age, capillary refill time greater than two seconds).**
- 4. Glasgow coma scale less than 14.**
- 5. Penetrating injuries of the trunk, head, neck, chest, abdomen or groin.**
- 6. Two or more proximal long bone fractures.**
- 7. Flail chest.**
- 8. Burns that involve 15% or more of the body surface (10% if associated with other injuries or the child is less than five years old) or facial/airway burns.**
- 9. Combined system trauma that involves two or more body systems, injuries or major blunt trauma to the chest or abdomen.**
- 10. Spinal cord injury or limb paralysis.**
- 11. Amputation (except digits).**

Pediatric Major Trauma, continued

- I. Establish and maintain airway control while manually stabilizing the cervical spine.
- II. Perform initial assessment.
- III. Level of consciousness.
- IV. Assess the child's ventilatory status, including exposing the chest to locate and identify injuries and assess breath sounds.
 - A. **If ventilatory status is inadequate (the child is cyanotic, the respiratory rate is low for the child's age or capillary refill is greater than 2 seconds):**
 1. Ventilate the child with a pocket mask or bag-valve-mask and high concentration oxygen at a rate of up to 20 breaths per minute. Each ventilation given over one second **assuring that there is adequate chest rise with each ventilation.**

Caution:

If head injury is suspected, the Glasgow Coma Scale (GCS) score is less than 8, and active seizures or one or more of the following signs of brain herniation are present, hyperventilate the patient with high concentration oxygen at a rate of 25 breaths/min.

- **Fixed or asymmetric pupils.**
- **Abnormal flexion or abnormal extension (neurological posturing).**
- **Hypertension and bradycardia (Cushing's reflex).**
- **Intermittent apnea (periodic breathing).**
- **Further decrease in GCS score of 2 or more points (neurological deterioration).**

Do not hyperventilate unless the above criteria are met!

2. Seal any open chest wounds with an occlusive dressing. Stabilize impaled objects in the chest.

- B. **If ventilatory status is adequate (the child is breathing spontaneously at a respiratory rate appropriate for the child's age, cyanosis is absent and capillary refill is less than 2 seconds), administer high concentration oxygen (preferably humidified) by a face mask as soon as possible.**

Caution:
Adequate ventilation *may* require disabling the pop-off valve if the bag-valve-mask is so equipped!

- V. Assess the child's circulatory status by palpating the brachial pulse in infants and the carotid pulse in children older than one year of age.

A. If the pulse is absent (Traumatic Cardiac Arrest):

1. Initiate transport **immediately** while performing CPR according to AHA/ARC/NSC guidelines.
2. Take appropriate steps to control hemorrhage.

Note:
Automated External Defibrillator (AED) should not be used in a Pediatric Cardiac Arrest unless the AED is equipped for and FDA approved for use on children!

3. Elevate the foot of the backboard 8 - 12 inches.
4. Notify the receiving hospital as soon as possible.
5. Record all patient care information, including all treatment provided, on a Prehospital Care Report (PCR).

B. If the pulse is present:

1. Identify any life-threatening hemorrhage, if present proceed to step "C".
2. Initiate transport **immediately** while assessing the circulatory status.
3. Perform rapid trauma assessment.
4. Elevate the foot of the backboard 8 - 12 inches.
5. Keep the child warm during transport.
6. Ongoing assessment. Obtain and record the patient's vital signs, including capillary refill, repeat enroute to the hospital as often as the situation indicates.

Pediatric Major Trauma, continued

7. Notify the receiving hospital as soon as possible.
8. Record all patient care information, including all treatment provided, on a Prehospital Care Report (PCR).

C. If life-threatening hemorrhage is present:

1. Initiate transport **immediately** while taking appropriate steps to control hemorrhage.
2. Assess for hypoperfusion enroute, **if clinical picture of hypoperfusion is present (tachycardia, capillary refill greater than 2 seconds, cold clammy skin, thirst, restlessness and/or hypotension).**
3. Elevate the foot of the backboard 8 - 12 inches.

Note:
Do not use MAST
in Pediatric Major Trauma!

4. Keep the child warm during transport
5. Perform rapid trauma assessment.
6. Ongoing assessment. Obtain and record the patient's vital signs, including capillary refill, repeat enroute to the hospital as often as the situation indicates.
7. Notify the receiving hospital as soon as possible.
8. Record all patient care information, including all treatment provided, on a Prehospital Care Report (PCR).

VI. Transport to the appropriate hospital.

- A. Transport the patient to the nearest designated **Regional or Area Trauma Center designated to receive pediatric patients** if the total time elapsed between the estimated time of injury and the estimated time of arrival at the Trauma Center is less one hour (see Appendices for a list of New York State Designated Trauma Centers designated to receive pediatric trauma patients); or
- B. Transport the patient to the **nearest hospital emergency department (ED)** if:
 1. The patient is in cardiac arrest; **or**

Pediatric Major Trauma, continued

2. The patient has an unmanageable airway; **or**
 3. An on-line medical control physician so directs.
- C. Notify receiving hospital as soon as possible..
- D. Record all patient care information, including all treatment provided, on a Prehospital Care Report (PCR)

Pediatric Major Trauma, continued

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)

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.
 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.
- F. Suction each of the infant's nostrils.
 1. Insert a compressed bulb syringe no more than ½ inch into the infant's nostrils.
 2. Suction the infant's nostrils while controlling the release of the bulb with your fingers.

Emergency Childbirth, continued

3. Repeat suctioning 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!

Caution:
Spontaneous respirations should begin within 30 seconds.

- I. Repeat the suctioning process as needed.
- J. 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 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. Provide an oxygen-rich environment for the infant by creating an oxygen hood out of foil or by cupping the end of the oxygen tubing with your hand. **Do not blow the stream of oxygen directly into the infant's face!**
 - e. Ongoing assessment. Obtain and record vital signs, as often as the situation indicates.
 - f. **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:**

Emergency Childbirth, continued

- 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.
 - ii. Administer high concentration oxygen as soon as possible.
 - 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 with high concentration 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**.
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.

Emergency Childbirth, continued

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.

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!**

Emergency Childbirth, continued

- 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.
- 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.