

Clark County Pre-hospital

Patient Care

Protocols

And

Procedures

Patient Care Protocols

General Guidelines for the Use of These Protocols

All levels of care are shown on the same page for each protocol (except for those for adult cardiac arrest). This is to allow for a more unified approach to caring for a patient, especially when caregivers of differing levels are involved with treating patients.

The levels of care are “stacked” according to the level of the caregiver. First Responders, EMT’s and Intermediates perform the appropriate steps listed under the appropriate caption. Paramedics do the steps listed under all sections. The exceptions are the adult cardiac arrest protocols; they are not stacked since each level has its own protocol.

The order of the steps is a recommendation, not an absolute. For example, with a patient in pulmonary edema, you can start an IV before putting on the pulse oximeter, if it is in the best interest of the patient’s care.

The order of the numbered steps in these protocols should generally be followed in sequence; in these cases, order is important to the best interest of patient care. Every step in the protocol may not have to be completed; if the patient responds adequately to the earlier therapies in the protocol and is stable, further treatment listed later in the protocol may not be needed.

Medications or procedures that require Medical Control authorization follow the phrase “Contact Medical Control”. All others are standing orders.

If not specified in the protocol, contact Medical Control to advise the patient’s status when you are enroute to the hospital.

Details of complex procedures such as intubation, AED use, and IV access are listed in the “Medical Procedures” section of the protocols, rather than in the individual protocols themselves. This allows the individual protocols to remain uncluttered and easier to follow.

All medications are in bold type to improve readability.

“Transport; request ALS intercept if available, but do not delay transport” means as the patient situation and EMS system resources allow, call for an ALS unit to meet you enroute to the hospital. Do not delay transporting the patient or wait for the ALS unit to arrive at a designated point. If you call for an ALS intercept and one is not available, you are to document such in your patient care report.

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PROCEDURES

IV ACCESS

ADVANCED / INTERMEDIATE / PARAMEDIC

Indications:

Venous access by saline lock or IV placement should be established when fluid replacement may be indicated (or when there is a reasonable expectation that fluid replacement or intravenous medications will be necessary)

Procedure:

- ❖ Use peripheral IV sites (including the external jugular for adults as last option)
 - The forearm is the preferred site, followed by the dorsum of the hand.
- ❖ Intermediates and Paramedics can use intraosseous access where threat to life exists for pediatric patients under 6 yrs old.
- ❖ Use the largest catheter bore necessary based upon the patient's condition and size of veins.
- ❖ Fluid and setup choice is preferably:
 - Lactated Ringers or Normal Saline with a macrodrip for trauma or hypovolemia
 - Normal Saline with a macrodrip for medical conditions
 - Normal Saline with a microdrip and regulatory extension set for medication infusions/pediatric patients.
- ❖ Rates are preferably:
 - Adult KVO: 30cc/hr
 - Pediatric KVO: 3cc/kg per hr up to 30ml/hr
- ❖ If shock is present:
 - Adult: 250 cc fluid boluses repeated **as long as lungs are dry**.
 If systolic BP<90 consider a second IV line.
 - Pediatric: 20cc/kg boluses repeated PRN for poor perfusion
- ❖ A blood glucose determination should be performed on all IV starts.

**IT IS NEVER ACCEPTABLE TO SIT IN A PARKED
AMBULANCE FOR THE SOLE PURPOSE OF
ATTEMPTING TO GAIN VENOUS ACCESS.**

INTRAOSSIOUS CANNULATION

INTERMEDIATE / PARAMEDIC

Indications:

- ❖ Pediatric patients (under 6 years old) where rapid, regular IV access is unavailable with any of the following:
 - Cardiac arrest
 - Multisystem trauma with severe hypovolemia
 - Severe dehydration with vascular collapse and/or loss of consciousness
 - Respiratory failure / Respiratory arrest
-

Contraindications:

- ❖ Fracture proximal to proposed intraosseous site
 - ❖ Prior infection at proposed intraosseous site
 - ❖ Previous intraosseous puncture at proposed site
-

Procedure:

- 1) Don personal protective equipment
- 2) Identify anteromedial aspect of the proximal tibia approximately 1 to 3 cm below the tibial tuberosity.
- 3) Prepare the site with providone-iodine solution.
- 4) Using a twisting motion, insert the intraosseous needle at a 60 to 90 degree angle aimed away from the nearby joint and epiphyseal plate. You should note a decrease in resistance as the needle enters the marrow.
- 5) Remove the stylette.
- 6) Attach a 10cc syringe filled with 5cc of NS or LR; aspirate bone marrow, if possible, to verify placement then inject 5cc of NS or LR to clear the lumen of the needle.
- 7) Attach the IV line and adjust the flow rate.
- 8) Secure IO needle with dressings and tape.
- 9) Following the administration of any IO medications, flush the IO line with at least 10cc of IV fluid to expedite medication absorption.

AUTOMATIC EXTERNAL DEFIBRILLATOR

ALL LEVELS

Indications:

- ❖ Patients greater than 1 yr of age in cardiac arrest (pulseless and apneic)

Contraindications:

- ❖ Age less than 1
- ❖ Not in contact with a metal surface
- ❖ Not in a pool of water or on a wet chest
- ❖ Or as specified by the manufacturer

Procedure:

- 1) Perform 5 cycles of CPR (30:2 ratio) before AED usage IF no bystander CPR in progress upon arrival. After powering on the AED apply defibrillator pads preferably to upper right anterior chest and lower left anteriolateral chest only to pulseless patient. Use alternate placement (1-2" below) when implanted devices occupy preferred pad placement. Examples: pacemaker, AICD, IV port. If pads overlap in small children, use anterior/posterior placement. **NOTE** : If there is a switch on the AED for children under 8 yrs OR pediatric pads, use them for ages 1-8 yrs. If not proceed with adult pads.
- 2) Remove any medication patches on the chest and dry the surface.
- 3) Connect defibrillator leads: White to upper right pad and red to the lower left pad.
- 4) Activate AED for analysis of rhythm.
- 5) If AED advises to defibrillate (V-Fib or V-Tach):
 - a. Ensure ALL rescuers are CLEAR of the patient.
 - b. Defibrillate as per machine programming **
- 6) Begin CPR (chest compressions and ventilations) as directed by the AED.
- 7) After 2 minutes of CPR, analyze the rhythm and defibrillate if indicated. Repeat this step up to a total of 9 defibrillations.
- 8) Contact Medical Control for option of additional defibrillations.

If a pulse returns:

See Post Resuscitation Protocol

**EMS Providers are required to meet Dec. 2005 AHA guidelines by March 31, 2007

Notes: See individual protocols for additional steps and therapies (medications, intubation, etc.)

TRANSCUTANEOUS CARDIAC PACING

PARAMEDIC ONLY

Indications:

- 1) Monitored heart rate less than 60 per minute **with** hypotension and signs/symptoms of inadequate cerebral or cardiac perfusion such as:
 - a. Chest pain
 - b. Decreased level of consciousness
 - c. Congestive Heart Failure
 - d. Ventricular ectopy
2. Asystole, where reversible causes have been identified
3. PEA, where the underlying rhythm is bradycardic and reversible causes have been treated.
 - Hypovolemia
 - Hypoxia
 - Hydrogen ion-acidosis
 - Hyper-/hypokalemia
 - Hypothermia
 - Tablets/Poisoning/Overdose
 - Tamponade, cardiac
 - Tension pneumothorax
 - Thrombosis, coronary
 - Thrombosis, pulmonary

Procedure:

- 1) Attach standard three lead monitor.
- 2) Apply defibrillation/pacing pads to chest wall.
 - a. One pad to upper right chest, one to lower left chest
 - b. Alternate pad placement of anterior-posterior is also acceptable
- 3) Consider sedation with **by MCP order only: Lorazepam 2mg diluted slow IVP.**
- 4) Press PACER button.
- 5) Adjust heart rate to 70 bpm for an adult and 100 bpm for a child.
- 6) Press the START/STOP button.
- 7) Increase current in increments of 20mA until capture of electrical rhythm on the monitor.
- 8) Decrease current in increments of 5mA to obtain lowest energy level necessary.
- 9) If unable to capture while at the maximum current output, STOP pacing immediately.
- 10) If capture is observed on the monitor, check for corresponding pulse and assess vital signs.

OROTRACHEAL INTUBATION

INTERMEDIATE / PARAMEDIC

Indications:

- ❖ Apneic or respiratory failure
- ❖ Hypoventilation with decreased LOC
- ❖ Unsecure airway
- ❖ GCS \leq 8

Contraindications:

- ❖ Presence of a gag reflex
- ❖ Relative contraindications
 - Blood clotting abnormalities
 - Upper neck hematomas or infections

Procedure:

- 1) Don personal protective equipment.
- 2) Prepare, position, and oxygenate patient.
- 3) Choose proper endotracheal tube.
- 4) Assemble and check needed equipment
- 5) Visualize tube passing through glottic opening.
- 6) Inflate cuff with 5-12cc of air. Secure the tube.
- 7) Check for absence of ventilation sounds over the epigastrium with BVM ventilation.
- 8) Confirm the presence of breath sounds over the right and left lung fields.

If you are unsure of tube placement, remove tube and hyperventilate patient with a bag valve device

** ETT attempts should NOT take more than 30 seconds without BVM ventilations between attempts

- 9) Consider using bag valve device if ET intubation efforts are unsuccessful after 3 attempts.
- 10) Apply end tidal carbon dioxide detector and monitor expired CO₂.
- 11) Reassess airway and breath sounds each time after moving the patient.
- 12) Document each reassessment in the narrative.

NASOTRACHEAL INTUBATION

PARAMEDIC ONLY

Indications:

- ❖ Respiratory distress with pending respiratory failure
 - ❖ Hypoventilation with decreased LOC
 - ❖ Unsecure airway
 - ❖ $GCS \leq 8$
-

Contraindications:

- ❖ Non breathing or near apneic patient
 - ❖ Relative contraindications
 - Blood clotting abnormalities
 - Massive facial fractures
 - Nasal polyps
 - Upper neck hematomas or infections
 - Head trauma with possible basal skull fracture
-

Procedure:

- 1) Don personal protective equipment.
 - 2) Prepare, position, and oxygenate patient.
 - 3) Choose proper ET tube about 1mm smaller than for oral intubation, instill NeoSynephrine into appropriate nostril.
 - 4) Lubricate ET tube generously with Xylocaine Jelly or water soluble lubricant.
 - 5) Pass the tube through into the largest nostril with the beveled edge against the nasal septum and perpendicular to the facial plate.
 - 6) Use forward and lateral back and forth rotational motion to advance the tube.
 - 7) Never force the tube.
 - 8) Continue to advance the tube noting air movement through it, use a BAAM (Beck Airway Airflow Monitor) whistle to assist you, if available.
 - 9) Apply firm, gentle cricoid pressure and advance the tube quickly past the vocal cords during inspiration.
- **Attempts should NOT take more than 30 sec without BVM ventilations between attempts.
- 10) Inflate the cuff with 5-12cc of air, secure the tube.
 - 11) Check for absence of ventilation sounds over the epigastrium with BVM ventilations.
 - 12) Confirm the presence of breath sounds over the right and left lung fields.
 - 13) Apply end tidal carbon dioxide detector and monitor expired CO₂.
 - 14) Reassess airway and breath sounds each time after moving the patient.
 - 15) Document each reassessment in the narrative.

NEEDLE DECOMPRESSION OF TENSION PNEUMOTHORAX

INTERMEDIATE / PARAMEDIC

Indications:

- ❖ Patient with suspected or confirmed chest trauma, decreased or absent breath sounds on affected side **and** any of the following signs:
 - Poor ventilation
 - Jugular vein distention
 - Tracheal deviation away from the side of the injury
 - Hyperresonance to percussion on the affected side
 - Shock/Hypotension
 - Increased resistance when ventilating a patient
-

Contraindications:

- ❖ None for patients meeting the above criteria
-

Procedure:

- 1) Don personal protective equipment
- 2) Administer high flow oxygen
- 3) Identify the anterior site:
 - Locate the second to third intercostal space on the midclavicular line, same side of the tension pneumothorax
 - Prepare the site with an iodine solution
 - Insert the catheter into the skin over the third rib and direct it just over the top of the rib (superior border) into the interspace
- 4) Advance the catheter through the parietal pleura until a “pop” is felt and air or blood exits under pressure through the catheter.
- 5) Remove the needle leaving the plastic catheter in place.
- 6) Secure the catheter hub to the chest wall with dressings and tape.
- 7) Consider placing a finger cut from an exam glove over the catheter hub. Cut a small hole in the end of the finger to make a flutter valve. Secure the glove finger with tape or a rubber band. (Note – don’t waste time preparing the flutter valve. If necessary, control the air flow through the catheter hub with your gloved finger).

TRANSPORTATION OF PATIENTS

ALL LEVELS ABOVE FIRST RESPONDER

General:

- ❖ Traumatic cardiac arrests with signs of “life” (agonal respirations, pulse but no pressure, non-asystolic EKG) shall be transported to the closest trauma center
 - ❖ Medical cardiac arrest patients shall be transported to the closest appropriate facility.
-

Diversion:

- ❖ In the event that a hospital is on diversion:
 - Continue to transport all cardiac arrest patients to the closest appropriate hospital (per above guidelines) regardless of diversion status.
 - Continue to transport all patients that have multisystem trauma to the closest trauma center.
 - Inform stable patients and transport them to their second choice hospital.
 - Transport unstable patients to the closest nondiverting hospital.
-

Non-Transport:

- ❖ Competent patients maintain the right to refuse care and/or transport. If unsure, contact Medical Control.
- ❖ All patients refusing will be:
 - Informed of the availability of service
 - Advised to call EMS back for emergency service if desired later
 - Advised that they accept full responsibility for their actions
- ❖ **Contact Medical Control if ALS treatment has been started and the patient declines transport. Give the Medical Control Physician an explanation of the situation and request permission to discontinue the treatment. Obtain the physician’s name and include it in the report narrative.**
- ❖ Documentation:
 - In the report narrative, describe the patient encounter, advice given, that the patient is alert and oriented to person, place, time, and event, and that the patient understands the instructions given to them.
 - Have the patient sign a refusal. If possible, have a third party witness the signature.

DELEGATION OF CARE: ALS PERSONNEL RESPONDING WITH OTHER PERSONNEL

- A. Patient care may be delegated from the Paramedic to other levels of care under the following conditions:
 - 1. The patient must be stable and not meet any criteria for ALS transportation.
(See Requesting ALS/ALS Transportation Protocol)
 - 2. **The EMT will be fully informed of the Paramedic's assessment and anticipated patient needs.**
 - 3. The EMT must feel comfortable accepting the patient for treatment / transport.
 - 4. The patient has not received ALS treatment such as IV therapy, intubation, ALS medications or any other invasive procedure that the provider of care is unable to maintain.

- B. The Paramedic will initiate a run sheet with all appropriate data reflecting the Paramedic's assessment and care up until the time of release to the EMT or Intermediate. The EMT/Intermediate will complete the patient care report as in any other patient care situation.

- C. In the event the patient refuses transportation, the paramedic or highest level available should complete the patient care report.

- D. In the event the patient is deemed non-viable, the paramedic is to determine the non-viability of the patient, follow the appropriate guidelines and complete the run sheet. The paramedic may then delegate the transport of the deceased.

REQUESTING ALS / ALS TRANSPORTATION

ALS should be requested / transport if the patient has one or more of the following conditions. However, if the BLS crew is able to deliver the patient to an emergency room within the same time it would take for the ALS crew to arrive at the scene, the BLS crew should transport the patient.

- A. Chief complaint of shortness of breath or acute respiratory distress.
- B. Chest pain (unless other signs and symptoms indicate that the chest pain is obviously from a non-life threatening source).
- C. Recent onset of disorientation to person, place, time or time passage.
- D. Uncontrollable bleeding.
- E. Unconsciousness.
- F. Status epilepticus.
- G. An obstetrics patient >20 weeks gestation with or without trauma who is having contractions **AND** has evidence of meconium staining **OR** has excessive vaginal bleeding.
- H. Any birth occurring prior to 38 weeks gestation (more than 2 weeks before expected due date).
- I. Any unstable patient with significant trauma.
- J. Any patient who has had an episode of fainting or near fainting.
- K. There is any uncertainty as to the patient's status.
- L. Abnormal vital signs and symptomatic.

DIVERSION

ALL LEVELS

The following serves as a guideline for providers in Clark County. Your role as an EMS provider is to act in the best interest of your patient. Diversion status is updated every four hours.

When a hospital is on diversion you are to explain the situation to the patient. Other facilities may have different guidelines, however, when Clark Memorial is on diversion it is due to the limited space available for that specific acuity of patient because we are holding patients in the Emergency Department. It may be in the patient's best interest to seek medical attention at another appropriate facility under these circumstances. If they refuse to be diverted you have the option to call the Emergency Department and seek advice from the physician.

If both Clark Memorial and Floyd Memorial or Clark Memorial and St. Catherine Regional Hospital are on the same type of diversion each hospital will have to take their own patients IF the patient refuses to be transported to another facility. In essence, then, if both hospitals are on the same type of diversion they cancel one another. The same is true of diversion in Jefferson County, Kentucky. If a specific number of hospitals in Louisville are on diversion then they cancel the diversion for all area hospitals for the next four hours.

When extended care facilities call the Emergency Department to give a patient report, they will be advised of the diversion status so they may call the primary care physician and perhaps make better arrangements for the patient. Extended care facilities are to call the receiving facility before transporting the patient. Sometimes this is overlooked. If you are asked to transport an extended care patient you also need to advise them of a hospital's diversion status so that you do not get caught in the middle.

If you have a cardiac arrest or are unable to secure an airway for your patient, you are to transport to the closest facility.

PATIENT SELF MEDICATION

BASIC / ADVANCED / INTERMEDIATE / PARAMEDIC

Indications:

- ❖ A person wishes to take his/her own medication or prescription
-

Prescription:

- ❖ Contact Medical Control for physician authorization.
- ❖ If advised to do so, Basic and Advanced EMT's may assist with the patient's medication. They may not administer or carry any drugs except EpiPen Auto Injectors for adult anaphylaxis (by MCP only).
- ❖ Intermediates and Paramedics may administer medicine other than the patient's own, as outlined within these protocols.

VERIFICATION OF MEDICAL PERSONNEL ON THE SCENE

ALL LEVELS

Indication:

- ❖ A licensed physician at the scene who wishes to assume medical responsibility for the patient

Procedure:

- ❖ EMS personnel are operating under the supervision of the emergency department physician.
- ❖ In general, on scene medical physicians will be courteously dissuaded from participating in patient care.
- ❖ The highest level of care on the scene will have control of the patient except when:
 - A physician identifies himself as a physician and can produce a State of Indiana Professions Bureau license and is willing to assume ALL medical and legal responsibilities for the patient and meets either of the following
 - A. The physician must:
 - Be willing to sign the run sheet for all orders given.
 - Be willing to sign any required provider specific forms.
 - Make radio or telephone contact with Medical Control and be willing to accompany the patient to the hospital in the ambulance.
 - B. Or the EMS personnel feel the physician may be helpful in rendering care to the patient within the scope of these protocols or if the physician possesses special knowledge about the patient or can perform special skills the patient may need.
- ❖ If the physician requests an intervention that, according to pre-hospital standards of care, is inappropriate or detrimental to the patient, the on scene EMS personnel will treat the patient as outlined by the appropriate protocols. They will then refer the on scene physician to Medical Control.
- ❖ At no time should lifesaving medical care be delayed in order to establish identities or Medical Control. It is the responsibility of the on scene EMS personnel to institute appropriate medical care as soon as possible.

DECEASED PATIENTS

ALL LEVELS

Indications: Apneic and pulseless patient, asystolic in 2 leads with one or more of the following is present:

- Rigor mortis
- Dependent lividity
- Decapitation
- Decomposition
- Incineration
- Major blunt or penetrating trauma with no signs of life upon initial examination

Procedure:

- ❖ Do not resuscitate any patient who meets the above criteria. If resuscitation efforts are in progress, **Contact Medical Control** for physician consultation to consider termination of resuscitation efforts.
- ❖ Notify the coroner and/or law enforcement of the patient's death (or patient's physician if the patient is in a medical facility with continual physician or nursing care during its hours of operation).
 - Hospital, nursing home, physician's office

NOTE:

***If you are unsure whether the patient meets the above criteria, resuscitate!!!**

CONTRAINICATION: Medical arrest, drowning or hypothermia.

DO NOT RESUSCITATE ORDERS

ALL LEVELS

Indications:

- ❖ A pulseless, nonbreathing patient who normally would require resuscitation **AND** has:
 - A properly completed state approved DNR form, **contact MCP**

Procedure:

- 1) Verify that the patient is the person named in the DNR form or order (If in doubt, resuscitate).
- 2) Cease all resuscitation efforts.
- 3) Notify coroner and/or law enforcement of the patient's death.
- 4) Attach the DNR form or a photocopy to the original of the ambulance run sheet.

NOTES:

- ❖ **When the patient is not in cardiac arrest, requires care, and has a properly completed DNR form, provide the care and transport both the patient and the DNR form to the hospital.**
- ❖ Prehospital care professionals cannot honor other legal documents such as living wills and verbal (e.g. via telephone) orders.

**Exceptions to this procedure must be approved by
a Medical Control Physician**

INTERFACILITY TRANSPORTS

BASIC

Basic EMT's may transport simple IV fluids where the IV is infusing into a peripheral site.

ADVANCED

Advanced EMT's may transport the following fluids:

- ❖ Vitamins
- ❖ Sodium chloride, excluding saline solutions in excess of 0.9% concentration
- ❖ Potassium Chloride (forty (40) mEq/liter maximum)
- ❖ Lactated Ringers and D5W

INTERMEDIATE / PARAMEDIC

The transporting personnel may maintain any infusion **excluding** blood products approved by the medical director provided:

- a) The caregiver is familiar with the medication being infused.
- b) The medication is being regulated by an IV pump while enroute to the new medical facility.
- c) The patient has stable vital signs prior to departure from the facility.
- d) The medication is approved by Public Safety Training Institute (PSTI) for your level of certification.

The transporting crew should ensure that all appropriate documentation accompanies the patient.

While in transit to the new facility, all appropriate standing orders shall remain in place.

If the patient deteriorates, the transferring facility should be notified via radio or cellular phone.

If additional orders are needed, Medical Control should be contacted to issue those orders.

The medication dose will NOT be changed or discontinued without a MCP order.

HELICOPTER UTILIZATION

ALL LEVELS

Indications:

A helicopter may be utilized when all of the following criteria occur:

- 1) The patient meets criteria for trauma center evaluation.
- 2) The patient is entrapped and extrication is expected to be greater than 20 minutes.
- 3) The ground transport time is greater than 20 minutes.
- 4) The patient must not be a trauma cardiac arrest.
- 5) Any other situation approved by the Medical Control physician.

Procedure:

- 1) The highest certified technician on the crew (usually an Intermediate EMT or paramedic) will determine that a helicopter may be needed for the patient.
- 2) **ALL** helicopter requests will be made through Central Alarm.
- 3) A safe landing zone should be established.
- 4) If the helicopter does not arrive prior to extrication of the patient, the patient should be immediately placed in the ambulance and transport begun to the nearest trauma center.
- 5) Helicopter dispatch times and on scene times will be obtained from Central Alarm and documented on run report.

**UNDER NO CIRCUMSTANCES WILL TRANSPORT OF
A PATIENT BE DELAYED TO USE A HELICOPTER
FOR TRANSPORT**

DOCUMENTATION

ALL LEVELS

Clear and concise documentation of all events including scene assessment, treatment, and transportation should be made for every patient encounter. For each patient contact, the following must be documented at a minimum:

- 1) A clear history of the present illness including chief complaint, time of onset, associated complaints, pertinent negatives, mechanism of injury, etc.
- 2) A complete physical assessment including pupil response, breath sounds, motor function, abdominal exam, chest exam, head exam, extremity exam, etc.
- 3) An exact level of consciousness.
- 4) At least one complete set of vital signs (pulse, respirations, and an **auscultated blood pressure**). These vital signs should be repeated every 5 minutes for critical patients, every 10 minutes for stable patients, and after every drug administration. A reason must be documented for a lack of complete vital signs.
- 5) For drug administrations, you must document the dosage of the drug, route of administration, time of administration, and any response to the drug.
- 6) A complete listing of treatments performed in chronological order. Any response to these treatments should also be listed.
- 7) For patients with an extremity injury or spinal immobilization, neurovascular status and motor function must be noted before and after immobilization.
- 8) For IV administration, document the size of the IV catheter, placement of the IV, number of attempts, type of fluid, and flow rate.
- 9) **A Lead II strip should be attached for all patients placed on the cardiac monitor with a copy for audited charts.** Any significant rhythm changes should be documented. For cardiac arrest, the initial strip, ending strip, pre and post defibrillation, pacing attempts, etc.
- 10) For intubations, centimeter mark at teeth, methods to confirm placement, the size of the ET tube, and number of attempts.
- 11) Any orders requested whether approved or denied should be documented clearly including the physician's name.
- 12) Documented waste of Ativan and Morphine with signature of witness at receiving facility on the narrative or medication page.
- 13) Times, mileage, provider name and location of each responding unit should be added to run report to complete the patient care report.
- 14) Failure to complete documentation times will result in a written warning for the 1st occurrence, 2nd occurrence a meeting with the medical director, and 3rd occurrence a possible suspension.

PATIENT RESTRAINT PROTOCOL

PURPOSE:

To ensure safety that is conducive to both EMS personnel and the patient involved

ALL LEVELS

NO SUSPICION OF C-SPINE COMPROMISE (NON-TRAUMATIC)

- 1 Ensure safety of EMS personnel.
- 2 Attempt to reason and rationalize with the patient in order to calm them down before progressing to restraining them.
- 3 Once the decision to restrain has been made, ensure enough assistance to safely restrain the patient.
- 4 The patient should be placed on a backboard in the supine position. The head of the stretcher/backboard may be elevated.
- 5 The patient's upper extremities should be secured with soft restraints¹ in the following manner:
 - a. With one hand above their head and one at their waist.
- 6 Secure the patient's legs with thigh straps and lower leg straps with soft restraints².
- 7 Contact **MCP** for further assistance if needed.

SUSPICION OF C-SPINE COMPROMISE (TRAUMATIC)

- 1 Ensure the safety of EMS personnel
- 2 Attempt to reason and rationalize with the patient in an attempt to calm them down before progressing to restraining them
- 3 Ensure enough assistance to safely restrain the patient
- 4 Immobilize the patient in the normal fashion (C-collar, long back board, spider straps, head immobilization device)
- 5 The patient's upper extremities should be secured to the backboard with soft restraints³
- 6 Secure the patient's legs to the backboard with thigh straps and lower leg straps.
- 7 Contact **MCP** for further assistance if needed.

HANDCUFFS ARE NOT TO BE USED AS RESTRAINT DEVICES UNLESS THE POLICE OFFICER ACCOMPANIES THE PATIENT TO THE HOSPITAL IN THE AMBULANCE PATIENT COMPARTMENT.

¹ Cravats, kling, soft restraints

² Cravats, kling, soft restraints

³ Cravats, kling, soft restraints

INITIAL MEDICAL CARE

ALL LEVELS

When the medical responder determines the need to provide medical care, the following shall serve as a guideline for the initial medical assessment and management.

- 1) Assess the scene for safety and call for the appropriate support if needed.
- 2) Gain control of both the scene and the patient, eliminating as many risks as possible.
- 3) Determine if the patient is conscious.
- 4) Ensure that the patient has an open and maintainable airway, correcting any deficits as necessary.
- 5) Ensure that the patient is breathing adequately. Assess the rate, depth, and effort of breathing. Correct any deficits as necessary. Administer oxygen as indicated by the specific protocol.
- 6) Ensure that the patient has a pulse. If absent, and unless otherwise indicated by protocol, begin CPR. If the patient has a central pulse, assess for distal pulses and compare the quality of these.
- 7) Establish the patient's level of consciousness (using A-V-P-U).
- 8) If not contraindicated by protocol, place the patient in a position of comfort. Loosen tight clothing and reassure the patient.
- 9) Using teamwork, complete:
 - a. Determination of the chief complaint
 - b. Vital signs
 - c. Pertinent current and past medical history
 - d. Medications (including compliance) and known allergies
 - e. Appropriate physical examination
 - f. Monitor the cardiac rhythm by ECG (required if any medications or fluids are administered).
 - g. Determine blood glucose level if indicated by protocol.
- 10) Provide appropriate medical treatment based upon the patient's clinical presentation. Use the appropriate protocol. Be able to adjust your treatment to the specific needs of each patient.
- 11) Reassess vital signs and document them on the required forms.
- 12) Do not delay transport unnecessarily.

LOAD AND GO SITUATIONS

ALL LEVELS

Indications:

- 1) Airway obstruction that cannot be quickly relieved by mechanical means
- 2) Any airway compromise, respiratory distress or impending respiratory failure.
- 3) Head injury associated with decreased LOC (GCS<13)⁴ or unilateral pupil dilation
- 4) Clinical suspicion of hemo/pneumothorax
- 5) Clinical suspicion of acute coronary episode
- 6) Obstetrical emergencies that include:
 - a. Abruptio placenta
 - b. Active seizure
 - c. Breech presentation that does not spontaneously deliver
 - d. Limb presentation
 - e. Placenta previa
 - f. Prolapsed cord
 - g. Umbilical cord wrapped around the baby's neck
- 7) Clinical suspicion of pericardial tamponade
- 8) Penetrating head, neck, thigh, or trunk trauma
- 9) Shock
- 10) Tension pneumothorax
- 11) Traumatic cardiopulmonary arrest
- 12) Unstable abdominal pain, including:
 - a. Perforated ulcer
 - b. Dissecting aorta
 - c. Abdominal Aortic Aneurysm
 - d. Splenic rupture
 - e. Unstable obstetrical and gynecological emergencies
- 13) Life threatening hemorrhage

⁴ Unless the abnormal GCS is pre-existing and unrelated to the acute traumatic event

Mass Casualty Incidents and S.T.A.R.T Triage System

All Levels

The purpose of the S.T.A.R.T. system is to efficiently triage and transport the victims of a multiple or mass casualty incident. This is used when the number of injured exceed the capabilities of the first arriving units or for large scale incidents.

Procedure:

1. Command is established by the first arriving unit
2. Scene size up
3. Estimate number of victims/level of response
 - a. Level 1 = 5-10 victims
 - b. Level 2 = 11-20 victims
 - c. Level 3 = over 21 victims
4. Request appropriate number of responding units, special equipment, and/or mutual aid units
5. Identify staging area
6. Triage of victims should be initiated immediately using the S.T.A.R.T. (simple triage and rapid transport) system
7. Priority of Triage
 - a. Red Tag = Immediate
 - b. Yellow Tag = Delayed
 - c. Green Tag = Ambulatory or Minor Wounds
 - d. Black = Deceased or Non-Salvageable
8. Move the victims with minor wounds to another area
9. Assign other command positions as other help arrives
 - a. Treatment
 - b. Transport
 - c. Information
10. A log should be kept by the information officer or dispatch with the victim's name, injuries, time transported and the destination
11. S.T.A.R.T. System
 - a. Triage of victims should take no longer than 60 seconds each. Assess their **"RPM"** Respirations, **P**erfusion and **M**ental Status
 - b. Ribbons or tags of the appropriate color (above) should be placed on the upper extremity or in a visible location
 - c. Reassessments may be conducted and priority changed once all have been triaged
 - d. Respiratory
 - If the respiratory rate is over 24-30/min use Red Tag
 - If the victim is not breathing, remove any obstruction, if seen, assess for breathing. If the victim is still not breathing, use Black Tag

e. Perfusion

- Check by using the radial pulse or cap refill
- If there is no radial pulse or cap refill is 2 seconds or greater, use Red Tag. (Be careful assessing cap refill in cooler ambient temperatures or in persons with poor circulation.)

f. Mental Status

- If the victim cannot follow commands, is unconscious or disoriented, use a Red Tag

PROCEDURE FOR SAFE HAVEN CASES

Criteria: Any mother or custodial adult that feels they are unable or unwilling to care for an infant under 45 days of age may give their infant to Law Enforcement, Fire Department staff, EMS personnel or hospital staff. The mother or custodial adult may do this anonymously. Keep in mind that minors do not have to have parental consent and the other parent does not have to be notified.

ALL LEVELS

1. Be non-judgmental as possible when the mother or custodial adult tells you they want to give you their baby. This is the best for the child in order to avoid being mistreated or remaining in an unsafe environment.
2. Inform them of the Safe Haven Law.
3. Find out the child's date of birth to establish age. If the adult refuses but insists the child is 45 days old or younger, accept the child.
4. Give the adult the run number so he/she may track the child should they change their mind.
5. Attempt to have the custodial adult fill out the "Voluntary Medical Disclosure Form" (see attached). Assure this adult that these questions are for helpful medical information on the child and we are not able to identify the adult based on these questions.
6. Assess the infant for any signs of abuse or neglect. If there is evidence of abuse or neglect or the child does not meet the Safe Haven criteria, the mother or custodial adult can be charged.
7. Transport to the nearest appropriate hospital.
8. The hospital will inform the Child Protective Services agency in their area.

VOLUNTARY MEDICAL DISCLOSURE FORM

Dear Birth Mother/Father:

Thank you for bringing your baby to a safe place. You have taken the first step in assuring that your child will be safe and well taken care of. We know that this has been a difficult decision for you, and we want to assure you that we will do what we can to give your child the best care possible.

We are asking you to help your baby by providing some health information that may be important for your child to know in his/her future. This information is important for your child's care, and most helpful for their adoptive family. The information will be used only for this purpose. **It will NOT be used to identify you or find you.** You may not know all of the answers—that's OK. Please just provide us with as much information as you do know.

What is the baby's birth date? _____ Was the baby premature? ()Yes ()No

Were there any problems with the pregnancy or delivery? ()Yes ()No
If yes, what were they? _____

Did you smoke, use alcohol, drugs or any medication during the pregnancy? ()Yes ()No
If yes, what were they? _____

<p>Do you have any medical conditions such as:</p> <p>() Diabetes () Asthma () Allergies _____ () Seizures () Cancer () Heart Disease () High Blood Pressure () Mental Illness () Other _____</p>	<p>Does the other parent have any medical conditions:</p> <p>() Diabetes () Asthma () Allergies _____ () Seizures () Cancer () Heart Disease () High Blood Pressure () Mental Illness () Other _____</p>
<p>What is your:</p> <p>Age _____ Race _____ Hair Color _____ Body Build _____</p>	<p>What is the baby's other parent:</p> <p>Age _____ Race _____ Hair Color _____ Body Build _____</p>

Is there anything else you would like to tell us about your baby?

Please feel free to include a note to your baby, or the people who will adopt your baby. If you like, you can use the back of this form.

ADULT

MEDICAL

CARDIAC ARREST

FIRST RESPONDER / BASIC EMT

- 1) Apply AED
- 2) If shockable rhythm is indicated, defibrillate per preset machine settings
- 3) Insert oral airway or non visualized ventilation adjunct if EMT (i.e. PTLA, Combi-tube)
- 4) Ventilate with bag valve mask
- 5) Perform CPR for 2 minutes
- 6) Follow AED prompts to reassess, if shockable rhythm detected, administer up to 3 additional shocks
- 7) Perform CPR for 2 minutes
- 8) If no return of a pulse, continue CPR
- 9) If non-shockable rhythm detected, continue CPR, reassess every 2 minutes

ADVANCED EMT

- 10) Place patient on manual defibrillator.
- 11) Insert non-visualized airway ASAP, if not already in place
- 12) Confirm placement by auscultation
- 13) Cardiac monitor
- 14) Initiate IV of NS at KVO rate
- 15) Defibrillate once every 2 minutes if appropriate
- 16) Transport ASAP with request for intercept with ACLS provider (Intermediate or Paramedic)

VENTRICULAR FIBRILLATION

INTERMEDIATE / PARAMEDIC

- 1) Defibrillate @ 360j or biphasic equivalent⁵
- 2) Initiate CPR for 2 minutes (30:2 ratio)
- 3) Intubate the patient
- 4) Initiate IV of NS at KVO rate⁶
- 5) **Epinephrine 1:10,000 1mg IVP or 2mg ET, repeating every 3-5 minutes or Vasopressin 40u IV x 1.** Must wait 10 minutes before administering epinephrine
- 6) Defibrillate 360 joules⁷
- 7) **Amiodarone 300mg RIVP⁸**
- 8) Defibrillate 360 joules
- 9) **Amiodarone 150mg RIVP in 3-5 minutes**
- 10) Defibrillate 360 joules
- 11) **Lidocaine 1.5 mg/kg/IV or 3 mg/kg ET, repeat in 5 minutes to a maximum cumulative dose of 3mg/kg⁸**
- 12) Defibrillate 360 joules
- 13) **Magnesium Sulfate 1-2 grams slow IVP ****
- 14) Circulate for 2-3 minutes, then defibrillate 360 joules
- 15) Search for potentially correctable causes:

❖ Hypovolemia	Fluid challenge 250cc, repeat PRN
❖ Tension Pneumothorax	Needle decompression
❖ Hypothermia	Prevent further heat loss, handle gently
❖ Narcotic Overdose	Narcan 2mg IVP or ET, repeat PRN
❖ Documented Tricyclic Antidepressant Overdose	<u>by MCP order only:</u> Sodium Bicarbonate 1meq/kg IVP**
❖ Hypoglycemia	50% Dextrose 25 grams IVP
❖ Beta Blocker Overdose	<u>by MCP order only:</u> Glucagon 1mg IVP**
❖ Acidosis	Sodium Bicarbonate 1meq/kg IVP** , Increase ventilation
❖ Hypothermia	Warm patient

****not included in the Intermediate scope of practice**

⁵ Biphasic energy level is device dependent, follow the manufacture's recommendation

⁶ All IVP medication should be followed by a 20ml fluid bolus

⁷ Defibrillation should be followed within 30-60 seconds of each drug administration (pattern should be drug-shock, drug-shock, etc.)

⁸ If conversion with medication, initiate a maintenance drip (see medications)

ASYSTOLE

INTERMEDIATE / PARAMEDIC

- 1) Confirm and document asystole in 2 leads⁹
- 2) Initiate CPR for 2 minutes (30:2 ratio)
- 3) Intubate the patient
- 4) Initiate IV of NS at KVO rate
- 5) Consider external pacing (if available) only if this is a witnessed onset of asystole documented on the ECG (utilize pacing in conjunction with pharmacological therapy)
- 6) **Epinephrine 1:10,000 1mg IVP or 2mg ET every 3-5 minutes or Vasopressin 40u IV/IO once in place or 1st or 2nd dose of epinephrine.**
- 7) **Atropine 1mg IVP or 2mg ET every 3-5 minutes (maximum cumulative dose is 0.04 mg/kg)¹⁰**
- 8) Consider possible causes
- 9) Consider **Narcan 2mg IVP or 4mg ET** if indicated
- 10) Consider contacting Medical Control to discuss discontinuation of resuscitation if the patient meets all guidelines in “Discontinuation of Resuscitation upon Determination of Death”

⁹ If the ECG voltage is greater than 1 mm activity, treat as ventricular fibrillation

¹⁰ If the initial dose is administered by ET tube, the maximum cumulative dose may not apply. Contact MCP for guidance

PULSELESS ELECTRICAL ACTIVITY

INTERMEDIATE / PARAMEDIC

Includes:

Electromechanical dissociation (EMD)
Idioventricular rhythms
Ventricular escape rhythms
Pseudo-EMD

- 1) Initiate CPR for 2 minutes (30:2 ratio)¹¹
- 2) Intubate the patient
- 3) Initiate an IV of NS
- 4) **Epinephrine 1:10,000 1mg IVP or 2mg ET every 3-5 minutes or Vasopressin 40u IV/IO once in place or 1st or 2nd dose of epinephrine.**
- 5) If the rhythm is bradycardic (<60 bpm) or relatively bradycardic, **Atropine 1mg IVP or 2mg ET every 3-5 minutes (maximum cumulative dose of 0.04 mg/kg)**¹²
- 6) Consider and treat possible causes:
 - a. Hypovolemia Fluid challenge of 250cc, repeat PRN
 - b. Tension pneumothorax Needle decompression
 - c. Hypothermia Prevent further heat loss, handle gently
 - d. Narcotic overdose **Narcan 2mg IVP**
 - e. TCA overdose **Sodium Bicarbonate 1meq/kg IVP****
 - f. Hypoglycemia **50% Dextrose 25 grams IVP**
 - g. Beta Blocker OD **by MCP order only: Glucagon 1mg IVP****
 - h. Acidosis **Sodium Bicarbonate 1meq/kg IVP****
- 7) Consider transcutaneous pacing

****not in the Intermediate scope of practice**

¹¹ Check and document the presence of CPR generated pulses throughout the resuscitation efforts

¹² If the initial dose is administered by ET tube, the maximum cumulative dose may not apply. Contact MCP for guidance

POST CARDIAC ARREST RESUSCITATION

FIRST RESPONDER / BASIC

Continue ventilation with 100% oxygen, begin transport (if able), and request ALS intercept

ADVANCED EMT

- 1) Appropriate airway management with 100% oxygen
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate if not already established

VENTRICULAR TACHYCARDIA

FIRST RESPONDER / BASIC

BLS, 100% oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Appropriate airway management with 100% oxygen
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate

NOTE: Pulseless ventricular tachycardia, treat as ventricular fibrillation

INTERMEDIATE / PARAMEDIC

STABLE VENTRICULAR TACHYCARDIA (Normotensive, Normal mentation)

- 4) **Lidocaine 1mg/kg IVP or Amiodarone 150 mg IV over 10 minutes**
- 5) If no conversion, **Lidocaine 0.5mg/kg IVP every 5-10 minutes¹³**
- 6) If Lidocaine successful, initiate **Lidocaine infusion at 2-4mg/kg**
- 7) **STABLE PATIENTS DO NOT REQUIRE CARIOVERSION**

UNSTABLE VENTRICULAR TACHYCARDIA (Hypotension, Altered LOC)

- 8) Consider sedation with **by MCP order only: Lorazepam 1-2mg diluted slow IVP****
- 9) Synchronized cardioversion** in progression at **100 joules, 200 joules, 300 joules, and 360 joules** until conversion or 360 joules attempt fails, **Rapid transport**
- 10) If converted, follow Post Cardiac Arrest Resuscitation guidelines for antiarrhythmia administration
- 11) If no conversion, **Lidocaine 1mg/kg IVP** or consider **Amiodarone 150mg IV**
- 12) Cardiovert **360 joules****
- 13) If no conversion, **Lidocaine 0.5mg/kg every 5-10 minutes** until conversion. If Lidocaine successful, initiate **Lidocaine infusion at 2-4mg/min**
- 14) Cardiovert **360 joules** after each drug administration until conversion occurs**

TORSADE DES POINTES

- 15) **Magnesium Sulfate 2 grams IVP over 15 minutes****
- 16) If no response, treat as stable or unstable V-Tach based on presentation

****not in the Intermediate scope of practice**

¹³ Maximum cumulative dose of 3mg/kg

SUPRAVENTRICULAR TACHYCARDIA

Criteria: Heart rate greater than 150 bpm with a QRS less than 0.12 seconds, if QRS greater than 0.12 seconds consider treating as Ventricular Tachycardia

FIRST RESPONDER / BASIC

BLS measures, oxygen administration with 100%, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Appropriate airway management with oxygen
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate

INTERMEDIATE / PARAMEDIC

STABLE SVT (Normotensive, Normal mentation)

- 4) Consider vagal maneuvers
- 5) **Adenosine 6mg Rapid IVP** followed by a fluid bolus
- 6) If no conversion in 1-2 minutes, **by MCP order only: Adenosine 12mg Rapid IVP followed by a fluid bolus repeated in 1-2 minutes if no conversion**
- 7) **STABLE PATIENTS DO NOT REQUIRE CARDIOVERSION**

UNSTABLE SVT (Hypotension, Altered LOC)

- 8) **Adenosine 6mg Rapid IVP** followed by a fluid bolus if time permits (use judgement)
- 9) If no conversion in 1-2 minutes, **by MCP order only: Adenosine 12mg Rapid IVP followed by a fluid bolus repeated in 1-2 minutes if no conversion**
- 10) If unsuccessful after 5 minutes, consider sedation with **by MCP only: Lorazepam 1-2mg diluted slow IVP** prior to cardioversion**
- 11) Only if medications are unsuccessful, Synchronized cardioversion** in progression at **50 joules, 100 joules, 200 joules, 300 joules, 360 joules****
- 12) If SVT fails to convert with cardioversion at 360 joules, consider other etiologies

****not in the Intermediate scope of practice**

SYMPTOMATIC BRADYCARDIA

FIRST RESPONDER / BASIC

BLS measures, administer high concentration oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Appropriate airway management with oxygen
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate
- 4) Consider a fluid bolus of 250cc if patient is unstable, repeat PRN

INTERMEDIATE / PARAMEDIC

If the patient is unstable (hypotensive, Altered LOC, Pulmonary edema, Severe chest pain) determine the underlying rhythm

- 5) Transcutaneous pacing
- 6) **Atropine 0.5mg IVP every 3-5 minutes**¹⁴ until bradycardia resolved
- 7) If no improvement, **Dopamine infusion 5 mcg/kg per minute** titrating to a systolic blood pressure of 100 mm/Hg. Mix at a concentration of 1600mcg/ml with maximum dose of 20mcg/kg/min**Paramedic only

For 1st degree or 2nd degree Type I Heart Block

- 8) **Atropine (see above)**
- 9) If no improvement, **Dopamine infusion (see above)**Paramedic ONLY**
- 10) If no improvement, consider external cardiac pacing**Paramedic ONLY

For 2nd degree Type II or 3rd degree Heart Block

- 11) Trial dose **Atropine 0.5mg IVP** while setting external cardiac pacing up
- 12) If pacing and Atropine unsuccessful, consider **Dopamine infusion (see above)**

¹⁴ Maximum cumulative dose of 0.04mg/kg

ISCHEMIC CHEST PAIN

Criteria: Patient complains of chest discomfort, dyspnea, nausea, or any combination of symptoms that leads EMS personnel to believe a cardiac event is occurring

FIRST RESPONDER / BASIC

BLS measures, place on high concentration oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Appropriate airway management with oxygen
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate¹⁵

INTERMEDIATE / PARAMEDIC

- 4) If the patient is:
 - a. Male over 35 years of age, or...
 - b. Female over 40 years of age, or...
 - c. Has a history of cardiovascular disease, AND shows signs of adequate perfusion
 - i. **Nitroglycerine 0.4mg SL every 5 minutes**¹⁶ as indicated until there is relief of pain. **B/P must maintain >100 systolic.**¹⁷
 - ii. If PVC's are present and fail to respond to treatment, **Lidocaine 1.0-1.5mg/kg IVP repeated if necessary at 0.5-0.75mg/kg every 5-10 minutes**¹⁸
 - iii. **By MCP Order Only**, Severe C/P unrelieved by Nitroglycerine, **Morphine 2-4mg diluted slow IVP.**
- 5) If the patient is clinically hypotensive initiate **Dopamine infusion 5mcg/kg per minute** titrating to a systolic blood pressure of 100 mm/Hg or a maximum dose of 20mcg/kg per minute. Mix at a concentration of 1600mcg/ml****Paramedic only**
- 6) If the patient is having chest pain but does not meet the criteria listed above, contact MCP

¹⁵ In the absence of hemodynamic instability, IV access should be initiated while enroute to the hospital (to decrease the time for the patient to potentially receive thrombolytic therapy)

¹⁶ Do not let the absence of IV access impede the administration of NTG to a Normotensive patient
Maximum cumulative dose is 1.2mg

¹⁷ Avoid Nitroglycerine in patients who have taken Viagra. Contact Medical Control for guidance

¹⁸ Maximum cumulative dose is 3mg/kg

PULMONARY EDEMA

Criteria: Dyspnea with crackles present or any symptoms felt to resemble pulmonary edema.
Peripheral edema without dyspnea DOES NOT require treatment in the pre-hospital setting

FIRST RESPONDER / BASIC

BLS measures, 100% oxygen. Begin transport (if able), request ALS intercept. If practical, allow the patient to assume a position of comfort and hang their legs down over the side of the stretcher

ADVANCED EMT

- 1) Appropriate airway management with oxygen
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate or saline lock

INTERMEDIATE / PARAMEDIC

- 4) Intubate and assist ventilations if ventilatory status is inadequate
- 5) Treat arrhythmias according to their specific protocol
- 6) If systolic blood pressure is over 100 mm/Hg:
 - a. **Nitroglycerine 0.4mg SL every 5 minutes as indicated**¹⁹
 - b. **Lasix 20-40mg slow IVP (over 2-3 minutes)**
 - c. **Albuterol 2.5mg via nebulizer only** if patient is wheezing
- 7) If systolic blood pressure is less than 90mm/Hg: ****Paramedic only**
 - a. If the patient is clinically hypotensive initiate **Dopamine infusion 5mcg/kg per minute** titrating to a systolic blood pressure of 100 mm/Hg or a maximum dose of 20mcg/kg per minute. Mix at a concentration of 1600mcg/ml
- 8) Transport ASAP

¹⁹ Maximum cumulative dose 1.2mg

ASTHMA / BRONCHOSPASM

Criteria: Dyspnea with wheezing or without wheezing in a patient with a history of COPD, asthma, allergic reaction, or toxic exposure. Be alert to the fact that this may be a new onset of pulmonary edema in a patient with no history of the above diseases and is tachypneic and tachycardic

FIRST RESPONDER / BASIC

BLS measures, administer oxygen as needed, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Appropriate airway management with oxygen
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate or saline lock

INTERMEDIATE / PARAMEDIC

- 4) **Duoneb via nebulizer.** MCP order only for 2nd stack dose of **Albuterol 2.5mg ONLY****
- 5) Monitor for increase heart rate.
- 6) If no improvement **by MCP order only: Epinephrine 1:1000 0.3mg SQ** if patient has no cardiac history or COPD history, and age is less than 50

**** Albuterol 2.5mg via nebulizer if patient currently on Spiriva OR Duoneb not available**

COMPLETE UPPER AIRWAY OBSTRUCTION

Criteria: Inability to ventilate patient by any other means

FIRST RESPONDER / BASIC

BLS procedures including abdominal thrusts, finger sweeps, attempt to administer oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Cardiac monitor
- 2) Initiate IV of NS at KVO rate or saline lock

INTERMEDIATE / PARAMEDIC

- 3) Attempt direct laryngoscopy to remove the object that is above the vocal cords.

ALLERGIC REACTION/ANAPHYLAXIS

Criteria: Any reaction to a substance that causes dyspnea, hives, local swelling, itching, or red skin or any combination of these symptoms that leads EMS personnel that an allergic reaction exists

FIRST RESPONDER

- 1) Vital signs, high concentration oxygen, supportive care

BASIC

- 2) Begin transport as soon as possible.
- 3) Request ALS intercept
- 4) Airway management
- 5) FOR ANAPHYLAXIS without improvement by the above, **by MCP order only:**
Epinephrine 1:1000 0.3mg IM in the upper outer thigh via Epi Pen Auto-Injector unit if the patient has no cardiac history and is less than 50 years old.

ADVANCED EMT

- 6) Cardiac monitor
- 7) Initiate IV of NS at KVO rate
- 8) Give fluid challenges of 250cc if blood pressure <90
- 9) Consider second IV of NS for severe hypotension (blood pressure ≤60)

INTERMEDIATE

- 10) If no improvement **by MCP order only:** **Epinephrine 1:1000 0.3mg SQ or IM** if patient has no cardiac history or COPD history, and age is less than 50
- 11) Consider **Albuterol 2.5mg via nebulizer** if dyspneic or refractory to above treatment

PARAMEDIC

- 8) **By MCP Order Only,** **Benadryl 25-50mg IVP**
- 9) If no improvement **by MCP order only:** **Epinephrine 1:1000 0.3mg SQ** if patient has no cardiac history or COPD history, and age is less than 50
- 10) Consider **Albuterol 2.5mg via nebulizer** if dyspneic or refractory to above treatment

CVA – TIA

ALL LEVELS

- ❖ This protocol is for patients who have an acute episode of neurological deficit without any evidence of trauma
- ❖ Consider other causes of altered mental status, i.e. hypoxia, hypo-perfusion, hypoglycemia, trauma or overdose.
- ❖ Assure airway is open with adequate ventilations and circulation.
- ❖ Administer high concentration oxygen.
- ❖ Perform Cincinnati Pre-Hospital Stroke Scale:
 - A. Face: Assess for facial droop: have the patient show teeth or smile
 - B. Arm: Assess for arm drift: have patient close eyes and hold both arms straight out with their palms up for 10 seconds
 - C. Speech: Assess for abnormal speech: have the patient say, “you can’t teach an old dog new tricks”
 - D. Time: Determine when the patient last behaved normally
- ❖ Transport patient to the Stroke Center (Jewish/University) if the total prehospital time (time from when patient’s symptoms and/or signs first began to when patient is expected to arrive at Stroke Center) is less than **two (2)** hours.
- ❖ Position patient with head and chest elevated at least 30 degrees.
- ❖ Protect any paralyzed or partially paralyzed extremities.

ADVANCED EMT

- 1) Cardiac Monitor
- 2) Establish IV access
- 3) Glucose determination.

INTERMEDIATE /PARAMEDIC

- 4) Consider advanced airway if indicated.
- 5) Do **NOT** administer nitroglycerine.
- 6) Contact MCP if B/G is <60.

HYPERTENSIVE CRISIS

Criteria: Rapid elevation of the systolic BP > 220 or diastolic BP > 130 without evidence of CVA or head trauma, and the patient is alert and oriented

FIRST RESPONDER / BASIC

BLS measures, supplemental oxygen, begin transport (if able)

ADVANCED EMT / INTERMEDIATE / PARAMEDIC
--

- 1) Appropriate airway management
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate or saline lock

HEAT STROKE

Criteria: Body heat regulation is lost and body temperature rises to over 104 degrees F. Associated with diminished mental function, confusion, seizure, or coma

FIRST RESPONDER / BASIC

- 1) Provide Initial Medical Care
- 2) Administer high flow oxygen and maximize ventilations
- 3) Begin cooling ASAP using sheets or towels dipped in ice water and covered with ice chips (if available)
- 4) It is preferable to place ice packs over the patient's groin, neck, and axilla for maximum heat exchange. Discontinue if patient starts to shiver
- 5) Rapid transport (if able)

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 6) Cardiac monitor
- 7) Establish IV of Lactated Ringers at 250ml/hr
- 8) Determine blood glucose level

HEAT EXHAUSTION

Criteria: Syndrome approaching heat stroke, but the temperature is less than 104 degrees F and mental function is intact

FIRST RESPONDER / BASIC

- 1) Provide Initial Medical Care
- 2) Administer high flow oxygen
- 3) Begin external cooling if body temperature is elevated. Discontinue if patient starts shivering
- 4) Have the patient rest in a cool environment
- 5) Transport (if able)

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 6) Cardiac monitor
- 7) Establish IV of Lactated Ringers and titrate to maintain a blood pressure over 90mm/Hg
- 8) Determine blood glucose level

HEAT CRAMPS

FIRST RESPONDER / BASIC

- 1) Have the patient rest in a cool environment
- 2) Administer oxygen at a moderate rate
- 3) If available, administer PO fluids
- 4) Transport (if able)

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 5) Cardiac monitor
- 6) Establish IV of Lactated Ringers and titrate to maintain a blood pressure over 90mm/Hg

HYPOTHERMIA

ALL LEVELS

- 1) Assess respirations and pulse carefully (FOR 1 MINUTE) as both may be very slow but still adequate for the patient's slow metabolism
- 2) If apneic ventilate with 100% oxygen, suction as needed²⁰. DO NOT HYPERVENTILATE. Invasive airway based on provider level.
- 3) Decrease on-going heat loss ASAP by moving the patient to a warm area, then drying and insulating the patient.
- 4) Handle the patient gently, allowing no patient exertion (rough handling of severely hypothermic patients may cause V-Fib)
- 5) Remove all wet clothing (CUT OFF to decrease patient movement)
- 6) Apply "passive external warming" with blankets and a warm environment.
- 7) Administer oxygen as needed.
- 8) Transport gently (if able) (NOT CODE 3)
- 9) Conscious patients should avoid smoking or the use of alcohol, stimulants, or heated oral fluids

ADVANCED EMT

- 10) Cardiac monitor
- 11) Initiate CPR (for 2 minutes) if asystole or PEA
- 12) If V-Fib is present, defibrillate at 360j or biphasic equivalent
- 13) Establish IV of Lactated Ringers or NS at KVO rate

INTERMEDIATE/PARAMEDIC

- 14) Contact MCP for specific drug administration directions²¹

ALL SEVERELY HYPOTHERMIC PATIENTS MUST BE HANDLED AND TRANSPORTED GENTLY BECAUSE ROUGH MOVEMENT MAY PRECIPITATE V-FIB.

EMERGENCY TRANSPORT IS ONLY INDICATED FOR THE CARDIAC ARREST PATIENT

²⁰ Intermediates and Paramedics should intubate if there is respiratory depression or decreased level of consciousness

²¹ Drug administration to the severely hypothermic patient is dependant on core temperature and is controversial. Specific physician advice is required on a case-by-case basis

SEIZURE / STATUS SEIZURE

FIRST RESPONDER / BASIC

BLS measures, protect the patient from further injury, immobilize if injury is suspected, high concentration oxygen, be prepared to assist ventilations if respiratory effort is inadequate, begin transport (if able), request ALS intercept

**** If low blood sugar is suspected, refer to decreased level of consciousness protocols (HYPOGLYCEMIA, HYPERGLYCEMIA) ****

ADVANCED EMT

- 1) Appropriate airway management
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate or saline lock
- 4) Determine blood glucose level

INTERMEDIATE

- 5) Intubate (oral only) and ventilate as indicated

PARAMEDIC

- 6) ***By MCP order only:* Lorazepam 1-2mg diluted slow IVP over 2 minutes, or 2mg IM. May repeat dose in 10 minutes.**

****Monitor for respiratory depression****

DECREASED LEVEL OF CONSCIOUSNESS

Criteria: Patient presents with an altered level of consciousness than usual for the patient. Consider all possible causes for this including trauma.

FIRST RESPONDER / BASIC

Secure the airway. Administer 100% oxygen. Assist ventilations as needed

- 1) If low blood sugar is suspected:
 - a. If the patient is alert but confused, then administer one tube of Instant Glucose orally
 - b. If the patient has a decreased level of consciousness and lethargic, then place the patient in the recovery position on their left side. Protect the patient's airway
- 2) Begin transport.
- 3) Request ALS intercept.

ADVANCED EMT

- 4) Cardiac monitor.
- 5) Establish IV of NS or D5W at KVO rate.
- 6) Perform blood glucose check.
- 7) If B/G <60, give 250ml bolus IV of D5W

INTERMEDIATE

- 8) If blood glucose <60, give **50% Dextrose 25 grams IVP**. If repeat blood glucose <60 repeat **50% Dextrose 25grams IVP**
- 9) If blood glucose >400 administer 500cc fluid bolus if no pulmonary edema
- 10) Suspected Opiate OD with decreased LOC and respiratory depression that will require intubation, **Narcan 2mg IVP. 4mg if given ET**

PARAMEDIC

- 11) If unable to establish a patent IV site **Glucagon 1mg IM**.
- 12) If malnourished or history of alcoholism **Thiamine 100mg IVP** prior to D50.

DIABETIC EMERGENCY

FIRST RESPONDER / BASIC EMT

1. Secure airway and administer 100% oxygen.
2. Administer **oral glucose** in confused but alert patient.
3. If decreased LOC or unconscious, protect patient's airway.
4. Begin transport, if able.
5. Request ALS intercept.

ADVANCED EMT

6. Cardiac monitor
7. Perform blood glucose check.
8. Establish IV of D5W administering 5cc/kg

INTERMEDIATE / PARAMEDIC

9. Administer 25g of D50 if blood glucose is <60. Recheck blood glucose in 5-10 minutes.
10. If unable to establish IV, **Glucagon 1mg IM Paramedic Only**
11. If blood glucose is >400 administer 250cc bolus or treat for hypotension if shock is suspected.

OVERDOSE / TOXIC EXPOSURE

Criteria: Evidence of ingestion, injection, inhalation, or absorption of a toxic substance. Only those patients who exhibit symptoms following an overdose should be treated.

When in doubt, contact MCP

FIRST RESPONDER / BASIC

- 1) Secure the airway. Provide 100% oxygen. Assist ventilations as needed
- 2) Begin transport (if able). Request ALS intercept if needed

ADVANCED EMT

- 3) Appropriate airway management
- 4) Cardiac monitor
- 5) Establish IV of NS at KVO rate. Give 250cc fluid bolus for hypotension

INTERMEDIATE

- 6) If patient is maintaining airway, **DO NOT** give **Narcan**. If suspected opiate OD with **Decreased LOC AND RESPIRATORY DEPRESSION THAT WILL REQUIRE INTUBATION**, give **Narcan 2mg IVP**
- 7) If carbon monoxide exposure
 - a. Obtain concentration of CO in PPM
 - b. Patient should be transported immediately.
- 8) If organophosphate poisoning
 - a. Observe for signs of parasympathetic stimulation (SLUDGE - Salivation, Lacrimation, Urination, Defecation, Gastric cramping, Emesis)
 - b. **By MCP Order Only Atropine 2-5mg IVP repeat in 15-30 minutes** (tachycardia, dilation of pupils, dry mouth)
 - c. Transport to a facility with decontamination capabilities
- 9) If anti-psychotic in nature,
 - a. Observe for extrapyramidal symptoms (drawing up of the face, mouth, neck, and eyes; thickening of the tongue; difficulty speaking)

PARAMEDIC

- 10) If organophosphate poisoning
 - If seizures occur **by MCP order only: Lorazepam 2-4mg diluted slow IVP.**
- 11) If anti-psychotic in nature, **By MCP Order Only Benadryl 25-50mg IVP**
- 12) If cocaine or amphetamines with severe agitation, **Contact MCP.**
- 13) If tricyclic antidepressant overdose, **Contact MCP.**
- 14) If beta blocker overdose **Contact MCP.**

SHOCK

FIRST RESPONDER / BASIC

- 1) Provide Initial Medical Care
- 2) Administer high flow oxygen
- 3) Rapid transport (if able)
- 4) Keep patient warm
- 5) Trendelenburg Position, if not contraindicated

ADVANCED EMT

- 6) Cardiac monitor
- 7) Establish IV of NS at KVO rate
 - a) If Hypovolemic shock is suspected, begin volume resuscitation
 - b) If Septic shock is suspected, administer a 250cc fluid bolus

INTERMEDIATE

Cardiogenic Shock

- 8) If the patient shows hemodynamic improvement (systolic BP over 100mm/Hg) after the above treatment, and is now experiencing chest pain, administer **Nitroglycerine 0.4mg SL every 5 minutes**²² as indicated

PARAMEDIC

- CARDIOGENIC SHOCK

- 9) **Dopamine infusion 5 mcg/kg/min**²³, titrated to a systolic BP of 100 mm/Hg or a maximum dose of 20 mcg/kg/min²⁴

- SEPTIC SHOCK

- 10) If no improvement with the fluid bolus, **By MCP Order Only, Dopamine infusion 5 mcg/kg/min**²³, titrated to a systolic BP of 100 mm/Hg or a maximum dose of 20 mcg/kg/min²⁴.

²² Maximum cumulative dose is 1.2mg

²³ Mix to a concentration of 1600 mcg/ml

²⁴ Or the physical examination supports significant clinical improvement in perfusion

VOMITING AND DEHYDRATION

FIRST RESPONDER / BASIC

BLS measures, administer supplemental oxygen, begin transport (if able)

ADVANCED EMT / INTERMEDIATE

- 1) Appropriate airway management
- 2) Cardiac monitor
- 3) IV of Lactated Ringers at KVO rate. Give a 250cc fluid bolus for hypotension
- 4) Consider second IV of NS if condition dictates

PARAMEDIC

- 5) **Phenergan 12.5mg DILUTED IN MINIMUM OF 10CC NS, slow IVP** for uncontrolled vomiting **and** if age is less than 60

EMERGENCY DELIVERY

FIRST RESPONDER / BASIC

- 1) If delivery appears imminent (i.e. crowning is noted), proceed with delivery at the scene while concurrently preparing for transport
- 2) Provide oxygen, supportive care and vital sign monitoring to the mother
- 3) If the umbilical cord is wrapped around the newborn's neck, pull gently to loosen or slip the cord over the head. If you are unable to loosen the cord, double clamp the cord and cut it between the clamps.
- 4) Deliver the newborn's shoulders and remainder of the body. Suction the mouth and then the nose before body is delivered
- 5) Clamp the umbilical cord 6 inches and 8 inches from the newborn's body. Cut the umbilical cord between the clamps
- 6) Assess the newborn's APGAR score (see page 113) at 1 minute and 5 minutes after delivery
- 7) Provide care to the newborn
 - a. Dry the face and body – Do this first
 - b. Dry-remove wet blankets and place on dry blankets
 - c. Suction
 - d. Stimulate – rub back/feet
 - e. Maintain warm environment throughout
 - f. Suction the mouth and nose again, avoiding entry too deeply into the mouth
 - g. Maintain body heat with blankets
 - h. If the newborn is in distress, follow the *Neonatal Resuscitation Protocol* (see page 92)
- 8) Continue supportive care to the mother
- 9) Do not delay transportation for delivery of the placenta
- 10) After the placenta delivers, massage the fundus until firm
- 11) Examine the perineum for tears and apply pressure with a perineal pad to any bleeding tears if necessary. Do not pack the vagina
- 12) Transport the mother and newborn to the appropriate hospital

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 13) Cardiac monitor
- 14) Establish IV of Lactated Ringers at KVO rate. Begin fluid resuscitation if indicated

PRE-ECLAMPSIA / ECLAMPSIA

FIRST RESPONDER / BASIC

- 1) Administer high flow oxygen
- 2) Begin gentle transport (if able) **THIS IS A LOAD AND GO SITUATION**

ADVANCED EMT

- 3) Cardiac monitor
- 4) Establish IV of NS at KVO rate

INTERMEDIATE

- 5) Ventilate as indicated or intubate (orally only)

PARAMEDIC

IF SEIZING ONLY:

- 6) **By MCP order only: Magnesium Sulfate 4grams slow IVP over 3 minutes.**
- 7) **By MCP order only: Consider Lorazepam 2mg slow IVP.**

ABRUPTIO PLACENTA or PLACENTA PREVIA

FIRST RESPONDER / BASIC

- 1) Administer high flow oxygen
- 2) Begin transport (if able) to the nearest hospital that provides obstetrical services

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 3) Cardiac Monitor
- 4) Establish IV for hypovolemia
- 5) 500ml IV bolus if SBP < 90

PROLAPSED CORD

ALL LEVELS

- 1) Administer high flow oxygen
- 2) Elevate the mother's hips with several sheets or blankets
- 3) Insert a gloved hand into the vagina and gently lift the head off the cord.
Continue this procedure until care for the patient is transferred to the hospital staff
- 4) LOAD AND GO

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 5) Cardiac monitor
- 6) Establish IV of NS at KVO rate

LIMB PRESENTATION

FIRST RESPONDER / BASIC

- 1) Administer high flow oxygen
- 2) Position the mother with her left side down and hips elevated on a pillow
- 3) If both legs and trunk deliver spontaneously, handle as a breech delivery
- 4) LOAD AND GO

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 5) Cardiac monitor
- 6) Establish IV of NS at KVO rate

BREECH DELIVERY

FIRST RESPONDER / BASIC

- 1) DO NOT DELAY TRANSPORT. If a breech presentation is found and spontaneously delivering, attempt to deliver the infant while concurrently preparing for transport
 - a. Allow the mother to push the baby out. DO NOT PULL
 - b. Support the newborn around the chest and gently guide the arms out of the birth canal. If possible, turn the newborn so that its back is toward you (in this position, the newborn's chin will be less likely to get caught on the mother's symphysis pubis)
 - c. If the head does not deliver, place a gloved hand in the vagina to form a "V" with your fingers around the mouth and nose in case the newborn begins to breathe
- 2) Administer high flow oxygen
- 3) If the baby does not deliver spontaneously, immediately LOAD AND GO to the nearest hospital that provides obstetrical services. Notify the hospital so that staff can prepare to receive the patient

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 4) Cardiac monitor
- 5) Establish IV of Lactated Ringers at KVO rate. Begin fluid resuscitation if indicated

BEHAVIORAL EMERGENCIES

Criteria: A patient who is an immediate risk to the safety of the patient or EMS crew without evidence of significant trauma

ALL LEVELS

Refer to restraint policy protocol.

ADULT

TRAUMA

GENERAL OVERVIEW

LEVEL I TRAUMA CENTER TRANSPORT INDICATIONS²⁵

Transport to a Level I Trauma Center if the:

- Glasgow Coma Scale is under 13²⁶ OR
- Systolic BP is under 90mm/Hg OR
- Respiratory rate is under 10 or over 24

Otherwise, continue with the assessment of anatomy and mechanism of injury criteria

ANATOMY FACTORS

- Penetrating injury to the trunk, head, neck, thigh, or groin
- Two or more proximal long bone fractures
- Combination of 2nd or 3rd degree burns more than 15% BSA, the face, or the airway
- Flail chest
- Open fracture of a long bone
- Extremity injury associated with absent distal pulse
- Unstable pelvis
- Multi-system trauma – head with chest or abdomen or severe extremity trauma

MECHANISM OF INJURY FACTORS

- Falls over 20 feet
- MVA with a velocity/impact difference of over 20 mph
- 30 inch deformity of the involved vehicle
- Passenger compartment intrusion of 18 inches on the patient side or 24 inches on the opposite side of the vehicle
- Ejection from the vehicle
- Death of an occupant in the same vehicle
- Pedestrian struck at impact speed over 20 mph

Penetrating trauma to the trunk, head, neck, or thigh (with stable or unstable vital signs) and non-penetrating trauma associated with unstable vital signs is considered **LOAD AND GO**. Initial treatment is aimed at BLS, with on-scene ALS skills limited to airway control and ventilation. **IV ATTEMPTS MAY ONLY BE PERFORMED IN AN AMBULANCE THAT IS ACTUALLY ROLLING TO THE HOSPITAL.**²⁸

²⁵ This is for the purpose of destination only (not necessarily Room 9 criteria)

²⁶ Unless the abnormal GCS is pre-existing and unrelated to the acute traumatic event

²⁷ Exceptions to this rule are:

- Entrapped patients
- Multiple casualty situations where stationary treatment areas have been established
- EMS providers on scene without a means of transport

INITIAL TRAUMA CARE

ALL LEVELS

1. Observe Universal Precautions
2. Perform a global survey (scene safety, number of patients)
3. Assess, secure, open, and maintain an adequate airway with C-Spine immobilization
4. Look, listen, and feel for breathing
 - a. Visually check the chest
 - b. Verify that the trachea is mid-line and that the neck veins are not distended
 - c. Check for the presence and equality of breath sounds
 - d. Insert NP or OP airway if appropriate (NP airways should be used with caution if suspected basal skull fracture)
5. Administer Oxygen as needed
6. Circulation
 - a. Assess carotid and peripheral pulses for presence and equality
 - b. Check capillary refill
 - c. Assess skin temperature and color
 - d. Perform CPR if indicated
 - e. Control massive bleeding with direct pressure
7. Assess for disability
 - a. Check and record the level of consciousness using the AVPU method
 - i. A = Alert
 - ii. V = Responds to verbal stimulus
 - iii. P = Responds to painful stimulus
 - iv. U = Unresponsive to any stimulus
8. Expose the patient as needed in order to complete a thorough assessment
9. Attempt to keep the on scene time to 10 minutes or less whenever possible. If the scene time exceeds 10 minutes, document the rationale for the delay
10. Immobilize the patient in the following manner
 - a. Maintain in-line C-Spine immobilization until the head is secured to the long backboard
 - b. Apply cervical collar
 - c. Log roll the patient onto a long backboard
 - d. Secure the patient to the backboard using straps
 - e. Apply head blocks or equivalent head immobilization device
 - f. Secure the head
 - g. Assess, compare, and record neurovascular status both before immobilization and after

11. Monitor breath sounds for pulmonary edema
12. The secondary assessment for critical patients should be performed while enroute to the hospital
 - a. Check and record vital signs every 5 minutes as possible
13. Keep the patient warm
14. Transportation by an ALS unit is preferred for critical patients

ADVANCED EMT / INTERMEDIATE / PARAMEDIC
--

15. Cardiac monitor
16. Initiate IV of Lactated Ringers at appropriate rate for patient condition. IV's should be initiated while en-route to a medical facility

TREATMENT OF TASER INJURIES

ALL Levels

This protocol is intended to provide guidelines for care of patients following the use of the M26 Taser or similar weapon. For situations involving altered level of consciousness, significant secondary trauma, or other urgent medical problems, refer to the appropriate protocol.

1. Assure the scene is safe. Use of this type weapon on a victim suggests that he/she is violent and was a risk to him/herself or others as determined by law enforcement.
2. Evaluate and treat for secondary injuries/altered level of consciousness as indicated.
3. Stabilize the dart (or darts) in place and transport the patient if:
 - (1) the dart has penetrated more than ½ inch, which would be into the thick portion of the dart's barrel **or**
 - (2) the dart is embedded in the eyelid or globe of the eye, genitalia, breast or face/neck area.
4. Darts in other locations may be carefully removed by gently pulling backwards in the same place as it entered the victim's body. Assure the dart is intact and that no portion of the dart remains in the patient's skin. Document this in our patient care report.
5. Provide darts to law enforcement.
6. Control minor bleeding and clean the wound(s) with providone iodine, unless allergic. Cover with adhesive bandage.
7. If all darts are out, any minor bleeding is controlled, and no other injuries or symptoms exist, EMS transport can be refused and an SOR (signature of release) obtained. If these criteria are not met, EMS must transport the patient for medical clearance at an emergency department.

You may NOT transport the patient to a police station or holding facility.

ABDOMINAL TRAUMA

FIRST RESPONDER / BASIC

- 1) Obtain history of the injury
 - a) Blunt: amount and direction of force
 - b) Penetrating: weapon, size of object or bullet caliber
 - c) MVA: condition of vehicle, speed, seat belt, and patient trajectory
- 2) Administer oxygen according to patient condition and stability
- 3) Stabilize impaled objects. Cover eviscerations with saline moistened gauze
- 4) Immobilize other injuries and control bleeding
- 5) Transport ASAP (if able)

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 6) Cardiac monitor
- 7) Establish IV of Lactated Ringers at rate determined by patient's condition. IV's will be started while transporting unless the patient is trapped
- 8) If the patient shows continued signs of hemodynamic instability, start a second IV of Lactated Ringers

AMPUTATED BODY PART CARE

ALL LEVELS

- 1) Be sure to obtain the time and mechanism of the injury and blood loss at the scene
- 2) Control bleeding with direct pressure and elevation if possible
- 3) Cover the stump with a saline soaked sterile dressing wrapped with a dry dressing
- 4) Wrap the severed part in a saline moistened sterile dressing and place in a sealable plastic bag.
- 5) Place the bag in a container of ice and water. DO NOT FREEZE. DO NOT MACERATE
- 6) Do not “clean off” tooth. Place in saline or milk
- 7) Transport the body part to same facility that received the patient

NOTE: Partial amputations should be dressed and splinted in alignment with the extremity to ensure maximum blood flow. Apply ice over the injury. Avoid tourniquets and NEVER clamp bleeding vessels.

GLOVED INJURY CARE

For patients wearing gloves with a crush or mangled injury use the following treatment:

- 1) Remove the glove from the UN-affected part of the hand.
- 2) Cut back what you can without attempting to remove the glove over the injured area.
- 3) Treatment for bleeding and shock as needed.

NOTE: Removing the glove over the injured area may also remove or damage tissue in the affected area. If there is any doubt that removing the glove will cause more damage to the injury, leave the glove on.

CHEST TRAUMA

FIRST RESPONDER / BASIC

- 1) Obtain history of the injury
 - a) Blunt: amount and direction of forces
 - b) Penetrating: weapon, size of object or bullet caliber
 - c) MVA: condition of auto interior and steering wheel
- 2) Assess for tenderness, deformity, crepitus, flail segments, or open wounds
- 3) Ensure the airway while protecting the cervical spine
- 4) Administer high flow oxygen. Assist ventilations as needed
- 5) Stabilize flail segments
- 6) Seal open chest wounds on three sides, control bleeding, and stabilize impaled objects
- 7) Provide initial spinal immobilization to the degree indicated by the patient's overall condition
- 8) If the patient has suffered penetrating chest injuries, or is displaying signs or symptoms of real or potential hemodynamic instability, LOAD AND GO. Transport (if able) to a Level I Trauma Center

ADVANCED EMT

- 9) Cardiac Monitor
- 10) Establish IV of Lactated Ringers. Begin volume resuscitation as indicated by the patient's condition.

INTERMEDIATE / PARAMEDIC

- 11) Intubate as needed
- 12) If a tension pneumothorax is present, perform needle decompression²⁸

²⁸ The clinical impression of this condition should not be made on the basis of a SINGLE physical finding. Paramedics/Intermediates should identify multiple signs, such as:

- Poor ventilation,
- Deviated trachea away from side of injury
- Hypotension/Shock
- JVD
- Hyperresonance to percussion on affected side.
- Increased resistance with ventilating.

BURNS

Criteria: Any patient that has sustained a burn that covers greater than 20% BSA, electrical burns, or inhalation injury

FIRST RESPONDER / BASIC

- 1) Protect the cervical spine if indicated
- 2) Appropriate airway management with 100% oxygen
- 3) Control any bleeding
- 4) Cover burns with a dry, sterile sheet
- 5) Begin transport (if able) to a hospital with a Burn Center²⁹

ADVANCED / INTERMEDIATE / PARAMEDIC

- 6) Cardiac monitor
- 7) Establish IV of Lactated Ringers. Give a 250cc fluid bolus as needed for hypotension
- 8) Consider a second IV site if burned area is greater than 30% or hypotension is present

²⁹ Especially with the following types:

- Partial thickness burns greater than 20% BSA and age 12-50
- Partial thickness burns greater than 10% BSA and age greater than 50
- Full thickness burns greater than 5% BSA in any age patient
- Patients with full or partial thickness burns of the hands, feet, face, eyes, ears, perineum, and/or major joints
- Patients with high voltage electrical injuries including lightning injuries

EXTREMITY INJURY

Note: This protocol is directed towards the patient presenting with isolated injuries. Any patient suffering multi-trauma should be approached with prioritization of needs.

FIRST RESPONDER / BASIC

- 1) Observe for localized swelling, discoloration, deformities, lacerations, exposed bone fragments, loss of function, and color of the extremity
- 2) Palpate for tenderness, crepitus, distal pulses, sensation, and temperature of the extremity
- 3) Note estimated blood loss at the scene
- 4) Administer oxygen as needed
- 5) Immobilize the cervical spine if indicated
- 6) Splint according to injury (i.e. traction splint for femur fracture). Splint in a neutral position
- 7) Apply sterile dressings to open fractures. Do not push exposed bone “back in”
- 8) Elevate the extremity if the injury and packaging will allow
- 9) Apply cold packs
- 10) Transport

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 11) Cardiac monitor
- 12) Establish IV of Lactated Ringers or saline lock at your discretion

EYE EMERGENCY

ALL LEVELS

PENETRATING TRAUMA TO GLOBE:

- 1) Look for bleeding or leakage of the vitreous material (clear fluid or jelly-like substance).
- 2) Do not palpate the globe. If there is any question about the globe injury, shield the injured eye (patch the non-injured eye, but do not press or patch traumatized eyes)
- 3) Impaled foreign objects should be stabilized in place with paper cup or similar device. Patch the non-injured eye to reduce eye movement
- 4) Tell the patient not to cough, sneeze, or move unnecessarily
- 5) Elevate the patient's head if possible and transport gently (if able)

ULTRAVIOLET LIGHT BURNS (“Arc welder’s or sun lamp burn):

Usually occurs 3 – 10 hours after exposure

- 1) Place cool compresses lightly over both lids and transport (if able)

CENTRAL RETINAL ARTERY OCCLUSION (Non traumatic):

Presents with sudden, painless loss of vision in one eye. (There may be a history of CVA or other embolic event). The pupil only reacts to light in the other eye (consensual)

- 1) Administer oxygen as indicated by condition
- 2) Transport (if able)
- 3) Notify the receiving facility during transport

RETINAL DETACHMENT

Symptoms include flashing lights, spots, or “shades” in one eye

- 1) Position the patient supinely
- 2) Transport gently (if able)

HYPHEMA

Blood between the iris and cornea, usually after trauma, layering out

- 1) Shield the eye and position the patient sitting up
- 2) Transport (if able)

CHEMICAL BURNS

- 1) Flush affected eye with at least 1-2 liters of NS
- 2) Shield both eyes
- 3) Transport (if able)

BLUNT RUPTURE OF GLOBE

- 1) Look for bleeding or leakage of clear fluid or jelly-like clear substance
- 2) Do not palpate the globe. If there is any question about globe injury, shield the injured eye (patch the non-injured eye), but do not press or patch traumatized eye(s)
- 3) Tell the patient not to cough, sneeze, or move unnecessarily
- 4) Elevate the patient's head if possible and transport (if able) gently

HEAD / NECK INJURY

FIRST RESPONDER / BASIC

1. Assess neurological status looking for numbness, tingling, paralysis, seizure activity, or posturing (decorticate or decerebrate)
2. Look for external signs of trauma
 - a. Contusions, abrasions, lacerations, bleeding, or clear fluid from the ears or nose
3. Assess for pain or discomfort
 - a. Location, radiation, or significant absence of pain

CONSCIOUS PATIENT

4. Manually immobilize the cervical spine in the neutral position and ensure adequate airway and ventilation. The following guidelines should be used for determining the extent of spinal immobilization provided to the patient
 - a. Provide complete spinal immobilization (as indicated in the National D.O.T. EMT training curriculum) if the patient:
 - i. Is conscious and complaining of neck pain or has signs or symptoms indicative of a spinal injury, or
 - ii. Is conscious, appears intoxicated, and received a direct, penetrating, or deceleration injury at or above the level of the clavicles (even if the patient denies neck pain or discomfort),
 - iii. Is conscious, has sustained a significant mechanism of injury and has distracting injuries
 - b. Provide manual spinal immobilization in conjunction with a long backboard or other equipment (excluding a KED or short backboard) if the patient:
 - i. Is conscious or his/her level of consciousness is so diminished that airway compromise is an immediate concern
 - ii. Presents with any trauma LOAD AND GO situation as noted in these protocols
 - iii. You are physically unable to utilize the KED due to patient location and/or scene safety
 - c. Administer oxygen as needed
5. Dress and bandage wounds as appropriate for the patient's condition

POORLY RESPONSIVE or UNCONSCIOUS PATIENT

1. Manually immobilize the cervical spine in a neutral position and ensure an adequate airway and ventilation
2. Administer high flow oxygen. Ventilate if there is respiratory depression or decreased level of consciousness
3. Apply the appropriate level of spinal immobilization as indicated by this protocol using a cervical collar, long backboard, straps, and head immobilization device

4. LOAD AND GO. Transport to a Level I Trauma Center
5. Dress soft tissue injuries as indicated

ADVANCED EMT

6. Cardiac monitor
7. Establish IV of Lactated Ringers at KVO rate (fluid resuscitate if indicated by other findings)

INTERMEDIATE / PARAMEDIC

8. Suspected Opiate OD with decreased LOC and respiratory depression that will require intubation, administer **Narcan 2mg IVP or 4mg ET if indicated**
9. Administer **50% Dextrose 25g IVP** if indicated if blood glucose level is less than 60

NOTE: Cervical spinal immobilization is not mandated in those patients who:

- Sustained an isolated injury below the clavicle through a low risk mechanism of injury, AND
- Deny the presence of neck pain or discomfort, AND
- Do not appear intoxicated and who demonstrate normal mental function (i.e. calm, cooperative, alert)

BITES AND ENVENOMATION

All Levels

1. Initial Trauma Care
2. Airway management
3. Control bleeding
4. Place patient in position of comfort or supine position and immobilize as needed.
5. If signs of allergic reaction, follow Allergic Reaction and Anaphylaxis
6. If a snake or spider bite, try to identify the snake or spider without putting yourself in danger.
7. Do not delay transport looking for the source of the envenomation.
8. Call Medical Control Physician for assistance as needed.

PATIENTS WITH CONDITIONS OUTSIDE OF ESTABLISHED PROTOCOLS

FIRST RESPONDER / BASIC

- 1) Appropriate airway management with oxygen
- 2) Contact Medical Control for further instructions if needed

ADVANCED EMT / INTERMEDIATE / PARAMEDIC

- 3) Cardiac monitor
- 4) Establish IV of NS at KVO rate
- 5) Treatment as advised by MCP

PEDIATRICS

PEDIATRIC VENTRICULAR FIBRILLATION/PULSELESS V-TACH

FIRST RESPONDER, BASIC EMT

Initiate CPR, Ventilate with 100% oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 2) Defibrillate 2joules/kg, 4joules/kg, 4joules/kg³⁰
- 3) Secure airway
- 4) Initiate IV of NS at KVO rate³¹
- 5) Repeat defibrillation at 4joules/kg every 5 minutes PRN

INTERMEDIATE EMT/PARAMEDIC

- 6) Intubate
- 7) **Epinephrine 1:10,000 0.01mg/kg IVP/IO or Epinephrine 1:1000 0.1mg ET, repeat Epinephrine 1:1000 0.1mg/kg IVP/IO/ET every 3 minutes**
- 8) **Lidocaine 1mg/kg IVP/IO/ET or Amiodarone 5mg/kg IVP/IO**
- 9) Defibrillate 4joules/kg
- 10) Repeat **Lidocaine 1mg/kg IVP/IO/ET** in 5 minutes
- 11) Defibrillate 4joules/kg
- 12) Repeat **Lidocaine 1mg/kg IO/ET** in 5 minutes
- 13) Defibrillate 4joules/kg
- 14) Search for potentially correctable causes

- | | |
|--|---|
| * Hypovolemia | Fluid challenge 20cc/kg NS, repeat PRN |
| * Tension Pneumothorax | Needle decompression |
| * Hypothermia | Prevent further heat loss, handle gently |
| * Narcotic Overdose | Narcan 0.1mg/kg IV/IO/ET/IM |
| * Documented Tricyclic Antidepressant Overdose | <u>Contact MCP</u> |
| * Hypoglycemia | 25% Dextrose 2cc/kg IVP |
| * Beta Blocker Overdose | <u>Contact MCP</u> |
| * Acidosis | Sodium Bicarbonate 1meq/kg IVP, increase ventilation, Paramedic Only** |

- 15) Defibrillate @ 4j/kg PRN

³⁰ If persistent VF recurs after successful defibrillation, repeat defibrillation at the last energy level that restored a perfusing rhythm

³¹ Paramedics or Intermediates should consider placing an IO

PEDIATRIC ASYSTOLE

FIRST RESPONDER, BASIC EMT

Initiate CPR, Ventilate with 100% oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Confirm and document Asystole in 2 leads
- 2) Secure airway
- 3) Initiate IV of NS at KVO rate³²

INTERMEDIATE EMT/PARAMEDIC

- 4) **Epinephrine 1:10,000 0.01mg/kg IVP/IO or Epinephrine 1:1000 0.1mg ET, repeat Epinephrine 1:1000 0.1mg/kg IVP/IO/ET every 3 minutes**
- 5) **Atropine 0.02 mg/kg IVP/IO (minimum single dose 0.01mg and maximum single dose 0.5mg)³³**
- 6) Contact Medical Control for additional instructions
- 7) Perform focused history and detailed physical examination enroute to the hospital if patient status and management of resources permit
- 8) Asystole that does not respond to the above treatment sequences may be considered refractory. It may be appropriate to discontinue resuscitative efforts in refractory Asystole as permitted by Medical Control
- 9) Reassess the patient frequently

³² Intermediates and Paramedics should consider IO placement

³³ Maximum cumulative dose in 2mg/kg

PEDIATRIC PULSELESS ELECTRICAL ACTIVITY

Pulseless Electrical Activity (PEA) appears on cardiac monitoring as absent pulses with organized QRS complexes. The following dysrhythmias may present as PEA:

- Electromechanical dissociation (EMD)
- Pseudo-EMD
- Idioventricular escape rhythms
- Bradysystolic rhythms
- Post-defibrillation idioventricular rhythms

FIRST RESPONDER, BASIC EMT

Initiate CPR, Ventilated with 100% oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Secure airway
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate or fluid challenge of 20cc/kg

INTERMEDIATE EMT/PARAMEDIC

- 4) **Epinephrine 1:10,000 0.01mg/kg IVP/IO or epinephrine 1:1000 0.1mg/kg ET, repeat Epinephrine 1:1000 0.1mg/kg IVP/IO/ET every 3 minutes**
- 5) **Atropine 0.02 mg/kg IVP/IO (mimum single dose 0.1mg and maximum single dose 0.5mg)³⁴ If rate is less than 60 bpm**
- 6) Contact Medical Control for further instructions

³⁴ Maximum cumulative dose is 2mg/kg

PEDIATRIC BRADYCARDIA

Bradycardia generally arises due to hypoxia. Therefore, airway, ventilation, and oxygenation are the highest management priorities. The cause of the hypoxia should be identified and corrected.

Definition: Severe cardiopulmonary compromise is indicated by:

- Poor perfusion as evidenced by delayed capillary refill, weak or absent peripheral pulses, or altered mental status
- Hypotension
- Respiratory difficulty

FIRST RESPONDER, BASIC EMT

- 1) Administer oxygen
- 2) Begin transport (if able)
- 3) Request ALS intercept
- 4) If heart rate is less than 60 in an infant/child, begin CPR

ADVANCED EMT

- 5) Cardiac monitor
- 6) Initiate IV of NS at KVO rate

INTERMEDIATE EMT/PARAMEDIC

- 7) Intubate if appropriate
- 8) **Epinephrine 1:10,000 0.01mg/kg IV/IO or 0.1mg/kg ET, repeat Epinephrine 1:1000 0.1mg/kg every 3 minutes**
- 9) **Atropine 0.02mg/kg (minimum dose: 0.1mg)³⁵**
- 10) May repeat atropine once
- 11) **By MCP Order ONLY: Dopamine infusion 2-20mcg/kg/min**Paramedic Only**
- 12) Reassess the patient frequently
- 13) Contact Medical Control for further instructions including:
 - a. Initiation of cardiac pacing
 - b. Repeated administration of epinephrine
 - c. Repeated administration of atropine

³⁵ Maximum single dose: 0.5mg for child; 1.0mg for adolescent

PEDIATRIC TACHYCARDIA

FIRST RESPONDER, BASIC EMT

BLS measures, high flow oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

Definitions:

- 1) Severe cardiopulmonary compromise is indicated by:
 - a. Poor perfusion as evidenced by delayed capillary refill, weak or absent peripheral pulses, or altered mental status
 - b. Respiratory difficulty
- 2) The three types of tachycardia may be distinguished by the following signs:
 - a. Sinus Tachycardia is usually present when:
 - An infant exhibits tachycardia in which the heart rate is slower than 220 bpm or a child exhibits tachycardia in which the heart rate is slower than 180 bpm
 - There is a normal QRS duration for age (less than or equal to 0.08 seconds)
 - Normal P waves are present, the R-R interval is variable, and the P-R interval is constant
 - b. Supraventricular Tachycardia is usually present when:
 - An infant exhibits tachycardia in which the heart rate is faster than 220 bpm or a child exhibits tachycardia in which the heart rate is faster than 180 bpm
 - There is a normal QRS duration for age (less than or equal to 0.08 seconds)
 - P waves are abnormal or absent
 - c. Presumptive ventricular tachycardia is present when:
 - The QRS duration is wide for age (greater than 0.08 seconds)

Treatment:

- 1) Assess circulation and perfusion
- 2) Cardiac monitor
- 3) Establish IV of NS at KVO rate
- 4) Check blood glucose
- 5) For probable sinus tachycardia identify and treat possible causes such as: hypovolemia, shock, or hypoxia

INTERMEDIATE EMT/PARAMEDIC

- 6) For supraventricular tachycardia with signs of cardiopulmonary compromise:
- a. **Adenosine 0.1mg/kg (maximum individual dose 6.0mg) rapid IVP**
 - b. **By MCP Order Only:** May repeat twice at **0.2mg/kg (maximum individual dose 12mg)** as needed
-Perform synchronized cardioversion** at 0.5-1.0 joules/kg. If patient remains in SVT, repeat cardioversion** at double the energy (max 360 joules). **By MCP order only,** Sedation may be accomplished by administering **Lorazepam 0.05-0.1mg/kg diluted slow IVP/IO** (maximum dose 2mg) **Paramedic Only**
- 7) For ventricular tachycardia with a pulse:
- a. If patient has adequate perfusion, **Lidocaine 1 mg/kg IVP.** This dose may be repeated twice PRN to a maximum cumulative dose of 3 mg/kg. NOTE: If vascular access is not readily available and patient is poorly perfused, go directly to cardioversion**
 - b. Perform synchronized cardioversion** at 0.5-1.0 joules/kg. If patient remains in V-Tach, repeat cardioversion** at double the energy (max 360 joules). **By MCP order only,** Sedation may be accomplished by administering **Lorazepam 0.05-0.1mg diluted slow IVP/IO** (maximum dose 2mg) **Paramedic Only.**
 - c. If rhythm is converted successfully, start **Lidocaine infusion at 20-50 mcg/kg/min**
 - d. Contact Medical Control for further instructions

****not in intermediate scope of practice**

PEDIATRIC DECREASED LEVEL OF CONSCIOUSNESS

PEDIATRIC DIABETIC EMERGENCY

Criteria: Patient presents with an altered level of consciousness other than usual for the patient. Consider all possible causes for this including head trauma

FIRST RESPONDER / BASIC

- 1) Secure the airway. Administer 100% oxygen. Assist ventilation as needed
- 2) If low blood sugar is suspected:
 - a. If the patient is alert but confused, administer Instant Glucose orally
 - b. If the patient has a decreased level of consciousness, then place the patient in the recovery position on their left side. Protect the patient's airway
- 3) Begin transport (if able)
- 4) Request ALS intercept

ADVANCED EMT

- 5) Cardiac monitor
- 6) Establish IV of NS at KVO rate
- 7) Perform blood glucose check

INTERMEDIATE EMT/PARAMEDIC

- 8) If blood glucose <60:
 - a. **50% Dextrose 1.0 ml/kg** for children older than 2 years
 - b. **25% Dextrose 2.0 ml/kg** for children younger than 2 years
 - c. If unable to establish a patent IV site **Glucagon 0.3 mg/kg IM for infants** (Maximum dose 1mg) **0.1mg/kg IM for children** (maximum dose 1mg) ****Paramedic Only**
- 9) If blood glucose >400 administer 10cc/kg fluid bolus
- 10) If suspected Opiate OD with decreased LOC and respiratory depression that will require intubation, **Narcan 0.1mg/kg IVP**

PEDIATRIC SEIZURES

FIRST RESPONDER / BASIC EMT

BLS measures, turn child on their left side, if possible, administer oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Appropriate airway management
- 2) Cardiac monitor
- 3) If patient is hot or has a fever, cool patient
- 4) Initiate IV of NS at KVO rate
- 5) Determine blood glucose level
- 6) If diabetic condition suspected, refer to PEDIATRIC DECREASED LEVEL OF CONSCIOUSNESS protocol (**See page 87**)

INTERMEDIATE EMT/PARAMEDIC

- 7) Administer one of the following anticonvulsants as chosen by Medical Control. All IV anticonvulsants should be given (over 1-2 minutes) to prevent apnea
 - a. **Lorazepam 0.1mg/kg (maximum individual dose 2mg) diluted slow IVP ****Paramedic Only.****
- 8) If seizures persist, contact Medical Control for further instructions including repeating the same dose

****not in intermediate scope of practice**

PEDIATRIC NON-TRAUMATIC SHOCK

Definition: Shock may be categorized as hypovolemic, distributive, or cardiogenic.

Manifestations of shock include:

- Altered mental status
- Tachypnea
- Absent peripheral pulses
- Cool, clammy, mottled skin
- Capillary refill time longer than 2 seconds
- Hypotension and/or bradycardia (late findings)

FIRST RESPONDER / BASIC EMT

BLS measures, administer high flow oxygen, maintain body temperature, begin transport (if able), request ALS intercept

ADVANCED EMT, INTERMEDIATE EMT, PARAMEDIC

- 1) Cardiac monitor
- 2) Establish IV of NS at KVO rate
- 3) Administer a fluid bolus of 20ml/kg to maximum flow rate. Reasses patient after bolus. If signs of shock persist, bolus may be repeated at the same dose up to 2 times for a maximum total of 60ml/kg
- 4) Reassess the patient frequently, including breath sounds

PEDIATRIC ANAPHYLACTIC SHOCK ALLERGIC REACTION

The following protocol is intended for patients with allergic reaction or anaphylactic shock. For patients with generalized allergic manifestations that do not meet the criteria listed below, contact Medical Control prior to treatment.

Definitions:

The patient with an allergic reaction will have:

- Generalized allergic manifestations, such as urticaria (hives)
- A history of allergic exposure

To meet the criteria for anaphylactic shock, the patient must have the findings listed above *plus* one of the following:

Partial or complete airway obstruction

Signs of shock:

- Altered mental status
- Respiratory distress
- Weak or absent peripheral pulses
- Cyanosis

FIRST RESPONDER / BASIC EMT

BLS measures, appropriate airway management, high flow oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Cardiac monitor
- 2) Establish IV of NS using age-appropriate large bore catheter. Do not delay transport for IV access
- 3) If patient meets criteria for anaphylactic shock, administer a fluid bolus of 20ml/kg to maximum flow rate. Reassess patient after bolus. If signs of shock persist, bolus may be repeated at the same dose up to 2 times for a maximum total of 60ml/kg

INTERMEDIATE EMT/PARAMEDIC

- 4) If patient meets criteria for anaphylactic shock, **By MCP Order Only**, administer **epinephrine 1:1000 at 0.01mg/kg (maximum individual dose 0.3mg) via subcutaneous injection**
- 5) If bronchospasm is present in a patient with adequate ventilation, administer **Albuterol 1.25-2.25mg (age dependent) via nebulizer** at 15 minute intervals throughout transport
- 6) **PARAMEDICS ONLY: By MCP Order Only, Benadryl 1.0mg/kg (maximum individual dose 25mg) IVP.**

PEDIATRIC TOXIC EXPOSURE/OVERDOSE

Criteria: Evidence of ingestion, inhalation, or absorption of a toxic substance. Only those patients who exhibit symptoms following an overdose or toxic exposure should be treated. When in doubt consult Medical Control.

FIRST RESPONDER / BASIC EMT

BLS measures, administer oxygen, begin transport (if able), request ALS intercept

ADVANCED EMT

- 1) Appropriate airway management
- 2) Cardiac monitor
- 3) Initiate IV of NS at KVO rate
- 4) Give 20cc/kg fluid bolus for hypotension

INTERMEDIATE EMT/PARAMEDICS

- 5) If suspected Opiate OD with decreased LOC and respiratory depression that will require intubation, administer **Narcan at 0.1mg/kg (maximum individual dose 2mg) IVP.**
- 6) Treatment for other toxic exposures may be instituted **by MCP order only.**
- 7) Contact Medical Control for specific information about individual toxic exposures and treatments

NEWBORN RESUSCITATION

FIRST RESPONDER / BASIC EMT

Suction the infant's airway using a bulb syringe as soon as the infant's head is delivered and before delivery of the body. Suction the mouth first, then the nasopharynx.

- 1) Once the baby is fully delivered, dry the baby, replace wet towels with dry ones, and wrap the baby in the thermal blanket or dry towel. Cover the infant's scalp to preserve warmth.
- 2) Open and position the airway. Suction the airway again using a bulb syringe. Suction the mouth first, then the nasopharynx.
- 3) Assess breathing and adequacy of ventilation.
- 4) If ventilation is inadequate, stimulate the infant by gently rubbing the back and flicking the soles of the feet.
- 5) If ventilation is still inadequate after brief stimulation, begin assisted ventilation at 40-60 breathes per minute using a bag valve device with high flow 100% oxygen.
- 6) If ventilation is adequate and the infant displays central cyanosis, administer high flow oxygen via blow-by. Hold the tubing 1 to 1 ½ inches from the infant's nose and cup a hand around the end of the tubing to help direct the oxygen flow toward the infant's face.
- 7) Assess heart rate by auscultation or by palpation of the umbilical cord stump.
- 8) If the heart rate is slower than 80 beats per minute after 30 seconds of assisted ventilation, initiate the following actions:
 - a. Continue assisted ventilation with high flow, 100% oxygen
 - b. Begin chest compressions at a rate of 120 per minute
 - c. Initiate transport
 - d. Reassess heart rate and respirations en-route
- 9) If the heart rate is between 80-100 beats per minute, initiate the following actions:
 - a. Continue assisted ventilation with high flow oxygen
 - b. Stimulate as previously described
 - c. Initiate transport. Reassess heart rate after 15 to 30 seconds.
- 10) Assess skin color. If central cyanosis is still present, continue blow-by oxygen. Initiate transport. Reassess heart rate and respirations en-route.
- 11) Contact Medical Control for additional instructions.

ADVANCED EMT

- 12) Cardiac monitor

INTERMEDIATE EMT/PARAMEDIC

- 13) If thick meconium is present, initiate endotracheal intubation before the infant takes its first breath. Suction the airway using an appropriate suction adapter while withdrawing the endotracheal tube. Repeat this procedure until the endotracheal tube is clear of meconium. If the infant's heart rate slows, discontinue suctioning immediately and provide ventilation until the infant recovers.
- 14) See pediatric arrest protocol.

DEATH OF A CHILD AND SUDDEN INFANT DEATH SYNDROME (SIDS)

ALL LEVELS

There is no normal parental reaction to the death of a child or a SIDS event. Individual responses may range from emotional outbursts to apparent withdrawal. Rescuers should not make any assumptions or judgments. Maintain a professional demeanor at all times. Perform the initial assessment, environment, and focused history as part of the clinical process. Observe, assess, and document accurately and objectively.

- 1) Assess airway and breathing. Confirm apnea.
- 2) Assess circulation and perfusion.
- 3) Initiate cardiac monitoring (if capable). Confirm absent pulse.
- 4) Determine whether to perform further resuscitation measures:
 - a. If patient does not exhibit lividity or rigor, proceed with cardiopulmonary resuscitation
 - b. If the patient exhibits lividity and rigor, do not resuscitate as permitted by Medical Control. Proceed with next step.
 - c. ***NOTE:*** Lividity can be mistaken for bruising and evidence of abuse. **Do not make any assumptions or judgments.**
- 5) Provide supportive measures for parents and siblings:
 - a. Explain the resuscitation process, transport decision, and further actions to be taken by the hospital or medical examiner.
 - b. Reassure parents that there was nothing they could have done to prevent death.
 - c. Allow the parents to see the child and say good-bye.
 - d. Maintain a supportive, professional attitude no matter how the parents react.
 - e. Whenever possible, be responsive to parental request. Be sensitive to ethnic and religious needs or responses and make allowances for them.
- 6) Obtain patient history using a nonjudgmental approach. Ask open ended question as follows:
 - a. Has the child been sick?
 - b. Can you describe what happened?
 - c. What actions were take when the child was discovered?
 - d. Has the child been moved?
 - e. When was the child last seen before this occurred, and by whom?
 - f. How did the child seem when last seen?
 - g. When was the last feeding provided?

- 7) Reassess the environment. Document findings, noting the following:
 - a. Where the child was located upon arrival.
 - b. Description of objects located near the child upon arrival.
 - c. Unusual environmental conditions, such as a high temperature, abnormal odors, or other significant findings.
- 8) If the parents interfere with treatment or attempt to alter the scene, initiate the following actions:
 - a. Remain supportive, sympathetic, and professional.
 - b. Avoid arguing with the parents or exhibiting anger.
 - c. Do not restrain the parents or request that they be restrained unless scene safety is clearly threatened.
- 9) Document the emergency call, including the following information:
 - a. Time of arrival.
 - b. Initial assessment findings and basis for resuscitation decision.
 - c. Time of resuscitation decision.
 - d. Time of arrival at hospital if resuscitation and transport were initiated
 - e. Parental support measures provided if resuscitation was not initiated.
 - f. History obtained (note who provided the information).
 - g. Environmental conditions.
 - h. Time law enforcement personnel arrived on the scene.
 - i. Time that scene responsibility was turned over to law enforcement personnel.

PEDIATRIC ABUSE AND SEXUAL ASSAULT

ALL LEVELS

When caring for children injured at home, be alert to the following findings suggestive of child abuse:

- 1) Explanation of circumstances or mechanisms of injury conflicting with the actual injuries of the child.
- 2) Suspicious wounds (such as cigarette burns, belt marks, multiple bruises, or abrasions in various stages of healing).
- 3) Procrastination of parents in seeking help.
- 4) Child with a history of repeated injuries.
- 5) Blame for injuries placed on other people.

Suspected sexual assault may accompany physical abuse, may be present with obvious signs of genital trauma, or may be unaccompanied by any signs of child abuse may also relate to sexual assault.

GENERAL INSTRUCTIONS:

- 1) Provide any necessary treatment for trauma and shock (if present).
- 2) History and environment inspection. Document as carefully as possible the caretaker's description of what happened including:
 - a. Abuse (belt on floor, overturned furniture) or neglect.
 - b. The behavior of all adults present.
 - c. The clothing (condition, stains, and appropriateness).
Leave clothing intact and bring with the patient. If clothing removed prior to EMS arrival, place clothing in a **PAPER** bag and bring with the patient.
- 3) What to say:
 - a. Be non-judgmental. Support the family in their concern for the child.
 - b. Give reassurance to the child. The child may fear all adults and may not readily allow the EMS responder to treat him/her. Record any statement made by the patient in his/her own words.
 - c. Persuade the caretaker of the need for hospital transportation (based upon the need for medical diagnosis and treatment). If the caretaker will not allow the child to be transported, notify the police, your supervisor, and Child Protective Services.

Drug Endangered Child Protocol

ALL LEVELS

Indications:

- ❖ Drug endangered children are children under age 18 found to be living in homes:
 - (a) With caregivers who are manufacturing methamphetamine in/around the home “meth labs” and/or
 - (b) Where caregivers are dealing/using methamphetamine and the children have access to the drug or drug residue “meth homes”.

Considerations:

- ❖ Only OSHA-certified Law Enforcement Authority (LEA) will enter a **KNOWN** meth lab.
- ❖ Responders may only enter the scene if it has been secured and determined safe by LEA.

-
- ❖ EMS personnel will wear PPE.
 - ❖ The health and safety of the children involved will take priority of all other concerns.
 - ❖ Every child will be evaluated for respiratory, trauma or acute medical problems.
 - ❖ On scene decontamination will be based on the child’s exposure to chemicals.
 - ❖ Special consideration should be given to who helps the child undress (ex. Male to male).
 - ❖ Remove child’s clothing, red bag clothing, and make clothing available to law enforcement.
 - ❖ Wrap child in blanket, while protecting the child’s modesty, and protect against hypothermia.
 - ❖ Wipe child down with pre-moistened wipes or towel wetted with IV fluids.
 - ❖ Follow LEA procedure for disposal of contaminated wipes, gloves, and other PPE.
 - ❖ Child should not bring personal items on transport (blankets, toys, etc.).
 - ❖ Transport to the Emergency Department.
 - ❖ Perform medical assessment including vital signs.

MEDICATIONS

(ADULT & PEDIATRICS)

ADENOSINE (Adenocard)		Antiarrhythmic
ADULT Treatment:	<ul style="list-style-type: none"> ● PSVT: 6mg Rapid IVP. <u>By MCP Order Only:</u> May repeat in 1-2 minutes at 12mg. 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● PSVT: 0.1mg/kg (maximum individual dose 6.0mg) rapid IVP. <u>By MCP Order Only:</u> May repeat at 0.2mg/kg (maximum individual dose 12mg) 	
Precautions:	2 nd or 3 rd degree AV block, sick sinus syndrome	
Side effects:	Transient dysrhythmias, facial flushing, dyspnea, chest pressure, hypotension, headache, nausea	

Albuterol 0.083% (Ventolin)		Bronchodilator
ADULT Treatment:	<ul style="list-style-type: none"> ● Pulmonary edema, anaphylaxis, asthma, COPD: 2.5mg by nebulizer 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Asthma: < 1 year old 1.25mg by nebulizer > 1 year old 2.25mg by nebulizer 	
Precautions:	Tachydysrhythmias	
Side effects:	Tachydysrhythmias, anxiety, nausea and vomiting	

AMIODARONE (Cordarone)		Antiarrhythmic
ADULT Treatment:	<ul style="list-style-type: none"> ● Cardiac Arrest: 300mg rapid IVP, repeat at 150mg rapid IVP in 3-5 minutes. ● Wide-Complex Tachycardia (Stable): <u>By MCP Order Only</u>, 150mg IV over first 10 minutes (15mg/min). May repeat 150mg IV every 10 minutes as needed. 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Cardiac Arrest: 5mg/kg bolus IV/IO ● Wide-Complex Tachycardia (Stable): <u>By MCP Order Only</u>, 5mg/kg IV over 20 to 60 minutes 	
Precautions:	Vasodilation and hypotension	
Side effects:	May prolong QT interval, caution in renal failure	

ATROPINE SULFATE		Vagolytic
ADULT Treatment:	<ul style="list-style-type: none"> ● Asystole: 1mg IVP or 2mg ETT, repeated every 3-5 minutes as indicated (maximum cumulative dose in 0.04mg/kg). If the initial dose is administered by ETT tube the maximum cumulative dose may not apply; <u>Contact MCP for guidance.</u> ● <u>Symptomatic Bradycardia:</u> 0.5-1.0mg IVP and if necessary, repeat every 3-5 minutes (maximum cumulative dose of 0.04mg/kg) ● PEA (bradycardia): 1mg IVP or 2mg ETT, repeated every 3-5 minutes (maximum cumulative dose on 0.04mg/kg) ● Organophosphate poisoning: <u>By MCP Order Only:</u> 2-5mg IVP repeated in 15-30 minutes if indicated (no maximum cumulative dose). 	
PEDIATRIC Treatment:	● Symptomatic bradycardia: 0.02mg/kg IV/IO (minimum dose 0.1mg) may be repeated once.	
Precautions:	Atrial fibrillation, atrial flutter, glaucoma	
Side effects:	Dilated pupils, tachydysrhythmias, ventricular tachycardia and fibrillation, headache, dry mouth.	

DEXTROSE		Nutrient
ADULT Treatment:	<ul style="list-style-type: none"> ● Hypoglycemia: (If clinically hypoglycemic and blood glucose <60), 25g of D50 IVP/rectally, repeated in 5-10 minutes if indicated. 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Hypoglycemia: <ul style="list-style-type: none"> < 8 years old (If clinically hypoglycemic and blood glucose <60), 0.5g/kg of D25 IVP (2ml/kg). ** (D25 waste ½ amp of D50 and dilute remainder with NS) > 8 years old (If clinically hypoglycemic and blood glucose <60), 0.5g/kg of D50 IVP (1ml/kg). 	
Precautions:		
Side effects:	Tissue necrosis if extravasation occurs	

DIPHENDYDRAMINE (BENADRYL)		Antihistamine
ADULT Treatment:	<ul style="list-style-type: none"> ● Anaphylaxis: <u>By MCP Order Only</u>, 25-50mg slow IVP over 2 minutes diluted in 10cc NS. (maximum dose of 50mg). ● Extrapyramidal symptoms: <u>By MCP Order Only</u>, 25-50mg slow IVP over 2 minutes diluted in 10cc NS. (maximum dose on 50mg). 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Anaphylaxis: <u>By MCP Order Only</u>, 1mg/kg slow IVP over 2 minutes diluted in 10cc NS. (maximum dose of 50mg) 	
Precautions:	Asthma , pregnant or lactating females.	
Side effects:	Sedation, blurred vision, anticholinergic effects	

DOPAMINE (Intropin)		Inotrope
ADULT Treatment:	<ul style="list-style-type: none"> • Hypotension with signs and symptoms of shock: (systolic blood pressure <90 mm/Hg). 5mcg/kg/min titrating for improvement. (Maximum dose on 20mcg/kg/min). --Mix 800mg in 500ml NS equals 1600 mcg/ml concentration $\frac{5\text{mcg} \times ? \text{ kg} \times 60 \text{ min/hr}}{1600 \text{ mcg/ml}} = \text{ _____ ml/hr}$ 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> • Hypotension after fluid resuscitation and stable rhythm: By MCP Order Only, 2.5-5mcg/kg/min titrating for improvement (Maximum dose of 20mcg/kg/min). --Mix 6 x ? kg = ? mg to add to 100ml of NS $\frac{2.5\text{-}5\text{mcg} \times ? \text{ kg} \times 60 \text{ min/hr}}{\text{concentration}} = \text{ _____ ml/hr}$ 	
Precautions:	Tachydysrhythmias	
Side effects:	Tachydysrhythmias, V-Tach, V-Fib, hypertension, nausea and vomiting, ischemia, AMI, extravasation causes tissue necrosis.	

****CONVERSION****

$$\frac{\text{lbs}}{2.2} = \text{kg}$$

DOPAMINE INFUSION CHART

(1600mcg concentration)

Patient wt in kg: 20 kg 40 kg 60 kg 80 kg 100 kg

DOSAGE:	Mix 800mg in 500ml NS. Infuse at microdrops per Minute (60 gtts/min set)				
5mcg/kg/min	4cc/hr	8cc/hr	11cc/hr	15cc/hr	19cc/hr
10mcg/kg/min	8cc/hr	15cc/hr	23cc/hr	30cc/hr	38cc/hr
15mcg/kg/min	11cc/hr	23cc/hr	34cc/hr	45cc/hr	56cc/hr
20mcg/kg/min	15cc/hr	30cc/hr	45cc/hr	60cc/hr	75cc/hr

DUONEB (Ipratropium Bromide 0.5mg/Albuterol Sulfate 3.0mg)		Bronchodilator
ADULT Treatment:	<ul style="list-style-type: none"> ● Asthma, COPD: 3 ml solution by nebulizer 	
PEDIATRIC Treatment:		
Precautions:	<p>Do not use if patient on Spiriva. Do not use if allergy to soy or peanuts. Do not use if hypersensitivity to atropine. Caution is patients with narrow-angle glaucoma</p>	
Side effects:	Dry mouth, palpitation, nervousness, headache, nausea and vomiting	

EPINEPHRINE (Adrenaline)		Vasopressor
ADULT Treatment:	<ul style="list-style-type: none"> ● Allergic reaction: <u>By MCP Order Only,</u> 0.3mg SQ (1:1000). Repeat in 5 minutes if indicated. ● Asthma/COPD (severe): <u>By MCP Order Only,</u> 0.3mg SQ (1:1000). Repeat in 5 minutes if indicated. ● Cardiac Arrest, V-Fib, Pulseless V-Tach, Asystole, PEA: 1mg IVP (1:10,000). Repeat in 3-5 min. 2mg ETT (1:10,000) or (1:1000 followed by 10ml NS). Repeat in 3-5 minutes. 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Allergic reaction: <u>By MCP Order Only,</u> --0.01mg/kg SQ (1:1000) repeat once in 20 minutes if indicated, (maximum single dose is 0.3mg). --0.01mg IV/IO (1:10,000). Must diluted in 10cc NS. Each 1mg must be slow IVP over 1 minute. ● Asthma: <u>By MCP Order Only,</u> 0.01mg/kg SQ, (maximum single dose is 0.3mg). ● Cardiac Arrest, PEA, Asystole, Bradycardia: 0.01mg/kg IVP/IO (1:10,000) or 0.1mg/kg ETT (1:1,000). Repeat every 3-5 minutes as indicated. 	
Precautions:	Asthma: Tachydysrhythmias, coronary artery disease.	
Side effects:	Tachydysrhythmias, V-Tach, V-Fib, angina, hypertension	

FUROSEMIDE (Lasix)		Diuretic
ADULT Treatment:	<ul style="list-style-type: none"> ● Acute Pulmonary edema: 20-40mg slow IVP over 2 min. <u>By MCP Order Only</u>, for dose over 40mg. 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Acute Pulmonary edema: <u>By MCP ORDER ONLY</u>, 1mg/kg slow IVP over 2 minutes X 1 dose 	
Precautions:	Dehydration, hypokalemia, hepatic coma	
Side effects:	Hypokalemia, hypotension, frequency of urination, dizziness	

GLUCAGON (GlucaGen)		Hormone
ADULT Treatment:	<ul style="list-style-type: none"> ● Hypoglycemia: BG <60. If unable to obtain IV access for dextrose, 1mg IM. 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Hypoglycemia: BG <60. If unable to obtain IV access for dextrose; --Infants: 0.3mg/kg IM or SQ (maximum dose 1mg) --Children: 0.1mg/kg IM (maximum dose 1mg) 	
Precautions:	Do Not mix with saline for injection	
Side effects:	Vomiting, hyperglycemia	

LIDOCAINE 2% (XYLOCAINE)		Antiarrhythmic
ADULT Treatment:	<ul style="list-style-type: none"> ● VF, Pulseless VT: 1-1.5mg/kg IVP repeat every 5 minutes. (maximum cumulative dose 3mg/kg) ● VT with pulse: 1-1.5mg/kg slow IVP, then 0.5-0.75mg/kg IVP every 5-10 minutes up to 3mg/kg ● Ventricular ectopy: 1-1.5mg/kg slow IVP, then 0.5-0.75mg/kg IVP every 5-10 minutes up to 3mg/kg 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● VF, Pulseless VT: 1mg/kg IVP/IO (maximum single dose is 50mg) repeated once in 5-10 minutes at 1mg/kg if indicated 	
Precautions:	2 nd and 3 rd degree block, hypotension, Stokes-Adams Syndrome	
Side effects:	Seizures, slurred speech, altered mental status	

LORAZEPAM (Ativan)		Anticonvulsant/Sedation
ADULT Treatment:	<ul style="list-style-type: none"> ● Seizure: <u>By MCP Order Only</u>, 1-2mg diluted in 10cc NS slow IVP, 2mg IM. PARAMEDIC ONLY ● Sedation: <u>Bt MCP Order Only</u>, 1-2mg diluted in 10cc NS slow IVP. PARAMEDIC ONLY 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Seizure: <u>By MCP Order Only</u>, 0.05-0.1mg/kg diluted in 10cc NS slow IVP (maximum dose 2mg) PARAMEDIC ONLY ● Sedation: <u>By MCP Order Only</u>, 0.05-0.1mg/kg diluted in 10cc NS slow IVP (maximum dose 2mg) PARAMEDIC ONLY 	
Precautions:	Acute narrow-angle glaucoma	
Side effects:	Respiratory depression, hypotension, apnea, nausea and vomiting, drowsiness, restlessness, delirium; be prepared to ventilate patient	

MAGNESIUM SULFATE		Electrolyte
ADULT Treatment:	<ul style="list-style-type: none"> ● Cardiac Arrest (for hypomagnesemia or torsades de pointes): 1-2g (2-4 ml of a 50% solution) diluted in 10ml of D5W IV push ● Torsades de pointes (not in cardiac arrest): 1-2g mixed in 50-100ml of D5W over 5-60 minutes IV ● Seizures secondary to Eclampsia: <u>By MCP Order Only</u>, 2-4g diluted slow IVP over 3 minutes 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Hypomagnesemia or torsades de pointes: 25-50mg/kg IV/IO over 10-20 minutes (maximum 2g) 	
Precautions:	Renal disease, heart block, occasional fall in BP with IVP, hypotension, bradycardia	
Side effects:	Respiratory and CNS depression, hypotension, cardiac arrest	

MORPHINE		Analgesic
ADULT Treatment:	<ul style="list-style-type: none"> ● Severe chest pain unrelieved by Nitro: <u>By MCP Order Only</u>, 2-4mg diluted in 10cc NS slow IVP ● Severe pain: <u>By MCP Order Only</u>, 2-4mg diluted in 10cc NS slow IVP 	
PEDIATRIC Treatment:		
Precautions:	Administer slowly, respiratory depression, hypotension, histamine reaction at injection site, administer naloxone for reversal	
Side effects:	See above	

NALOXONE (Narcan)		Narcotic antagonist
ADULT Treatment:	<ul style="list-style-type: none"> • <u>SUSPECTED OPIATE OD WITH DECREASED LOC AND RESPIRATORY DEPRESSION THAT WILL REQUIRE INTUBATION:</u> 2mg IVP or 4mg ETT over 2 minutes. 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> • <u>SUSPECTED OPIATE OD WITH DECREASED LOC AND RESPIRATORY DEPRESSION THAT WILL REQUIRE INTUBATION:</u> 0.1mg/kg slow IVP 	
Precautions:	Respiratory depression	
Side effects:	Withdrawal symptoms in the addicted patient	

NITROGLYCERINE		Vasodilator
ADULT Treatment:	<ul style="list-style-type: none"> • Chest pain (ischemic): 0.4mg SL (1 spray or 1 tablet) every 5 minutes as indicated (maximum 3 doses or 1.2mg) • Hypertensive Crisis: <u>By MCP Order Only,</u> 0.4mg SL (1 spray or 1 tablet) every 5 minutes as indicated (maximum 3 doses or 1.2mg) 	
PEDIATRIC Treatment:		
Precautions:	Hypotension, hypovolemia, intracranial bleeding	
Side effects:	Hypotension, headache, dizziness, nausea and vomiting, vertigo	

PROMETHAZINE (Phenergan)		Antiemetic
ADULT Treatment:	<ul style="list-style-type: none"> ● Uncontrolled vomiting: (make sure IV is patent) 12.5mg <u>DILUTED IN 10CC NS MINIMUM!!!</u> slow IVP 	
PEDIATRIC Treatment:		
Precautions:	PHLEBITIS WITH TISSUE NECROSIS IF UNDILUTED OR NON-PATENT IV WITH INFILTRATION	
Side effects:	Respiratory depression, lethargy	

SODIUM BICARDONATE		Electrolyte/Alkalinizer
ADULT Treatment:	<ul style="list-style-type: none"> ● Cardiac arrest: (8.4%) 1mEq/kg IVP repeated at 0.5mEq/kg every 10 minutes as indicated. ● Antidepressant and sedative hypnotic overdose: <u>By MCP Order Only</u>, (8.4%) 1mEq/kg slow IVP, repeated once at 1mEq/kg if indicated 	
PEDIATRIC Treatment:	<ul style="list-style-type: none"> ● Use 4.2% in neonates (waste ½ amp 8.4% and dilute with NS) ● Cardiac arrest: (8.4%) 1mEq/kg slow IV/IO (if ventilation is adequate) repeated once after 10 minutes at 0.5mEq/kg 	
Precautions:	Impaired renal function, CHF	
Side effects:	Metabolic alkalosis, hypokalemia, hyperosmolarity, fluid overload; be prepared to ventilate after administration	

THIAMINE		Vitamin
ADULT Treatment:	<ul style="list-style-type: none"> ● Unconscious, hypoglycemia, malnourishment: 100mg slow IVP over 5 minutes 	
PEDIATRIC Treatment:		
Precautions:	Give dextrose first if indicated	
Side effects:	May cause anaphylaxis (have epinephrine available)	

VASOPRESSIN		Vasopressor
ADULT Treatment:	<ul style="list-style-type: none"> ● VF, Pulseless V-Tach: 40u IV, single dose, 1 time only. Must wait 10 minutes before administering epinephrine. 	
PEDIATRIC Treatment:		
Precautions:	Must wait 10 minutes before administering epinephrine	
Side effects:	May cause cardiac ischemia	

APPENDIX

GLASGOW COMA SCALE (ADULT / CHILD / INFANT)

Glasgow Coma Scale

INFANT	EYE OPENING	CHILD/ADULT	
4	Spontaneously	Spontaneously	4
3	To Speech	To Command	3
2	To Pain	To Pain	2
1	No Response	No Response	1

BEST VERBAL RESPONSE

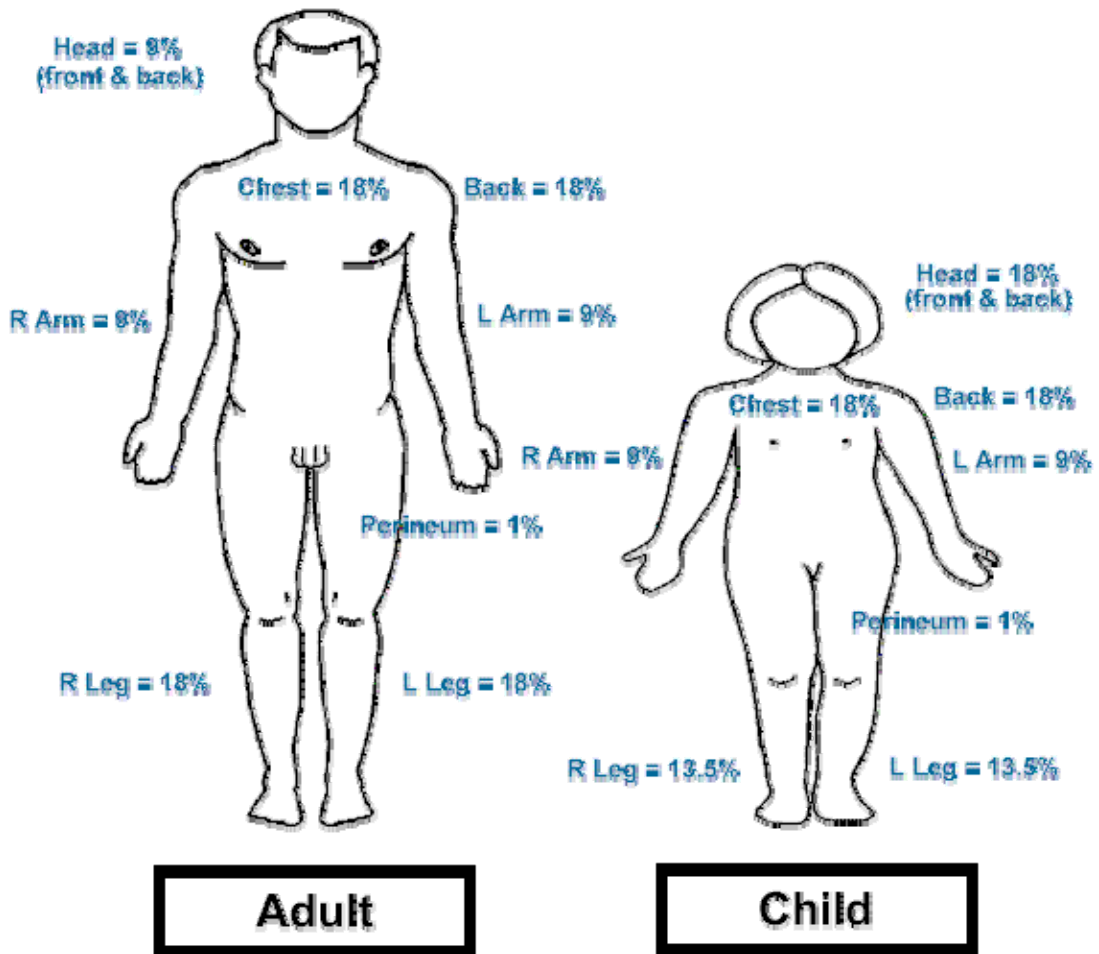
5	Coos, Babbles	Oriented	5
4	Irritable Cries	Confused	4
3	Cries to Pain	Inappropriate Words	3
2	Moans, Grunts	Incomprehensible	2
1	No Response	No Response	1

BEST MOTOR RESPONSE

6	Spontaneous	Obeys Commands	6
5	Localizes Pain	Localizes Pain	5
4	Withdraws from Pain	Withdraws From Pain	4
3	Flexion (Decorticate)	Flexion (Decorticate)	3
2	Extension (Decerebrate)	Extension (Decerebrate)	2
1	No Response	No Response	1

_____ Total (Glasgow < 8? Intubate) Total _____

RULE OF NINES (ADULT / CHILD / INFANT)



APGAR SCORE

APPEARANCE		
All Pink		2
Blue Extremities / Pink Body		1
Blue / Pale		0
PULSE		
Over 100		2
Less Than 100		1
Absent		0
GRIMACE		
Cough, Cry, Sneeze		2
Grimace		1
None		0
ACTIVITY		
Active Movement		2
Some Flexion		1
Flaccid		0
RESPIRATIONS		
Strong Cry, Good Volume		2
Weak Cry, Slow Irregular		1
Absent		0

The APGAR Score should be recorded at 1 minute and 5 minutes after birth.

REVISED TRAUMA SCORE

Respiratory Rate	
10 - 24/min	4
15 - 35/min	3
>35	2
<10	1
0	0
Respiratory Effort	
Normal	1
Shallow/Retractive	0
Systolic Blood Pressure	
>90	4
70 - 90	3
50 - 69	2
<50	1
No Carotid Pulse	0
Capillary Refill	
Normal (<2 sec)	2
Delayed (>2sec)	1
No Capillary Refill	0
Glasgow Coma Scale	
14 - 15 points	5
11 - 13 points	4
8 - 10 points	3
5 - 7 points	2
3 - 4 points	1

FORMULAS / DRIP RATES

Weight (weight in pounds) / 2.2 for kilograms or
(weight in kilograms) x 2.2 for pounds

Temperature $F = C \times 1.8 + 32$

Celsius to Fahrenheit (Temp in C x 9/5) + 32

IV Infusions

$$\frac{\text{Amount to be infused (in cc or ml)} \times \text{gtts/ml}}{\text{Time in minutes}}$$

Drug Administration

$$\frac{\text{Amount to be administered (in mg)} \times \text{volume in syringe (in ml)}}{\text{Amount of the drug on hand (in mg)}}$$

Fluid Resuscitation in Burn Patients

- 2-4cc of Lactated Ringers x body weight (in kg) x % of TBSA
- Half of this amount is infused over the first 8 hours from time of injury
- The remainder is infused over the next 16 hours post burn
- It is important to use fluid resuscitation formula because over or under administration of IV fluids can have a detrimental effect on your patient.
- Always check lung sounds during fluid administration

Microgram Formulas

Concentration $\text{mcg/cc} = \frac{1000 \times \text{\#mg}}{\text{\#cc}}$

Dose $\text{mcg/kg/min} = \frac{\text{rate} \times \text{concentration}}{\text{Kg} \times 60 \text{ min}}$

Rate $\text{cc/hr} = \frac{\text{dose (mcg/kg/min)} \times \text{kg} \times 60\text{min}}{\text{concentration in mcg/cc}}$

Systolic BP for ages 1-10yrs = $70 + (\text{age in years} \times 2)$

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Remember that these protocols are only a guideline and are not to be followed blindly without regard for the patient's condition or response to therapies. Use common sense. Treat the patient, not the monitor, pulse oximeter, or BP cuff. Contact Medical Control for consultation on unusual situations as needed.

AUTHORIZATION FOR PROTOCOLS

These protocols are issued by the provider Medical Director and the Clark County Health Department. The signatures below indicate their approval, and, therefore, govern the practice of EMS personnel practicing in Clark County, Indiana.

Provider Medical Director

Provider Co-Medical Director

Kevin R. Burke, M.D., Medical Director, Clark County Health Department

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