

PEDIATRIC

GUIDELINES

ALTERED LEVEL OF CONSCIOUSNESS

GENERAL CONSIDERATIONS

- A. Any medical or Trauma emergency that effects the brain can cause an altered mental status. Examples include:
- Low blood sugar
 - Poisoning
 - Infection
 - Head injury
 - Decreased oxygen levels
 - Shock
 - The period after a seizure

First Responder

- A. ABC's Manually stabilize cervical spine as per Trauma Protocol if cause of unconsciousness is unknown.
- B. If not breathing, assist ventilation via mouth to mouth using barrier device.
- C. Administer 100% oxygen by NRB mask, if available.
- D. Evaluate patient's general appearance, relevant history of condition and determine:
- | | |
|-----------------------|--|
| <u>O</u> nset | <u>A</u> llergies |
| <u>P</u> rovokes | <u>M</u> edications |
| <u>Q</u> uality | <u>P</u> ast Medical History – especially, |
| <u>R</u> adiates | diabetic, seizures, stroke, |
| <u>S</u> everity | head injury, drug abuse |
| <u>T</u> ime | <u>L</u> ast Meal |
| <u>I</u> nterventions | <u>E</u> vents leading to present illness |
- E. Monitor and reassure patient while you wait for EMT or ALS personnel.

PEDIATRIC
ALTERED LEVEL OF CONSCIOUSNESS

FIRST RESPONDER

| | | | |
|---|---------------------|--|---|
| OPEN & MANAGE AIRWAY 100% O2 NRB PULSE OX MED ALERT | CONSIDER C-SPINE | EVALUATE PT. CONDITION VS, LOC, PUPILS | OBTAIN MEDICAL HISTORY SEIZURES DIABETIC DRUG ABUSE |
|---|---------------------|--|---|

MONITOR AND REASSURE THE
PATIENT WHILE YOU WAIT
FOR EMT OR ALS PERSONNEL

PEDIATRIC ARRHYTHMIA

GENERAL CONSIDERATIONS

- A. In the treatment of cardiac arrhythmia, current American Heart Association guidelines were referred to for protocol development.
- B. Life-threatening cardiac rhythm disturbances in children are more frequently the result rather than the cause of acute cardiovascular emergencies.
- C. In infants and children, arrhythmia should be treated as an emergency only if:
 - 1. The arrhythmia compromises cardiac output, or
 - 2. The arrhythmia has the potential for degenerating into a rhythm that compromises cardiac output.
- D. Initial therapy in children will consist of proper ventilation and oxygenation, along with the assessment of cardiac output.
- E. Transport is essential when advanced cardiac life support is not available within ten minutes of receipt of the call.
- F. Refer to length based drug treatment guide (e.g. BROSELOW PEDIATRIC EMERGENCY TAPE) when unsure about patient weight, age and/or drug dosage.

First Responder

- A. Per current American Heart Association Pediatric Basic Life Support guidelines, establish Unresponsiveness, give two quick breaths, assess pulse and begin compressions indicated. Immobilize cervical spine if indicated.
- B. Assist ventilation with bag-valve mask while administering 100% oxygen or provide mouth to mouth ventilation using barrier device.

PEDIATRIC CARDIO-RESPIRATORY ARREST

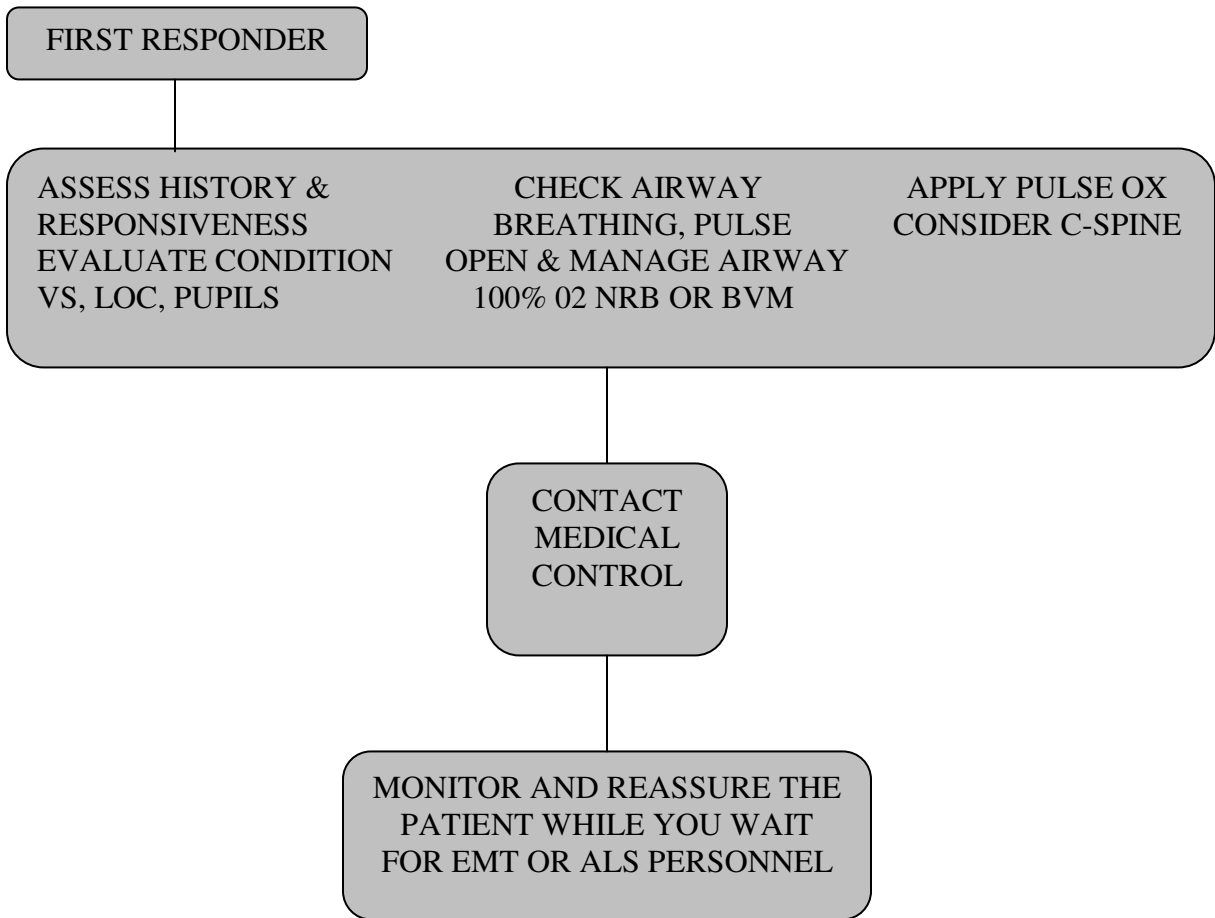
GENERAL CONSIDERATIONS

- A. Cardiac arrest in children is primarily due to the lack of an adequate airway, resulting in hypoxia.
- B. All EMT personnel must concentrate on opening and maintaining the airway and providing 100% oxygenation.
- C. When using BVM ventilation, cricoid pressure can be applied to occlude the esophagus and prevent gastric distention. Cricoid pressure can be applied until an ET tube can be inserted.
- D. Transport immediately when excessive hemorrhage or hypothermia is present. Advanced life support measures should be carried out during transportation.
- E. If Sudden Infant Death Syndrome (SIDS) is suspected:
 - 1. Initiate basic and advanced life support, unless apparent rigor mortis or signs of lividity are present.
 - 2. Be supportive of family.
 - 3. Encourage family to have friends or neighbors accompany them to the hospital.
 - 4. If infants is not resuscitated, refer parents to Social Services at the Emergency Department to initiate counseling.
- F. Refer to length based drug treatment guide (e.g. BROSELOW PEDIATRIC EMERGENCY TAPE) when unsure about patient weight, age and/or drug dosage.

First Responder

- A. Open and maintain airway with sniffing position.
- B. Ventilate with 100% oxygen, via bag valve mask with oxygen reservoir.
- C. Initiate cardiac compressions in accordance with American Heart Association guidelines.

PEDIATRIC ARRHYTHMIA



CHILD ABUSE / NEGLECT

GENERAL CONSIDERATIONS

- A. Child abuse/neglect are widespread enough that nearly all First Responders will see these problems at some time. The first step in recognizing abuse or neglect is to accept that they exist.
- B. Initiate treatment as necessary for situation using established protocols.
- C. If possible remove child from scene, transporting to hospital even if there is no medical reason for transport.
- D. If parents refuse permission to transport, notify law enforcement for appropriate disposition. If patient is in immediate danger, let law enforcement handle scene.
- E. Advise parents to go to hospital. **AVOID ACCUSATIONS** as this may delay transport. Adult with child may not be the abuser.
- F. Carefully document findings and report to physicians at the hospital. An First Responder must also report or assure that actual or suspected child abuse/neglect is reported to the local law enforcement agency or the Children's Services Board.

DOCUMENT THIS NOTIFICATION

DO NOT JEOPARDIZE YOUR SAFETY

FEVER

GENERAL CONSIDERATIONS

- A. If febrile, remove excess clothing, but take great care to avoid shivering. Consider environment and temperature.
- B. Suggest transport or urgent medical attention for all infants < 8 weeks of age with a reported temperature > 100.4F (38C) or age with a reported temperature > 100.4F (38C) or < 96F (35.5C)
- C. Obtain history:
 - 1. Feeding
 - 2. Previous illnesses
 - 3. Degree of Temperature
 - 4. Medications or Therapies Administered
 - 5. Immunizations
- D. Monitor and reassure patient while you wait for EMT or ALS personnel.

MULTI-TRAUMA

GENERAL CONSIDERATIONS

- A. Pediatric Trauma care should primarily follow the Adult Protocol.
- B. Areas where special focus should occur:
 - 1. May involve both respiratory failure and shock.
 - 2. Assessment and support of cardiopulmonary function is fundamental
- C. Common errors of pediatric trauma resuscitation are:
 - 1. Failure to open and maintain the airway.
 - 3. Failure to recognize and treat internal hemorrhage.

NEWBORN RESUSCITATION

GENERAL CONSIDERATIONS

- A. Body heat must always be maintained. As soon as the baby is born, wipe the baby dry and place in a warm environment. The following are ways to maintain body heat:
 - 1. Cover infant's head, place infant against mother's skin, and cover both.
 - 2. Use child seat with heat packs under and beside infant. Be sure to place towels between heat packs and infant.
 - 3. Use indirect, heated, humidified oxygen if available.
- B. Always position infant in the sniffing position (1' towel under shoulders). This will allow for an adequate open airway and drainage of secretions.
- C. Intermittently suction infant until airway is clear of all secretions. Prolonged deep suction may cause bradycardia.
 - 1. Meconium aspiration is a major cause of death and morbidity among infant. If thick meconium is present and not removed adequately a high percentage (60%) of these infant will aspirate the meconium.
 - 2. If meconium is present, suction the mouth and nose thoroughly.
- D. If drying and suction has not provided enough tactile stimulation, try flicking the infant's feet and/or rubbing the infant's back. If this stimulation does not improve the infant's breathing, then BVM may be necessary.
- E. Avoid direct application of cool oxygen to infant's facial area as this may cause respiratory depression due to a strong mammalian dive reflex immediately after birth.
- F. American Heart Association standards will be used as a guideline for Basic Life Support.

First Responder

- A. After delivery of the newborn's head, but prior to delivery of the body, quickly and thoroughly suction mouth, oropharynx, then nose with a bulb syringe.
- B. After delivery of the infant, assess airway and breathing while drying and positioning head down. If amniotic fluid NOT clear, continue to suction PRIOR to ventilating and stimulating.
- C. If infant not breathing, assist ventilations via mouth to mouth using barrier device.
- D. If no pulse or pulse below 60, begin CPR.
- E. Keep infant warm. Wrap in dry blankets.

PEDIATRIC RESPIRATORY DISTRESS

GENERAL CONSIDERATIONS

- A. In children, open airway by using the sniffing position.
- B. In suspected cases of upper airway obstructions, DO NOT attempt to visualize the airway; unless a foreign body is suspected. Keep patient calm and transport upright.
- C. If BVM ventilation is necessary, cricoid pressure can be applied to minimize gastric distention until airway is secured.
- D. Evaluate patient's general appearance, relevant history of condition and determine:

Onset
Provokes
Quality
Radiates
Severity
Time
Interventions

Allergies
Medications
Past Medical History – especially,
RESPIRATORY
Last Meal
Events leading to present illness

UPPER AIRWAY OBSTRUCTION

Stridor, gagging or choking in the breathing patient with respiratory distress may indicate upper airway obstruction.

First Responder

- A. Quickly obtain history and non-invasive respiratory assessment.
 - 1. History of foreign body airway.
 - a. Manual clearing only if foreign body is visible – NO BLIND FINGER SWEEP
 - b. Backblows and chest thrust in children less than 1 yr.
 - c. Abdominal and /or chest thrusts in children over 1 yr.
 - d. If airway cannot be cleared in 60 seconds:
 - i) Do not take history.
 - ii) Do not make further physical assessment.
 - 2. Other cause of upper airway obstruction.
 - a. DO NOT AGITATE CHILD, DO NOT EXAMINE THROAT.
 - b. Administer oxygen by NRB if tolerated or by “blow-by”

- B. Allow the child to assume a position of comfort. The child may assume the tripod position. Encourage parent to hold the child upright. Keep child and parent (or care-giver) CALM. Do not agitate child.
- C. Monitor and reassure patient while you wait for EMT or ALS personnel.

PEDIATRIC RESPIRATORY DISTRESS

UPPER AIRWAY OBSTRUCTION

Wheezing in the breathing patient with respiratory distress indicates lower airway disease, which may come from a variety of causes. The patient with severe lower airway disease may have altered LOC, be unable to talk, may have absent or markedly decreased breath sounds and severe retractions with accessory muscle use.

First Responder

- A. Place child in position of comfort, encourage parent to hold child upright. Keep child and parent CALM.
- BI Quickly obtain history and non-invasive respiratory assessment.
- C. Administer 100% oxygen in the least threatening manner.
- D. If respiratory effort is insufficient or patient is becoming unconscious, assist ventilations with bag-valve-mask.
 1. If allergic reaction is suspected:
 - a. Secure airway and support with oxygen.
 - b. Ask patient or bystanders if epinephrine by auto-injector has been prescribed for these situations, administer medication as per protocol
 2. For other causes of wheezing:
 - a. Ask patient or bystanders of a bronchial dilator by inhaler has been prescribed for these situations. If they have the medication with them, administer medication as per protocol.
 3. Monitor and reassure while you wait for EMT or ALS personnel.

PEDIATRIC SEIZURE

GENERAL CONSIDERATIONS

- A. The seizure has usually stopped by the time the EMS personnel arrive. The patient will normally be in the postictal state.
- B. The basic rule with seizures is to “protect and support” the patient.
- C. Aspiration precautions should include:
 - 1. Coma position: a left side-lying position with the head lowered 15 to 30 degrees.
 - 2. Suction readily available
 - 3. Clear mouth of foreign bodies (food, gum, etc.)
- D. Febrile Seizures (seizures with fever) are common in children and should be treated like other seizures.

First Responder

- A. Place patient away from objects on which they might injure themselves; protect but do not restrain them.
- B. Clear and maintain airway; consider C-Spine injury.
- C. Administer 100% oxygen with NRB as needed for ventilation.
- D. Obtain history from family and/or bystanders:
 - 1. Seizure history
 - 2. Description of onset of seizure
 - 3. Medication
 - 4. Other known medical history, especially fever, head trauma, diabetes, drugs
- E. Evaluate any evidence of injury, especially head trauma.
- F. Monitor and reassure patient while you wait for EMT or ALS personnel.

PEDIATRIC SHOCK

GENERAL CONSIDERATIONS

- A. Shock is not only caused by blood loss. The First Responder must evaluate for fluid loss from other causes such as excessive vomiting and/or diarrhea, heat exposure, severe infection, severe allergic reaction (anaphylaxis), spinal trauma, and heart failure.
- B. Do not use only the patient's blood pressure in evaluating shock; also look for lower body temperature, poor capillary refill, decreased level of consciousness, increased heart rate, and/or poor skin color or turgor.
Tachycardia is often the first sign of shock.

NOTE: DO NOT depend on blood pressure

First Responder

- A. Open and maintain the airway with sniffing position and the use of an oral airway if needed.
- B. Control all external bleeding and evaluate for internal hemorrhage and/or dehydration.
- C. Provide 100% oxygen through NRB mask, and if needed assist ventilations with a BVM.
- D. Obtain vital signs: pulse and respirations.
- F. Monitor and reassure patient while you wait for EMT or ALS personnel.

CHILDREN WITH SPECIAL NEEDS

GENERAL CONSIDERATIONS

- A. Children formerly cared for in hospitals or chronic care facilities are often cared for in homes by parents or other caretakers. These children may have self limiting or chronic diseases. Many are often unstable and may frequently involve the EMS system for evaluation, stabilization, and transport.
- B. Knowing which children in a given area have special needs and keeping a log book can be very useful.
- C. Parents and caretakers are usually trained in emergency management and can be of assistance to EMS personnel.
- D. Special needs children include children with tracheotomy tubes with or without assisted ventilation, children with gastrostomy tubes, and children with indwelling central lines. Most serious complications of these devices are related to tracheotomy problems.

EMERGENCIES IN CHILDREN WITH TRACHEOSTOMIES

First Responder

- A. Examine the child quickly for possible causes of distress which may be easily correctable, such as a detached oxygen source.
- B. Try to establish the child's baseline: the child may never look normal.
- C. If on a ventilator, remove the child from the ventilator and bag the child with a secure oxygen source; there may be a problem with the ventilator or oxygen source.
- D. Monitor and reassure patient while you wait for EMT or ALS personnel.

EMERGENCIES IN CHILDREN WITH INDWELLING CENTRAL LINES

GENERAL CONSIDERATIONS

- A. Children may have central lines in several locations and some complications are due to location; some central lines are located under the skin and can be felt but not seen.
- B. The most common emergencies with central lines include, blockage of the line, complete or partial accidental removal, or complete or partial laceration of the line.

First Responder

- A. Always evaluate child for cardiovascular stability as some complications may be life threatening.
- B. Children may be experiencing complications from their underlying medical condition; ask caretakers about the child's condition.

EMERGENCIES IN CHILDREN WITH GASTROSTOMY TUBES LINES

GENERAL CONSIDERATIONS

- A. Children with gastrostomy tubes may have complications of obstruction or dislodgement; obstruction is usually not an emergency but the child may require transport; dislodgement is not life threatening but the tube should be replaced as soon as possible. Both conditions are easily recognized.
- B. The child should be examined for any other possible problems.

First Responder

- A. Children who have problems with their tubes may have problems with regurgitation or aspiration.

EMERGENCIES IN CHILDREN ON VENTILATORS

GENERAL CONSIDERATIONS

- A. Children on mechanical ventilation may exhibit sudden or gradual deterioration, cardiac arrest, increased oxygen demand, increased respiratory rate, retractions, change in mental status.
- B. Examine the child quickly for possible causes of distress which may be easily correctable (e.g. detached oxygen source) the caretakers will often have done this but double check.
- C. Medications the child is presently taking may be the cause of deterioration.
- D. Try to establish the child's baseline; the child may never look normal.
- E. Remove the child from the ventilator and bag the child with a secure oxygen source; if the child improves there may be a problem with the ventilator or oxygen source.
- F. Monitor and reassure patient while you wait for EMT or ALS personnel.

NORMAL PEDIATRIC VITAL SIGNS

| AGE | PULSE | RESPIRATION | BLOOD PRESSURE |
|--------------|---------|-------------|--|
| NEWBORN | 120-150 | 30-60 | Systolic = 60-70 |
| < 1 year | 120-140 | 30-50 | Systolic = 70+ (2 x age) Diastolic = 2/3 systolic |
| 1 - 2 years | 100-140 | 30-40 | |
| 3 - 5 years | 100-120 | 20-30 | |
| 6 - 10 years | 80-100 | 16-20 | |

NORMAL COMA SCORING

| | CHILD | INFANT | |
|------------------------|-------------------|-----------------------------|----------|
| Eye Opening | Spontaneous | Spontaneous | 4 |
| | To voice | To voice | 3 |
| | To pain | To pain | 2 |
| | None | None | 1 |
| Verbal Response | Oriented | Coos, babbles | 5 |
| | Confused | Irritable cry, inconsolable | 4 |
| | Inappropriate | Cries to pain | 3 |
| | Abnormal speech | Moans to pain | 2 |
| | None | None | 1 |
| Motor Response | Obeys commands | Normal movements | 6 |
| | Localizes pain | Withdraws to touch | 5 |
| | Withdraws to pain | Withdraws to pain | 4 |
| | Flexion | Flexion | 3 |
| | Extension | Extension | 2 |
| | Flaccid | Flaccid | 1 |

