Greater Miami Valley
Emergency Medical Services Council

# 2010
# Standing Orders
# Training Manual

**Paramedic**

Effective January 1, 2010

**GMVEMSC PREHOSPITAL PARAMEDIC STANDING ORDERS TRAINING MANUAL**
**VERSION January 1, 2010**
**Adult: Patients 16 Years Old and Above**
**Pediatric: Patients under 16 Years Old**
**All Pediatric Treatments will be in Pink and Bulleted with a "P"**

ADULT and PEDIATRIC ORDERS INDEX

## STIPULATIONS

- This protocol is for use by those individuals operating in and under the authority of the Greater Miami Valley EMS Council (GMVEMSC) Drug Box Exchange Program and certified by the State of Ohio as an EMT-Paramedic.
- This protocol is to be used in the field only. Communications must be attempted as soon as practical for potentially unstable patients or hospitals that request contact on all patients being transferred to their facility.
- Procedures that are marked with a diamond (♦) are never to be performed without a physician's order. The diamond provides identification of procedures and medications that require on-line Medical Control authorization.
- No procedures, techniques, or drugs will be used without the proper equipment or beyond the training or capabilities of the prehospital personnel. Nothing in this protocol may be used without specific pre-approval of the Medical Director for the local department or agency.
- Items enclosed in braces ({ }) are at the option of the department and its medical director.
- EMS personnel of any level are not authorized to intubate, unless they have and can use appropriate confirmation devices ($EtCO_2$ detectors or monitors, and/or Esophageal Detection Devices).
- *Infrequently*, unusual patient situations and multiple complaints with competing priorities may prevent stepwise adherence to a specific section of this protocol. However, at no time should treatment options exceed those authorized without direct consultation with Medical Control. In all such cases, contact with Medical Control should be considered when logistically feasible.
- The Adult and Pediatric Orders ("Peds") have been combined.

P **All Pediatric Treatments will be in Pink and Bulleted with a "P"**

- There are a few sections which apply only to Adult or Peds and are indicated as such.

**G** There are also a few sections which apply to only Geriatric patients and are indicated with a bold **"G"**.

## ADMINISTRATION

### Non-Initiation of Care

- Resuscitation will not be initiated in the following circumstances:
  - Burned beyond recognition
  - Decapitation
  - Deep, penetrating, cranial injuries
  - Massive truncal wounds
  - DNR Order - present and valid
  - Frozen body
  - Hemicorporectomy (body cut in half)
  - Rigor mortis, tissue decomposition, or severe dependent lividity
  - Triage demands
  - Blunt trauma found in cardiac arrest *unless* one of the following conditions are present:
    - Patient can be delivered to an emergency department in 5 minutes
    - If the arrest is caused by a medical condition
    - Focused blunt trauma to the chest (such as a baseball to the chest)
      - The reason for this is that Commotio cordis is a form of sudden cardiac death, seen most often in boys and young men playing sports. It occurs as the result of a blunt, non-penetrating impact to the precordial region from a ball, bat or other projectile.
  - Penetrating trauma found in cardiac arrest when the patient cannot be delivered to an emergency department within 15 minutes.
    - Resuscitation will be initiated on victims of penetrating trauma who arrest after they are in EMS care
- Once en route, continue care even if the above time limits cannot be met.

## DNR: Comfort Care / Comfort Care Arrest

**∅ GENERALLY DOES NOT APPLY TO PEDS**

**DNR-Comfort Care (CC)**

*(Permits any medical treatment to diminish pain or discomfort that is not used to postpone the patient's death.)*
The following treatments are permitted:

- Suctioning
- Oxygen
- Splint/immobilization
- Control bleeding
- Pain control

The following treatments are ***not*** permitted:

- Chest compressions
- Airway adjuncts
- Resuscitative drugs
- Defibrillation/cardioversion/monitoring
- Respiratory assistance (oxygen, suctioning are permitted)

**DNR-Comfort Care Arrest (CCA)**

*(Permits any medical treatment until the patient goes into cardiac or respiratory arrest.)*

- Any appropriate standing orders treatment until cardiac or respiratory arrest/agonal breathing occurs.

*Note: When a Durable Power of Attorney for Healthcare (DPA-HC) is present and the "Living Will and Qualifying Condition" box is checked, the DPA-HC cannot override the patient's DNR status. A patient may change their DNR status at anytime verbally, in writing or action.*

## Field Termination of Resuscitation Efforts

**∅ FIELD TERMINATION DOES NOT APPLY TO PEDS**

♦ When a patient in cardiac arrest has failed to respond to Advanced Life Support (ALS), it may be decided to terminate the effort and not transport the patient to the hospital. When the paramedic determines that this option is appropriate, the following criteria must be met:

- The victim must:
  - Be 18 years or older
  - Be in asystole or PEA
  - Not be in arrest due to hypothermia
  - Have an advanced airway
  - Have vascular access
- PEA rate of higher than 40 should be given additional consideration before field termination is initiated. Pre-hospital care providers should be aware that patients in PEA with a rate equal to or greater than 40 may not be in true cardiac arrest. The patient may not have palpable pulses due to being hemodynamically unstable. Medical Control may not approve field termination of a patient in PEA based on this criterion.
- ♦ Contact Medical Control directly to receive consent for field termination.
- **Ensure that the EMS Coordinator of the hospital that authorized the field termination receives a copy of the run sheet for his/her records.**

*Note: Pediatric patients may meet non-initiation of care criteria.*

## Field Termination of Resuscitation Efforts with No Available ALS

- ♦ When faced with a patient in Cardiac Arrest, no ALS equipment is available at the scene, and transport time to a medical facility will exceed 20 minutes, they may consider contacting a MCP for orders to terminate the resuscitation.
- ♦ MCP must be contacted and the physician must speak directly with the EMS provider, and must give consent for the resuscitation effort to cease.

- The intent of this section is to avoid the risks of emergency transport of patients who are almost certainly non-viable.
- **Ensure that the EMS Coordinator of the hospital that authorized the Field Termination receives a copy of the run sheet for his/her records.**

*Note: Pediatric patients may meet non-initiation of care criteria.*

## INITIAL CARE

- Follow basic, advanced life support and airway algorithms as indicated based on current AHA Guidelines.
- Obtain chief complaint (OPQRST), SAMPLE history, and vital signs per patient condition.
- Utilize cardiac monitor and/or other monitoring device {pulse oximeter, etc.} as appropriate.
- Start IV of **Normal Saline (NS)** or a **Saline Lock (SL)** as appropriate.
- **IVs:**
    - Shock: run wide-open using regular, macro-drip, or blood tubing. Decrease fluid rate if SBP >100.
    - P IV NS, 20 ml/kg using regular or macro-drip tubing. Titrate to maintain adequate perfusion.
    - Medical Emergencies, Head Trauma, Cardiac Problems (with stable BP): Use TKO rate.
    - IV Medication Administration – Slow IV = over 2 minutes, unless otherwise specified**.**
    - P Spend no more than 5 minutes at the scene on this procedure**.**
    - Any medication given IV can also be given IO.
- {IV pump} Pumps with pediatric specificity are recommended. Follow manufacturer's guidelines for use.
- Use of IO devices is limited to patients that are unresponsive and hemodynamically unstable, and only when less invasive means are not available or are ineffective (i.e. Glucagon IM, Narcan MAD, Versed MAD, etc.).
    - {Adult IO devices} are optional, but have the same restrictions.
    - **Lidocaine 1.5 mg/kg, IV up to 100 mg** via the IO site for the pain caused by pressure of fluid administration, unless contraindicated (allergies, third degree heart block etc.) is approved only for adults.
- Existing central venous catheters, dialysis catheters, fistulas, or grafts may be utilized for infusion of IV fluids and medication if the patient is in cardiac arrest, profoundly unstable or rapidly deteriorating.
- ♦ In a patient with an existing IV pump who is experiencing an allergic reaction, the pump may only be discontinued after receiving approval from Medical Control. Otherwise, the IV pump must be maintained. Exception: hypoglycemic diabetic patients with an insulin pump (see "Maintenance of Existing Medication Pumps" section for details).
- Bring the patient's medications, or a list of the medications, with the patient to the hospital. When supplying the hospitals with documentation of patient medications, be certain to include the dose, and frequency of administration.

NOTE: Use Pedi-Wheel or length-based resuscitation as a reference for pediatric vital signs.
*NOTE: For patient with an insulin pump: take extra tubing and medication packet(s) to receiving facility with patient, if available.*

## AIRWAY MAINTENANCE

- **$O_2$** as needed. Use the following rates as guidelines:
  - **2 LPM by NC** for patient with COPD
  - **4 - 6 LPM by NC** for other patients
  - **12 - 15 LPM by NRB** for severe trauma patients, distressed cardiac patients, patients with respiratory distress, and other patients who appear to need high flow **$O_2$**
- Ventilate patients who are symptomatic with an insufficient respiratory rate or depth
- Consider intubation if airway compromise or insufficient ventilations are present.
- Consider patient airway anatomy and condition for the appropriate selection of the proper airway adjunct.
  - If approved, adjuncts considered "rescue airways" such as the LMA or Dual Lumen Airways may be appropriate for a primary airway device.
- When deciding whether to intubate, consider the following:
  - Insufficient respiratory rates, <10 or >29, that are not rapidly controlled by other measures
  - Irregular respiratory rhythm
  - Abnormal breath sounds
  - Inadequate chest expansion and respiratory depth
  - Excessive effort to breathe
  - Use of accessory muscles
  - Nasal flaring
  - Pallor or cyanosis
  - Cardiac dysrhythmias
- Confirm correct placement of advanced airway by at least five methods. Capnography is the Gold Standard. $CO_2$ detection methods are recommended.

| **Respiratory Rates by Age** | |
|---|---|
| **Up to 1year** | **30-60** |
| **1 – 3 years** | **20-40** |
| **4 – 6 years** | **20-30** |
| **7 – 9 years** | **16-24** |
| **10 – 14 years** | **16-20** |
| **15+ years** | **12-20** |

**Assessment Methods:**

- Physical assessment including auscultation of the epigastrium, anterior chest, midaxillary areas, then the epigastrium again.
- Repeat visualization of the tube between the vocal cords.
- Condensation in the tube.
- Keeping an oral endotracheal tube at the 20-22 cm mark at the teeth will prevent inserting the ETT too far and greatly reduces the chances of a right mainstem bronchus intubations. Don't confuse right mainstem intubation for a pneumothorax.

P Proper depth placement of tracheal tube in the pediatric patient can be calculated by the following formula: Depth of insertion (marking on tube at teeth or gum line) = tube size x 3.

- Nasotracheal tubes need to be placed more deeply, or the tube will only reach the pharynx, not the trachea. A nasotracheal tube that is at 22 cm at the nose is unlikely to reach the glottis. When a nasotracheal tube is correctly placed, there is often only an inch or so between the nose and the ET adapter. Avoid nasal intubation if there is central facial movement or CSF present. EDDs and $EtCO_2$ detectors can help prevent the disaster of esophageal intubation, but they cannot identify placement in a mainstem bronchus. That requires physical assessment, including depth of the tube, and auscultation.

**Confirmation Devices:**

- {$EtCO_2$ Monitor}
- {$EtCO_2$ with waveform}
- {$EtCO_2$ Detector}
- {Esophageal Detection Device (EDD)}

## End Tidal $CO_2$ Detector ($ETCO_2$) -- Colorimetric

**Limitations**

- EDD or Waveform $EtCO_2$ are preferred confirmation devices for patients in cardiac arrest. The Colormetric $EtCO_2$ detector may be utilized as a confirmation device for patients in cardiac arrest **IF** it shows the presence of $CO_2$ (color changes to yellow). If there is no color change, use other confirmation methods (e.g., revisualization). The absence of color change in a properly placed tube may be caused by a lack of perfusion, but it may indicate esophageal intubation.
- Secretions, emesis, etc., can ruin the device.
- A patient with large amounts of carbonated beverage (i.e., beer) in his stomach can give a false positive. The device may sense the $CO_2$ given off by that beverage and indicate that the tube in the trachea, when it is in the esophagus.
- Use the device for no more than two hours.
- For weight restrictions, follow manufactures' recommendations.

**Medication Issues:**

- If you administer medications via ETT, remove the $EtCO_2$ detector for several ventilations, until no medication returns through the tube during exhalation. Medications splashing up the tube can alter color change.
- Intravenous sodium bicarbonate will produce more carbon dioxide resulting in enhanced color.

## Electronic End Tidal $CO_2$ ($ETCO_2$) Monitors - Capnography

These devices measure the amount of carbon dioxide in the exhaled ventilations of patients. They can use mainstream sensors, which are located directly on the endotracheal tube, or sidestream sensors, which samples the ventilation more remotely from the patient. Capnography can be used with patients who are not intubated. In-line $EtCO_2$ monitors can be used on patient with or without adequate perfusion. Electronic monitors are more sensitive, so changes can be seen in real-time.

Capnography or capnometry is considered the "gold standard" of tube placement confirmation. **If your department has this equipment, it should be used on EVERY intubation, and always be one of your five confirmation steps.**

## Esophageal Detector Device (EDD)

These devices confirm tube placement mechanically. It is based on the principle that the esophagus is a collapsible tube, while the trachea is rigid. An EDD looks like a bulb syringe. Collapse the bulb first and then place the device on the end of the ETT prior to first ventilation. As the bulb tries to refill with air, it creates suction. If the tube is in the esophagus, the soft tissues will collapse around the holes in the ETT preventing expansion of the bulb. When the bulb does not refill (or refills very slowly), the tube is presumed to be in the esophagus. If the tube is in the trachea, there is nothing to occlude the movement of air. The bulb will rapidly refill, indicating that the ETT is properly placed.

**Limitations:**

- A large amount of gastric air (i.e. caused by carbonated beverage, aggressive ventilations, misplacement of ETT) and late term pregnancy can give a false positive finding. According to the AHA, the EDD may yield misleading results in patients with morbid obesity, late pregnancy, or status asthmaticus, or when there are copious endotracheal secretions because with these conditions the trachea may be obstructed.
- A cold device may give a false negative result. (If the rubber bulb is stiff from the cold, it will fail to fill with air. The ETT will seem to be in the esophagus, when it is actually in the trachea).
- Cannot be used continuously. It must be removed after confirmation, though you may reuse it after patient movement.
- Used only for confirmation of endotracheal tube placement, not for any other airways (LMA, King, etc.)

P May only be used on pediatric patients who are older than 5 years of age and weigh at least 20 kg/44 pounds.

**Beck Airway Airflow Monitor (BAAM)**

The BAAM is a device to assist with nasotracheal tube placement. The BAAM is a small plastic device that attaches to the endotracheal tube. It emits a whistle sound when the patient inhales and exhales which should become notably louder with cuff inflation.

**Indications for Various Intubation Confirmation Devices**

| | Nasopharyngeal ETT | Oral ETT | Pulseless Pt. | Apneic Patient |
|---|---|---|---|---|
| **Colorimetric $EtCO_2$** | Useful | Useful | MAY be useful | Useful |
| **Electronic Waveform $EtCO_2$** | Useful | Useful | Useful | Useful |
| **EDD** | Relatively contraindicated | Useful | Useful | Useful |
| **Pulse-Ox** | Useful | Useful | May be useful | Useful |

*NOTE: Intubation is not permitted unless at least one of the above devices is utilized.*

- Always secure the ET tube in place as effectively as possible, preferably with a commercial tube-securing device.
- Cervical collar is effective in maintaining patient's head in a neutral position.
- Re-assess ET tube placement every time the patient is moved.
- {Digital Intubation} and {Lighted Stylet Intubation} may be utilized.
- {Dual Lumen Airways (i.e., Combitube, Pharyngotracheal Lumen Airway (PtL), King Airway)}, or a Laryngeal Mask Airway (LMA), are acceptable airway devices and satisfy the "rescue airway" component for {STI}. Use of these devices is limited to patients who need an artificial airway, and who are able to tolerate the device (similar to use of oral airways).
- If routine ventilation procedures are unsuccessful, try to visualize obstruction with laryngoscope. If foreign body is seen, attempt to remove it using suction, and/or Magill forceps, if possible.
    - Standard obstructed airway maneuvers should also be used.
- If an awake patient requires intubation, consider the following:
    - Applying **Lidocaine Jelly** to the ET tube
    - **Lidocaine 80 mg** {**IN** half dose per nostril} or **nebulized** with 8-12 LPM **$O_2$**

P **Lidocaine 2 mg/kg nebulized** with 8-12 LPM **$O_2$.** Maximum dose is 80 mg.

*NOTE: Nebulized Lidocaine can be administered simultaneously and in the same nebulizer with Albuterol and Ipratropium. If feasible, wait one to two minutes before intubating.*

- If intubating nasally, the BAAM may be used to assist with intubation.
- After confirmed intubation, if the patient is resisting and SBP >100, consider **Midazolam 2-4 mg slow IV over 2 minutes.**

P If SBP is appropriate, consider **Midazolam 0.1 mg/kg (Max dose 4 mg), slow IV over 2 minutes.**

- If a patient would benefit from intubation but is combative, agitated, or has jaws clenched, paramedics may use {Sedate to Intubate} procedures.
- Tension Pneumothorax Relief: If indications of Tension Pneumothorax are present, decompress the chest with a 14 gauge, 2 1/4 inch (or longer) angiocath placed in the second or third intercostal space in the mid-clavicular line.
- Whenever all reasonable attempts to provide an adequate airway by less invasive means have failed, perform a cricothyrotomy utilizing an approved method.

**{Sedate to Intubate}**

Sedate to intubate may only be utilized with department and medical director approval. Do not attempt if successful intubation is unlikely due to foreseeable complications.

- Pre-oxygenate the patient. If possible, avoid using a BVM to reduce gastric distention.
- Apply a cardiac monitor and pulse oximeter.
- In suspected stroke, intracranial hemorrhage, head injury, or signs of increased intracranial pressure, administer **Lidocaine 100 mg, IV.**
- Administer **Etomidate 0.3 mg/kg, IV** (average initial dose is 15-25 mg). Repeat initial dose within 2 minutes as needed. Apply cricoid pressure to reduce the possibility of aspiration and facilitate intubation.
- After the jaw relaxes (30-60 seconds), intubate. Confirm tube placement as above!
- After intubation, if the patient is resisting and SBP >100, administer **Midazolam 2-4 mg, IV** over 2 minutes.
- If you are unable to immediately intubate the patient, rapidly begin ventilating with a BVM with cricoid pressure or other rescue ventilation device (i.e. LMA, Combitube, etc.).
- For problems, contact Medical Control.
- Whenever all reasonable attempts to provide an adequate airway by less invasive means have failed, perform a cricothyrotomy utilizing an approved method.

## NEBULIZED MEDICATION

Nebulized medication may be administered while ventilating a patient with a BVM. The process ideally requires two oxygen sources, one attached to the nebulizer and one attached to bag-valve device and an extra elbow. If you have only one oxygen source, attach it to the nebulizer until nebulized medication delivery is complete, then attach to BVM. Refer to the diagram and skill sheet for further information.

## Central Venous Catheters

Patients who require long-term intravascular therapy often have Central Vascular Access Devices (CVAD) in place. There are three types of CVADs: central catheters, Peripherally Inserted Central Catheters (PICC lines), and subcutaneously implanted ports. Paramedics are only permitted to access central catheters and PICC lines, not subcutaneously implanted ports.

**Description of CVADs:**

- Central catheter: Catheter placed through chest wall into the internal jugular or subclavian veins and may extend into the superior vena cava. Central catheters can be single or multilumen. Distal portion of catheter is external with access ports. Paramedics are permitted to access this catheter.
- Subcutaneously Implanted Port: Device surgically placed under the skin on the chest. No external access. Paramedics are not permitted to access this device.
- PICC Line: Catheter placed in arm. Distal portion of catheter is external with access port. Do not force fluids or drugs through the device or failure could result in an embolism. PICC line size creates significant resistance to fluid flow making it difficult to flow large quantities of fluids or $D_{50}$. IM Glucagon is preferable to trying to give $D_{50}$ by PICC. Paramedics are permitted to access this device.

Direct access into the central circulation can result in the following complications:

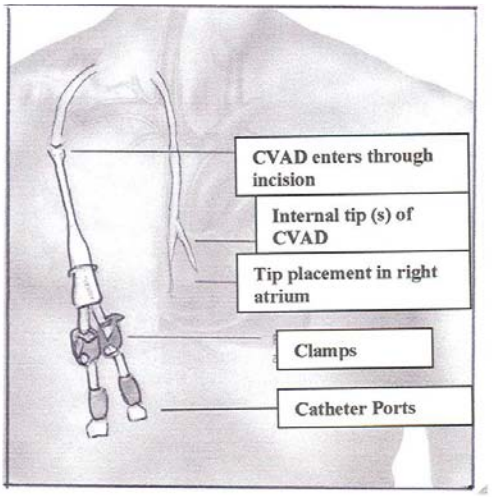
- Infection: Thorough cleaning of the selected port must be done three times during the procedure: before attaching the syringes and before attaching the IV tubing.
- Air Embolism: All central venous catheters have clamps. The catheter must be clamped before attaching the syringes and before removing the syringes.
- Heparin Bolus: These catheters remain in place without fluids continually flowing through them. To prevent blood clot formation, a bolus of Heparin or other anticlotting agents will be in the catheter. 5 ml of blood must be removed so that the Heparin is not systemically administered to the patient resulting in a potentially significant complication.

- Catheter Damage: Use a 10 ml syringe or larger when drawing off 5 ml blood as smaller syringes create too much pressure. After verifying blood return, flush catheter with 10 ml of NS using a 10 ml or greater syringe utilizing a pulsating technique. Administer medications slowly to avoid creating too much pressure. *Do not use catheter if unable to get blood return.*
- **Do NOT use a pressure infusion device on CVAD's**.

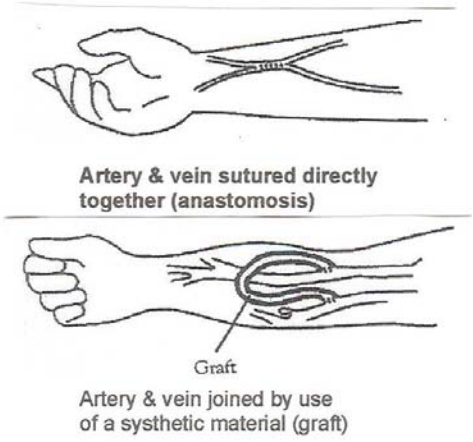
## Internal Dialysis Fistula

A dialysis fistula is an artificial passage between an artery and a vein used to gain access to the bloodstream for hemodialysis. In hemodialysis, the patient's blood is pumped through the internal arteriovenous fistula. These internal shunts may be a result of the artery and vein being sutured directly together (anastomosis) or by the use of a synthetic material, called a graft, to join the artery and vein. They are usually located in the inner aspect of the patient's forearm resulting in a bulge under the skin that should be visible or easily palpated.
In cardiac arrest or the profoundly unstable/rapidly deteriorating patient, a dialysis fistula, may be accessed to administer IV fluids or medication.

While utilizing an aseptic technique, be careful not to puncture the back wall of the vessel. **Use pressure infusion device (bag) for infusion**. Blood may still backup in the IV tubing. Patients receiving dialysis have an increased risk of hemorrhage because of their regular exposure to anticoagulants during hemodialysis. Control bleeding with direct pressure.




CENTRAL VENOUS ACCESS




VASCULAR ACCESS - HEMODIALYSIS

## Maintenance of Existing Medication Pumps

Do not stop the flow of medication unless you receive direct orders from Medical Control. There are some drugs, such as Flolan that could kill the patient if stopped. If you think the patient is experiencing an allergic reaction, call Medical Control. A possible reason for Medical Control to have you shut off the pump would be a patient having an allergic reaction who is receiving a new antibiotic being administered IV with the pump.

*NOTE: The exception is a diabetic patient with an Insulin Pump who is hypoglycemic as confirmed by a blood glucose monitor. If you are NOT familiar with the device, disconnect the tubing from the pump (first choice) or remove needle assembly from the patient (second choice). Do NOT turn off the pump. You may hit the wrong button and, inadvertently bolus the patient with a large amount of Insulin. If you are familiar with the device it is permissible to "Suspend" the administration of Insulin.*

Further info: http://www.ems.ohio.gov/policies/boardpolicypts%20preexisitingmedicaldevices.pdf

## CARDIOVASCULAR EMERGENCIES

### CARDIAC ARREST: Basic Life Support

- Assess patient for respiratory and cardiac arrest
- Initiate CPR and {AED/Defibrillator} using most current American Heart Association Guidelines
- Ratio of compressions to breaths of 30:2 at a rate of about 100 compressions per minute
- Consider {Impedence Threshold Device (i.e. Res Q Pod)}
- Transport patient as appropriate
- Consider treatable causes

| CPR | Adult and Older Child (puberty and older) | Child (1 year old to puberty) | Infant (Less than 1 year old) |
|---|---|---|---|
| **Establish that the victim does not respond** Activate your emergency response system | Activate your emergency response system as soon as the victim is found. | Activate your emergency response system after giving 5 cycles of CPR. | |
| **Open the airway** Use Head tilt-chin lift. | Head tilt-chin lift (Suspected trauma: jaw thrust) | | |
| **Check breathing** If the victim is not breathing, give 2 breaths that make the chest rise. | Open the airway, look, listen, and feel.<br><br>Take at least 5 seconds and no more than 10 seconds. | | |
| **First 2 breaths** | Give 2 breaths<br>(Delivered over 1 second each) | | |
| **Check pulse** At least 5 seconds and no more than 10 seconds. | Carotid pulse<br>(If no pulse, start CPR) | Carotid pulse<br>If no pulse or pulse <60 bpm with signs of poor perfusion, start CPR | Brachial pulse<br>If no pulse or pulse <60 bpm with signs of poor perfusion, start CPR |
| **Rescue Breaths** Victim has a pulse, but is not breathing | 1 breath every 5-6 seconds delivered over 1 second each<br>(1 breath every 6-8 seconds with an advanced airway) | 1 breath every 3-5 seconds delivered over 1 second each<br><br>1 breath every 6-8 seconds with an advanced airway | |
| **Start CPR** | | | |
| Compression location | Center of breastbone between nipples | | Just below nipple line on breastbone |
| Compression method | Heel of 1 hand, other hand on top<br>(or 1 hand for small victims) | | 2 fingers<br>(2 thumb-encircling hands for 2 rescuer CPR) |
| Compression depth | 1 ½ to 2 inches | ⅓ to ½ depth of chest | |
| Compression rate | 100 per minute | | |
| Compression to ventilation ratio | 30:2<br>(1 or 2 rescuer CPR) | 30:2 for 1 rescuer CPR<br>15:2 for 2 rescuer CPR | |

*NOTE: Current AEDs may not be programmed to the current AHA Guidelines. Utilize AED as it is programmed.*
*AEDs are to be used only on patients over 1 year of age. If available, use AEDs or pads which are designed for pediatric use for children 1-8 years of age.*

**General Considerations:**

- CPR should not be interrupted for more than 10 seconds until spontaneous pulse is established.
- You are expected to provide resuscitative care at the scene. Cardiac arrests should not be transported unless the patient has Return of Spontaneous Circulation (ROSC) or you are unable to secure an airway and establish vascular access, or the MCP refuses to authorize Field Termination.
- An unstable cardiac patient is one who is hypotensive or has chest pain with poor skin color or diaphoresis.
- In all cardiac arrests, consider the ACLS "Treatable Causes:" i.e. "H's" and "T's"

| **"H's"** | **"T's"** |
|---|---|
| Hypovolemia | Toxins |
| Hypoxia | Tamponade, Cardiac |
| Hypo-/hyperkalemia | Tension Pneumothorax |
| Hydrogen Ion (Acidosis) | Thrombosis (Coronary, Pulmonary) |
| Hypoglycemia | Trauma |
| Hypothermia | |

- For renal dialysis patients in arrest:
  - **Calcium Chloride 10% (1,000 mg)**
  - P **Calcium Chloride 10%, 0.2 ml/Kg (20 mg/kg) IV.**
  - *Flush IV line thoroughly* between Calcium and Sodium Bicarb. **It is critical that these drugs not be given together, as they will precipitate.**
  - **Sodium Bicarb 100 mEq IV**
  - P **Sodium Bicarb 1 mEq/kg IV.**
- For patients in cardiac arrest from smoke inhalation or suspected cyanide poisoning.
  - **Sodium Thiosulfate 12.5 gm (50ml) slow IV over 2 minutes**
  - P **Sodium Thiosulfate:,**
    - P **If > 25kg, 50 ml (12.5 g) slow IV over 2 minutes**
    - P **If < 25kg, then 1.65 ml/kg (412.5 mg/kg) of the 25% solution, not to exceed 50ml (12.5 grams), slow IV over 2 minutes**
- For pregnant patient in arrest consider need for manual uterine displacement and perform chest compressions slightly higher on the sternum than normal.

**CARDIAC ARREST: V-Fib/Pulseless V-Tach**

- If unwitnessed arrest, initiate CPR for 2 minutes
- Defib: 360 for monophasic, to manufacturer's recommendations for biphasic.
- If patient converts from a ventricular arrhythmia and no previous anti-arrhythmic drug has been administered than Amiodarone 150 mg in 250 cc NS, IV over 10 minutes using 60 drop tubing wide open shall be administered.

P Defib: 2 J/Kg or biphasic equivalent

- If witnessed arrest, Defib: 360 for monophasic, to manufacturer's recommendations for biphasic.

P Defib: 2 J/Kg or biphasic equivalent

- CPR for 2 minutes
- Defib: 360 for monophasic, to manufacturer's recommendations for biphasic.

P Defib: 4 J/Kg or biphasic equivalent

- **Epinephrine 1 mg, IV/IO, repeat every 3-5 minutes**
  - **If unable to establish IV, Epinephrine 2 mg, ETT, repeat every 3-5 minutes** (1mg 1:10,000 and 1mg 1:1,000).

P **Epinephrine (1:10,000) 0.01 mg/kg, IV/IO or Epinephrine (1:1,000) 0.1 mg/kg, ETT** repeat every 3-5 minutes

- CPR for 2 minutes

- Defib: 360 for monophasic, to manufacturer's recommendations for biphasic.

P Defib: 4 J/Kg or biphasic equivalent

- **Amiodarone 300 mg, IV/IO**
  - **If unable to establish IV, Lidocaine 1-1.5 mg/kg ETT**

P **Amiodarone 5 mg/kg (Max dose 300 mg), IV/IO**
  - **If unable to establish IV, Lidocaine 1-1.5 mg/kg ETT**

- CPR for 2 minutes
- Defib: 360 for monophasic, to manufacturer's recommendations for biphasic.

P Defib: 4 J/Kg or biphasic equivalent

- Repeat **Amiodarone 150 mg, IV/IO** or **Lidocaine 0.5-0.75 mg/kg, up to 3 mg/kg ETT**

P Repeat **Amiodarone 5 mg/kg, IV/IO (Max dose 300 mg) or Lidocaine 1 mg/kg (Max dose 100mg)**

- Continue CPR and repeat treatment as indicated
- If patient converts with **Lidocaine**, and IV access is obtained, start a **Lidocaine drip at 2-4 mg/min**.

P If patient converts with **Lidocaine,** start a **Lidocaine drip at 20 - 50 mcg/kg/min. (**The premix carried is **Lidocaine, 1 gram** in 250 ml D5W, yielding 4 mg /ml equating to 4000 mcg /ml).
  - 4000mcg / min = 60gtts / min
  - 3000mcg / min = 45gtts / min
  - 2000mcg / min = 30gtts / min
  - 1000mcg / min = 15gtts / min

- Consider treatable causes
- {12-lead EKG}

## CARDIAC ARREST: Asystole/PEA

- CPR for 2 minutes
- **Vasopressin 40 U IV/IO,**
  - **If unable to establish IV, Epinephrine 2 mg, ETT, repeat every 3-5 minutes** (1mg 1:10,000 and 1mg 1:1,000). If IV is subsequently established, Vasopressin is permitted after either first or second dose of Epinephrine.
- CPR for 2 minutes
- Consider **Atropine 1mg, IV/IO** for asystole or slow PEA (repeat every 3-5 minutes up to 3 doses)
- CPR for 2 minutes
- **Epinephrine 1 mg, IV/IO, repeat every 3-5 minutes, no sooner than 10 minutes after Vasopressin.**
- Continue CPR and repeat treatment as indicated
- Consider treatable causes
- {12-lead EKG}

## CARDIAC ARREST: Asystole/PEA

P CPR for two minutes

P **Epinephrine ( 1:10,000) 0.01 mg/kg, IV/IO**
  - **If unable to establish IV, Epinephrine (1:1,000) 0.1 mg/kg ETT,** repeat every 3-5 minutes

P Continue CPR and repeat treatment as indicated

P Consider treatable causes

## Suspected Cardiac Chest Pain

P Chest pain in the pediatric patient is rarely related to a cardiac event. Assessment of other causes (i.e. muscle pain, respiratory difficulties, injury) should be completed to ensure the cause of pain. Application of supplemental oxygen and transport should be the management of care for these patients. Contact Medical Control for further advice when needed.
**The rest of Chest Pain algorithm does not apply to Peds.**

- Ask male and female patients if they are taking Viagra, Cialis, Levitra, Revatio, or similar medications within the last 24 hours. Do not administer Nitroglycerin if taking above medications.
- Give **ASA 324 mg** to every patient with symptoms of ACS. Patient MUST CHEW the ASA.

- If possible, prior to moving patient, acquire a supine {12 Lead EKG repeated as indicated} on all patients with any of the following: ACS symptoms including anginal chest pain, shortness of breath, syncope, diaphoresis, weakness or patients who often have atypical signs and symptoms (i.e., women, elderly, and diabetics).
- Any {12-lead EKG} that meets cardiac alert criteria or that the provider finds questionable should be {transmitted} to Medical Control.
- The Medical Control physician shall be contacted after any {12-lead EKG} {transmission} is completed.
- If evidence of an AMI, transport to an appropriate interventional facility.
- If SBP >100, and the patient is at least 25 years of age administer **Nitroglycerin 0.4 mg SL every 5 minutes x 3** with vital signs between doses. Prior to nitroglycerin adminstration, establish vascular access for patients who have not previously had nitroglycerin.
- Consider **Morphine, up to 5mg, slow IV over 2 min**, provided SBP >100 after first nitro. **DO NOT WAIT UNTIL 3 NITROS ARE GIVEN BEFORE CONSIDERING MORPHINE.**
- If unable to obtain IV, give **Morphine 5 mg SQ**, provided SBP >100
- After five minutes, may consider repeating **Morphine IV**, provided SBP >100
  - Repeat dose of **Morphine 5 mg SQ** (repeat no sooner than 30 minutes) is indicated only if transport time is greater than 30 minutes
- All patients with evidence of AMI should be transported to an appropriate interventional facility.
- **NS, up to 500 ml,** may be administered to a patient with SBP <100 without pulmonary edema. If RVI is suspected with hypotension, consult Medical Control for fluid bolus.
- Consider repeat {12 Lead} EKGs during transport

*NOTE: Revatio is a drug approved for treatment of pulmonary arterial hypertension (same disease that may be treated with Flolan at end stage). The drug improves exercise ability and contains Sildenafil which is Viagra. For this reason, organic nitrates are contraindicated with Revatio as they are with Viagra. One major difference with Revatio is that it is indicated for both men and women. Fortunately, a history of pulmonary hypertension is more likely to be shared than one of erectile dysfunction. Providers should query patients, particularly PAH patients, about Revatio before giving nitro.*

## Acute Myocardial Infarction (AMI)

Establish communications with Medical Control as early as possible and advise them of a cardiac alert. It is imperative that the paramedic speaks directly with the physician. Rerouting of interventional facilities does not apply to Cardiac Alerts. Follow the appropriate treatment considerations for specific AMI types listed below.

**Destination Considerations:**

- Interventional facility is a hospital that provides PCI 24 hours a day.
- AMIs should be transported directly to an interventional facility, if it is within 30 minutes, even if other hospitals are closer. Consider air medical transport if interventional facility is over 30 minutes away.
- EXCEPTIONS:
  - It is medically necessary to transport the patient to the closest hospital for stabilization.
  - It is unsafe or medically inappropriate to transport the patient directly to an interventional facility due to adverse weather or ground conditions or excessive transport time.
  - Transporting the patient to an interventional facility would cause a critical shortage of local EMS resources.
  - Patient requests transport to a different facility, despite EMS education of patient.
  - Contact MCP to discuss the appropriate destination for resuscitated cardiac arrest patients who have evidence of AMI.

## Interventional Facilities

The following hospitals have PCI capabilities:

Atrium Medical Center
Good Samaritan Hospital
Grandview Hospital
Kettering Medical Center
Miami Valley Hospital
Springfield Regional Medical Center

## Treatment Considerations for AMIs

**Inferior Wall**

*(Leads II, III, aVF; supplied by the Right Coronary Artery)*

- Aggressive fluid administration may be required (i.e. fluid boluses) due to cardiogenic shock, reassess lungs frequently.
- Attempt to capture Lead V4R to determine right ventricular involvement.
- Patient may be sensitive to Nitroglycerin and Morphine administration, monitor BP frequently.
    - Treat hypotension with a fluid challenge and administer Nitroglycerin or Morphine with caution.
- If 2° type II or 3° block, prepare to pace immediately
    - Consider **Atropine 0.5 mg IV up to 3 mg** while awaiting pacer
    - Set at 70 BPM, 20 mA and increase until mechanical capture is obtained
        - Consider **Midazolam 2-4 mg slow IV over 2 minutes**.
- **Dopamine** use is discouraged.

**Anterior Wall**

*(Leads V1-V4; supplied by Left Anterior Descending Artery)*

- ST elevation in more than 2 leads is at higher risk for sudden cardiac death.
- High risk for developing CHF or cardiogenic shock.
- May also develop BBB's, PVC's or 3° blocks.
- **Dopamine** should be the first treatment for significant hypotension rather than fluid boluses.

**Lateral Wall**

*(Leads I, aVL, V5-V6; supplied by Circumflex)*

- May have some LV dysfunction but not as severe as Anterior Wall AMI.
- May also develop AV Nodal Block.

## CARDIAC DYSRHYTHMIAS

### Bradycardia

**Unstable:** A cardiac patient, who is hypotensive, has altered mental status or has chest pain with poor skin color or diaphoresis.

- Obtain {12-lead EKG}
- For adequate perfusion, observe and monitor.
- For poor perfusion,
    - If 2° type II or 3° block, prepare to pace immediately
        - Consider **Atropine 0.5 mg IV up to 3 mg** while awaiting pacer
        - Set at 70 BPM, 20 mA and increase until mechanical capture is obtained
            - Consider **Midazolam 2-4 mg slow IV over 2 minutes.**
    - For other bradycardias,
        - **Atropine 0.5 mg IV up to 3 mg.** If ineffective begin pacing as above.
    - Consider **Dopamine 2-10 mcg/kg/min**

**Unstable:** Any cardiac dysrhythmia that adversely affects the patient's cardiac output and clinical stability are considered unstable.

- P For adequate perfusion, observe, monitor and apply oxygen if needed.
- P For poor perfusion,
    - Perform CPR if HR <60/min
    - **Epinephrine (1:10,000) 0.01 mg/kg, IV/IO or Epinephrine (1:1,000) 0.1 mg/kg, ETT** repeat every 3-5 minutes

- If increased vagal tone or AV block:
  - Consider **Atropine 0.02 mg/kg IV (Minimum dose 0.1mg, Maximum total dose 1 mg),** may repeat dose**.**
  - Consider pacing.
    - Pediatric electrodes should be used on patients <15 kg
    - Start with 5 mA increasing as needed to 200 mA at a rate of 80 bpm until capture is verified
    - Consider **Midazolam 0.1 mg/kg (Max dose 4 mg), slow IV/IO over 2 minutes**

**Tachycardia: ADULT ONLY**

- Obtain {12-Lead EKG}

**Stable:**

- Narrow Complex - Regular
  - Vagal maneuvers
  - **Adenosine 6 mg rapid IV**
    - If patient has history of PSVT and advises it takes 12 mg of Adenosine then skip the 6 mg dose**.**
  - May repeat **Adenosine 12 mg rapid IVP x 2**
- Wide Complex – Regular
  - **Amiodarone 150 mg in 250 cc NS, IV over 10 minutes using 60 drop tubing wide open**
- Wide Complex – Irregular
  - Consider **Amiodarone 150 mg in 250 cc NS, IV over 10 minutes using 60 drop tubing wide**
  - **open**

**Unstable:** A cardiac patient, who is hypotensive, has altered mental status or has chest pain with poor skin color or diaphoresis.

- **Cardioversion: 100, 200, 300, 360 for monophasic or biphasic equivalent**
  - Consider **Midazolam 2-4 mg slow IV over 2 minutes**

**Tachycardia: PEDS ONLY**

**Stable:**

P Vagal maneuvers (Blowing through a straw or oxygen tubing, etc.)

**Unstable:**

P Any cardiac dysrhythmia that adversely affects the patient's cardiac output and clinical stability are considered unstable.
P Vagal maneuvers (Blowing through a straw or oxygen tubing, etc.)
P **Adenosine 0.1 mg/kg rapid IV** (Max dose 6 mg)
P If no response, **Adenosine 0.2 mg/kg rapid IV** (Max dose 12 mg)
P Consider cardioversion
- Consider **Midazolam 0.1 mg/kg (Max dose 4 mg), slow IV** over 2 minutes
- Cardioversion 1 J/kg
- If no response, Cardioversion 2 J/kg

**SHOCK**

**Without Pulmonary Edema**

*(No JVD, edema, or rales noted)*

- **NS 500 ml IV**

P **NS 20 ml/kg IV**. Titrate to maintain adequate perfusion.

- ♦ Repeat **NS 500 ml IV,** if needed

P ♦ Repeat **NS 20 ml/kg IV,** if needed

- For persistent shock, establish additional vascular access.
- If SBP remains <100, **Dopamine drip, start at 5 mcg/kg/min.** Titrate to maintain SBP > 100.

P (If SBP remains <100, **Dopamine drip, start at 5 mcg/kg/min.** Maximum dose is 20 mcg/Kg/min) Titrate to maintain adequate perfusion.

**With Pulmonary Edema**

*(JVD, edema, or rales present)*

- Treat arrhythmias as indicated.
- Consider **NS 250 ml IV**
- If SBP remains <100, **Dopamine drip, start at 5 mcg/kg/min.** Titrate to maintain SBP > 100.

**Exsanguinating Hemorrhage**

- Control external bleeding.
- Treat for hypovolemic shock as indicated.
- Vascular access(es) **NS** to maintain SBP >100 en route to the hospital.

P Vascular access(es) **NS** 20 ml/kg IV. Titrate to maintain adequate perfusion.

P Repeat twice if needed to maintain adequate perfusion.

***Orthostatic Vital Signs:*** *Consider evaluation of orthostatic vital signs in a conscious patient suspected of being volume depleted, provided that there is no suspicion of spinal injury or another condition precluding this assessment. A rise from a recumbent position to a sitting or standing position associated with a fall in systolic pressure (after 1 minute) of 10 to 15 mm HG and/or a concurrent rise in pulse rate (after 1 minute) of 10 – 15 beats per minutes indicates a significant (at least 10%) volume depletion (postural hypotension) and a decrease in perfusion status.*

**STROKE**

- Be prepared to ventilate at a rate of 20 respirations per minute (if signs of cerebral herniation are present) and/or assist ventilations with oral or nasal airway and BVM or {FROPVD}.
  - {If signs of cerebral herniation are present and quantitative (i.e., numeric) End Tidal $CO_2$ ($EtCO_2$) readings are available, ventilate at a rate to maintain $EtCO_2$ readings at approximately 30 mmHg (30 torr)}.
- Complete Cincinnati Prehospital Stroke Scale. If one or more signs on the Cincinnati Prehospital Stroke Scale are abnormal, call a Stroke Alert.

  **Cincinnati Prehospital Stroke Scale:**

  Facial Droop (pt. shows teeth or smiles)
  _____ Normal _____ Abnormal
  Arm Drift (pt. closes eyes and holds both arms straight out for about 10 seconds):
  _____ Normal _____ Abnormal
  Abnormal Speech (have pt. say "you can't teach an old dog new tricks"):
  _____ Normal _____ Abnormal

  **Glasgow Coma Component Scores** (Scores of 8 or less have poor prognosis and need ALS ASAP).

  _____ EYE OPENING (1 – 4) _____ **Total GCS** (3 – 15)
  _____ BEST VERBAL RESPONSE (1 – 5)
  _____ BEST MOTOR RESPONSE (1 – 6)
- Assess Glasgow Coma Scale and blood glucose.
- If glucose <60, or there is strong suspicion of hypoglycemia despite glucometer readings
  - **$D_{50}$, 25 grams IV**.
  - If unable to establish vascular access, **Glucagon 1 mg IM.**
- **Dextrose** may be repeated in ten minutes if blood sugar remains < 60.
- Contact hospital and advise them of a Stroke Alert ***if*** you can arrive within **two hours** of time patient was last seen behaving normally. Select groups of patients may receive thrombolytics after as much as six hours. Consider air transport for Stroke Patients with long transport times.
- Transport historian with patient.
- Complete the "EMS CHECKLIST: SUSPECTED Stroke/CVA/TIA" for every stroke/TIA patient. Copies can be found in emergency rooms.

## Disorders Mimicking Stroke

- Seizures
- Subdural hematoma
- Brain tumor
- Syncope
- Toxic or metabolic disorders (i.e., hypoglycemia)

## TRAUMA EMERGENCIES

### General Considerations

- Minor trauma patients may be transported to non-Trauma Centers.
- Major trauma patients are to be transported as soon as possible to the nearest appropriate facility, per destination protocols.
- Scene size-up, with rapid assessment and recognition of major trauma/multiple system trauma and effective evaluation of the mechanism of injury are essential to the subsequent treatment.
- Document GCS including the individual components.
- Hypothermia is a significant and frequent problem in shock and major trauma patients. Maintain patient's body temperature.
- If patient condition changes, notify hospital.
- When patient is transported by helicopter, the EMS run sheet should be faxed to receiving Trauma Center.
- The *only* procedures that should take precedence to transport of Major Trauma patients are:
    - Airway Management
    - Stabilization of neck/back or obvious femur and pelvic fractures on a backboard
    - Exsanguinating Hemorrhage Control
    - Extrication
- IVs should be attempted en route to the hospital unless the patient is trapped or transport is otherwise delayed, or patient has no life threatening injuries, and transport prior to analgesia would be extremely painful. Start the IV with a large bore catheter, the macro-drip tubing and 1,000 ml of **0.9% NS**.

P Start the IV with a large bore catheter, the macro drip tubing and 20 ml/kg of **0.9% NS**.

- **IV** flow rates are as follows:
    - Keep open rate for major head trauma with adequate perfusion
    - IV wide open if the patient has inadequate perfusion (including head trauma) utilizing {**IV** Pressure Infusion Pump or Bag} or similar equipment if available
- Titrate all IV flow rates to maintain SBP >100.
- A second IV may be established en route.
- For pain relief when the patient is conscious, alert, is not hypotensive, and is complaining of severe pain, consider **Morphine, up to 5 mg slow IV over** 2 minutes, based on patient weight, provided SBP>100.
    - If unable to obtain IV, give **Morphine 5 mg SQ.**
- May repeat **Morphine**, up to 5 mg slow IV over 2 minutes, based on patient weight, provided SBP > 100.
- Repeat dose of **SQ Morphine 5 mg** (repeat no sooner than 30 minutes) is indicated when transport is greater than 30 minutes.

P For pain relief when the patient is conscious, alert, is not hypotensive, and is complaining of severe pain, consider **Morphine, up to 0.1 mg/kg, slow IV over** 2 minutes. (Max dose 5 mg) based on patient weight, provided appropriate normal SBP.

- If unable to obtain IV, give **Morphine 0.1 mg/kg SQ.**
- **Not to be administered to anyone < 2 years of age.**

P ♦May repeat **Morphine 0.1 mg/kg, slow IV over** 2 minutes.

P ♦Repeat dose of **SQ Morphine 0.1 mg/kg SQ** (Max dose 5 mg) (repeat no sooner than 30 minutes) is indicated when transport is greater than 30 minutes.

## Triage and Transport Guidelines

**Concepts:**

- After the trauma patient's extrication, the on-scene time should be limited to **10 minutes or less**, except when there are extenuating circumstances.
- Trauma Patients, as identified in the document, should be transported to the nearest appropriate trauma center.
- Use of on-line, active Medical Control for medical direction in the field, particularly for difficult cases, is encouraged in compliance with regional standing orders.
- **Pre-arrival notification of the receiving facility is essential!** Give Mechanism of Injury, Injuries, Vital Signs, Treatment (MIVT) and ETA.
- List in the EMS Run Report which of the State Trauma Triage Criteria was met by the patient.

**Trauma Center/Facility Capabilities**

- Level I and II Trauma Centers can care for the same trauma patients.
- Level III Trauma Centers offer services, based on individual hospital resources that provide for initial assessment, resuscitation, stabilization, and treatment for the trauma patient.
- In areas of the region where the Level III Trauma Center is the only verified trauma facility, (within 30 minutes ground transport time), this hospital may act as the primary receiving facility for the critically injured patient.
- In areas where the trauma patient is in close proximity to a Level III trauma center and a Level I or Level II trauma center is still within the 30 minute transport guidelines established in this document, the EMS Provider should exercise professional judgment as to whether the patient would benefit more from an immediate evaluation, stabilization treatment at the proximate Level III trauma center or from direct transport by EMS Provider to the Level I or Level II trauma center.
- Regional Trauma Centers
    - Level I Miami Valley Hospital Fax # 937-208-2521
    - Level II Children's Medical Center Fax # 937-641-3131
    - Level III Greene Memorial Hospital N/A Helicopter will take trauma Pt. to Level I or II.
    - Level III Atrium Medical Center N/A Helicopter will take trauma Pt. to Level I or II
- In areas of the region where there are no verified Trauma Centers (within 30 minutes ground transport time), the acute care hospital may act as the primary receiving facility for the critically injured trauma patients. EMS Provider may arrange for air medical transport from the scene.
- If a pediatric patient meets the trauma triage guidelines, then they are taken to a pediatric trauma center. If transportation time is > 30 minutes to a pediatric trauma center, then transport to the nearest acute care hospital for stabilization and transfer. EMS Provider may arrange for air medical transport from the scene.
- All pregnant trauma patients should be transported to the Nearest Adult Trauma Center, unless transport time > 30 minutes.

**Air Medical Transportation**

- Pre-arrival notification of the receiving facility is essential.
- Prolonged delays at the scene waiting for air medical transport should be avoided.
- Traumatic cardiac arrest due to blunt trauma is **not** appropriate for air transport.
- In the rural environment, direct transfer of trauma patients by air medical transport may be appropriate and should be encouraged.

**Exceptions to Triage and Transportation Guidelines**

- It is medically necessary to transport the victim to another hospital for initial assessment and stabilization before transfer to an adult or pediatric trauma center.
- It is unsafe or medically inappropriate to transport the victim directly to an adult or pediatric trauma center due to adverse weather or ground conditions or excessive transport time.

- Transporting the victim to an adult or pediatric trauma center would cause a shortage of local emergency medical services resources.
- No appropriate trauma center is able to receive and provide trauma care to the victim without undue delay.
- Before transport of a patient begins, the patient requests to be taken to a particular hospital that is not a trauma center or, if the patient is less than 18 years of age or is not able to communicate, and such a request is made by an adult member of the patient's family or legal representative of the patient.

**Pre-Hospital Field Triage**

- Patients to be taken to nearest hospital:
  - Unstable airway
  - Blunt trauma arrest, no pulse or respirations
- All pregnant trauma patients should be transported to the Nearest Adult Trauma Center, unless transport time >30 minutes.
- Drowning, near drowning, strangulation and asphyxia are considered trauma and should be transported to a trauma center.

**Geriatric Trauma Criteria**

**G** Patients 70 years of age or older will be triaged for evaluation in a trauma center for:
**G** GCS < 15 with suspected traumatic brain injury
**G** Systolic BP < 100 mm hg
**G** Falls with evidence of traumatic brain injury (even from a standing position)
**G** Pedestrians struck by motor vehicles
**G** Known or suspected proximal long (femur/humerus) bone fracture sustained in MVA
**G** Multiple body regions injured

**Additionally special consideration should be given to the geriatric trauma patient to be evaluated at a trauma center if they have diabetes, cardiac disease, clotting disorders (including anticoagulants i.e. Heparin, Coumadin, Plavix), immunosuppressive disorder or requiring dialysis**

**Anatomy of Injury**

- All penetrating trauma to head, neck, torso, and extremities proximal to elbow and knee
- Abdominal injury with tenderness, distention, or seat belt sign
- Chest injury: Flail chest and/or tension pneumothorax
- Two or more proximal long bone fractures

**G** One proximal long bone fracture in MVC only *(Geriatric Trauma*)

- Evidence of pelvic fracture (exception: isolated hip fracture)
- Spinal cord injury with signs and symptoms of paralysis
- Burns greater than 10% Total BSA or other significant burns involving the face, feet, hands, genitals or airway

P Burns greater than 5% Total BSA or other significant burns involving the face, feet, hands, genitals or airway

- Amputation proximal to wrist and/or ankle
- Evidence of serious injury of 2 or more body systems
- Crush injury to head, neck, torso, or extremities proximal to knee or elbow

| YES =Transport to Trauma Center | NO – Assess Physiologic |
|---|---|
| Alert Trauma Team | |

**Physiological Adult**

- **Glasgow Coma Scale (GCS) less than or equal to 13**, loss of consciousness at any time greater than five minutes or alteration in level of consciousness with evidence of head injury at time of exam or thereafter, or fails to localize pain.
- **Respirations < 10 or >29** or intubation or relief tension pneumothorax
- **Pulse >120** in combination with any other physiologic criteria
- **SBP < 90** or absent radial pulse with carotid pulse present

| YES = Transport to Trauma Center | NO = Evaluate Mechanism of Injury if high energy impact |
|---|---|
| Alert Trauma Team | |

**Physiological Pediatric**

- **Glasgow Coma Scale (GCS) less than or equal to 13,** loss of consciousness at any time greater than five minutes or alteration in level of consciousness with evidence of head injury at time of exam or thereafter, or fails to localize pain.
- **Evidence of poor perfusion** (i.e., weak distal pulse, pallor, cyanosis, delayed capillary refill, tachycardia
- **Evidence of respiratory distress or failure** (i.e., stridor, grunting, retractions, cyanosis, nasal flaring, hoarseness or difficulty speaking

| YES = Transport to Pediatric Trauma Center | NO = Evaluate Mechanism of Injury if high energy impact |
|---|---|
| Alert Trauma Team | |

**Physiological Geriatric**

- G **Glasgow Coma Scale (GCS) < 15**, with evidence of Traumatic Brain Injury.
- **Glasgow Coma Scale (GCS) ≤ 13**, loss of consciousness at any time greater than five minutes or alteration in level of consciousness with evidence of head injury at time of exam or thereafter, or fails to localize pain.
- G **Respirations < 10 or >29** or intubation or relief tension pneumothorax
- G **Pulse >120** in combination with any other physiologic criteria
- G **SBP < 100** or absent radial pulse with carotid pulse present

| YES = Transport to Trauma Center | NO = Evaluate Mechanism of Injury |
|---|---|
| Alert Trauma Team | |

**Mechanism of Injury Geriatric**

- G Pedestrian thrown or run over

| YES = Transport to Trauma Center | NO = Evaluate other Mechanism of Injury |
|---|---|
| Alert Trauma Team | |

**Mechanism of Injury**

- Auto-pedestrian/auto-bicycle injury with significant (> 5 mph) impact
- Death in same passenger compartment
- Ejection from motor vehicle
- Extrication time > 20 minutes
- Falls > 20 feet

P Falls greater than 3 x child's height

- High Speed Auto Crash
    - Initial speed > 40 mph
    - Intrusion into passenger compartment > 12 inches
    - Major auto deformity > 20 inches
- Open motor vehicle crash > 20 mph or with separation of rider from vehicle
- Pedestrian thrown or run over (Geriatric see note above)
- Unrestrained rollover

| YES = Consider Trauma Center | NO = Check Special Situations |
|---|---|
| May consult with Medical Control Physician if needed | |

**Special Situations**

- Pre-existing cardiac and/or respiratory disease
- Insulin dependent diabetes, cirrhosis, morbid obesity, seizure
- Patient with bleeding disorder or on anticoagulants
- Immuno-suppressed patients (renal dialysis, transplant, cancer, HIV)
- All pregnant trauma patients should go to the Nearest Adult Trauma Center, if within 30 minutes transport time.

P Congenital disorders

| YES = Consider Trauma Center | NO = To Local Hospital |
|---|---|
| May consult with Medical Control Physician if needed | |

# Ohio Prehospital Trauma Triage Decision Tree*

Measure vital signs and level of consciousness

**Pediatric**
GCS <=13
Failure to localize pain
↓ing level of consciousness
Loss of consciousness >5 mins
Poor perfusion
Resp distress/failure

**Adult**
GCS <=13
Failure to localize pain
↓ing level of consciousness
Loss of consciousness >5 mins
Sys B/P <90
Pulse >120 w/shock
Resp <10 or >29
Tension PTX
Needs intubation

**Geriatric**
GCS <=13
Failure to localize pain
↓ing level of consciousness
Loss of consciousness >5 mins
Sys B/P <100
Pulse >120 w/shock
Resp <10 or >29
Tension PTX
Needs intubation
GCS <15 w/TBI

Yes

No → **Assess anatomy of injury**

**All Ages**
Penetrating inj to head/neck/torso
Crush inj of head/neck/torso
Flail chest
Abd tenderness/distention/seatbelt sign
Pelvic fx
Spinal cord inj
Penetrating inj proximal to knee/elbow w/neurovasc compromise
Amputation proximal to wrist/ankle
Crush of arm/leg
2 humerus/femur fxs
Arm/leg inj w/ neurovasc compromise
2º/3º burns >10% TBSA
Sig burns of face/feet/hands/genitals/airway

**Geriatric only**
MVC w/ 1 humerus/femur fx
Inj of 2 or more body regions

Yes

**Transport to a trauma center**

No → **Assess cause of injury**

**Geriatric only**
Pedestrian struck
Fall w/ TBI

Yes

No

**Consider special circumstances****
These may include:
Falls >20' (10' or 2-3 x body ht. for peds)
Motorcycle crash >20mph
High-risk auto crash:
- Ejection
- Death in same compartment
- Vehicle telemetry data shows high risk of injury

Auto vs. pedestrian/bicycle: thrown, run over, >20mph
Co-morbid conditions:
- Pregnant
- Bleeding disorder or anticoagulants
- Dialysis
- Diabetes
- Immune compromised

Yes → **Contact Medical Control & consider transport to a trauma center**

No → **Transport per protocol**

**Reminder:** Drowning, near-drowning, strangulation and asphyxia are considered trauma and should be transported to a trauma center.

* These criteria were developed for use by EMS personnel in the prehospital setting. They are not intended for use in determining candidates for interfacility transfer (secondary triage).

** Special circumstances are additional factors to be considered and should never be the sole reason for triaging a patient to a trauma center.

***When in doubt, transport to a trauma center!***

## Multiple Trauma

Patients meeting criteria for transport to a Trauma Center are considered "Load and Go".

- Place the patient in correct position to maintain the airway.
- Open pneumothorax: cover with an occlusive dressing, tape three sides down.
- Tension pneumothorax:
  - Lift one side of any occlusive dressing;
  - Use caution not to confuse right mainstem intubation for a pneumothorax.
  - Perform needle decompression if indicated
- If patient in arrest has potential chest trauma, perform bilateral relief of tension pneumothorax.
- Flail chest: immobilize with a bulky dressing or towels taped to the chest.
- Contact Medical Control and advise of patient condition with MIVT and ETA, and need for Trauma Team.
- For pregnant patient in arrest consider need for manual uterine displacement and perform chest compressions slightly higher on the sternum than normal.

## Head Injury

- Evaluate patient condition:
  - Level of Consciousness
  - Pupillary size and reaction
  - Glasgow Coma Scale
- Ventilate at 20 BPM when the following signs of cerebral herniation are present:

P Ventilate at a rate of ten faster than normal respiratory rate when the following signs of cerebral herniation are present:

- Blown or unequal pupil(s), bradycardia, posturing, and decreased mental status.
- {Ventilate to maintain $EtCO_2$ readings of 30 mmHg (30 torr)}.

**GLASGOW COMA SCALE**

| | | |
|---|---|---|
| **EYES** | **SPONTANEOUSLY** | **4** |
| | **TO VERBAL COMMAND** | **3** |
| | **TO PAIN** | **2** |
| | **NO RESPONSE** | **1** |
| | | |
| **VERBAL** | **ORIENTED & CONVERSES** | **5** |
| | **DISORIENTED & CONVERSES** | **4** |
| | **INAPPROPRIATE WORDS** | **3** |
| | **INCOMPREHENSIBLE SOUNDS** | **2** |
| | **NO RESPONSE** | **1** |
| | | |
| **MOTOR** | **OBEYS VERBAL COMMAND** | **6** |
| | **PURPOSEFUL MOVEMENT TO PAIN** | **5** |
| | **WITHDRAWAL** | **4** |
| | **FLEXION** | **3** |
| | **EXTENSION** | **2** |
| | **NO RESPONSE** | **1** |

## PEDIATRIC GLASGOW COMA SCALE

| | < 2 Years Old | | > 2 Years Old | |
|---|---|---|---|---|
| Eyes | SPONTANEOUSLY | 4 | SPONTANEOUSLY | 4 |
| | TO VOICE | 3 | TO VOICE | 3 |
| | TO PAIN | 2 | TO PAIN | 2 |
| | NO RESPONSE | 1 | NO RESPONSE | 1 |
| | | | | |
| Verbal | COOS, BABBLES | 5 | ORIENTED | 5 |
| | IRRITABLE CRY, CONSOLABLE | 4 | CONFUSED | 4 |
| | CRIES TO PAIN | 3 | INAPPROPRIATE WORDS | 3 |
| | MOANS TO PAIN | 2 | GRUNTS, GARBLED SPEECH | 2 |
| | NO RESPONSE | 1 | NO RESPONSE | 1 |
| | | | | |
| Motor | NORMAL MOVEMENTS | 6 | OBEYS COMMANDS | 6 |
| | WITHDRAWS TO TOUCH | 5 | LOCALIZES PAIN | 5 |
| | WITHDRAWS TO PAIN | 4 | WITHDRAWS TO PAIN | 4 |
| | FLEXION (DECORTICATE) | 3 | FLEXION (DECORTICATE) | 3 |
| | EXTENSION (DECEREBRATE) | 2 | EXTENSION (DECEREBRATE) | 2 |
| | NO RESPONSE | 1 | NO RESPONSE | 1 |

Maintain good ventilation at rate of about one breath every 5-6 seconds, with high flow Oxygen. Prophylactic hyperventilation for head injury is not recommended. Cerebral herniation syndrome is the only situation in which hyperventilation (rate of 20 per minute; pediatric rate of 10 faster than the normal rate) is indicated.

An increase in the level of $CO_2$ (hypoventilation) promotes cerebral vasodilation and increased swelling, while lowering the level of $CO_2$ (hyperventilation) promotes cerebral vasoconstriction and cerebral ischemia. Hyperventilation causes a significant decrease in cerebral perfusion from vasoconstriction, which results in cerebral hypoxia. Thus, both hyperventilation and hypoventilation cause cerebral hypoxia and increase mortality.

The one time you may hyperventilate is cerebral herniation syndrome. In cerebral herniation, there is a sudden rise in intracranial pressure. Portions of the brain may be forced downward, applying great pressure on the brainstem. This is a life-threatening situation characterized by a decreased LOC that rapidly progresses to coma, dilation of the pupil and an outward-downward deviation of the eye on the side of the injury, paralysis of the arm and leg on the side opposite the injury, and/or decerebrate posturing. When this is occurring, the vital signs frequently reveal increased blood pressure and bradycardia. The patient may soon cease all movement, stop breathing, and die. If these signs are developing in a head injury patient, cerebral herniation is imminent and aggressive therapy is needed. Hyperventilation will decrease intracranial pressure (ICP). In this situation, the danger of immediate herniation outweighs the risk of ischemia.

### Extremity Fractures, Dislocations, Sprains

- Assess pulse, motor and sensation before/after splinting and during transport.
- For open fractures, control bleeding with direct pressure and cover with dry, sterile dressing.
- Apply appropriate splinting device.
- To reduce swelling, elevate extremity and {apply ice}.
- Consider **Morphine, up to 5 mg, slow IV over 2 minutes** based on patient weight, provided SBP>100.
    - If unable to obtain IV, give **Morphine 5 mg SQ**.
- May repeat **Morphine**, **up to 5 mg, slow IV over 2 minutes,** based on patient weight, provided SBP > 100.
- Repeat dose of **SQ Morphine 5 mg** (repeat no sooner than 30 minutes) is indicated only if transport time > 30 minutes.

P Consider **Morphine 0.1 mg/kg slow IV over** 2 minutes. (Max Dose 5 mg).

- If unable to obtain IV, **give Morphine 0.1 mg/kg SQ.**
- Not to be administered to anyone < 2 year of age.

P ♦May repeat **Morphine 0.1 mg/kg, slow IV** over 2 minutes.
P ♦Repeat dose of **SQ Morphine 0.1 mg/kg** (Max dose 5 mg) (repeat no sooner than 30 minutes) is indicated when transport is greater than 30 minutes.

**Good Splinting Practices:**

- Document distal sensation and circulation pre & post splinting, and pre & post spinal immobilization.
- If the extremity is severely angulated and pulses are absent, you should apply gentle traction in an attempt to straighten it. If resistance is encountered, splint the extremity in the angulated position. When you are attempting to straighten an extremity, it is very important to be honest with yourself with regard to resistance. It takes very little force to lacerate the wall of a vessel or to interrupt the blood supply to a large nerve.
- Open wounds should be covered with a sterile dressing before you apply the splint.
- Apply a well-padded splint to immobilize above and below the injury.
- Do not attempt to push bone ends back under the skin. If you apply traction and the bone end retracts back into the wound, do not increase the amount of traction. Bone ends should be padded before pneumatic splints are applied. Keep bone ends moist to promote healing.
- If in doubt, splint a possible injury.

*Note: The patient who requires a load and go approach can be adequately immobilized by careful packaging on the long spine board. Do additional splinting en route to the hospital as time and the patient's condition permits.*

**Drowning and Near Drowning**

- Consider spinal immobilization.
- Consider hypothermia.
- Establish vascular access.
- Evaluate neurological status.
- Near drowning patients should be transported to a trauma center.

**Hypothermia**

- Move patient to warm environment, remove all wet clothing, dry the patient, and cover with blankets.
- Avoid any rough movement that may cause cardiac dysrhythmias. It may be beneficial to immobilize the patient on the backboard.
- Assess neurological status.
- It may be necessary to assess pulse and respirations for up to 30-45 seconds to confirm arrest.
- Consider possibility of other medical conditions (i.e. overdose, hypoglycemia)
- Hypothermic patients should be transported to a trauma center.
- If patient arrests:
    - CPR continuously
    - If severe hypothermia (<86°F (30°C)) is strongly suspected, limit defibrillation attempts to 1 and withhold medications except on orders from Medical Control
    - If body temperature is >86°F (30°C), follow normal arrest protocols
    - Intubate and oxygenate the patient with {warmed and humidified} 100% **$O_2$**
    - Continue resuscitative efforts while in transit, even if there is no response

**Hypothermia without Arrest**

- Do not initiate CPR if there is any pulse present, no matter how slow.
- Rough handling and unnecessary stimulation may cause cardiac arrest.
- Minimize movement.
- Use the least invasive means possible to secure airway. Intubate if necessary, as gently as possible.
- Consider other medical conditions (i.e. overdose, hypoglycemia, CVA)
- Complete the following steps during transport:
    - Establish vascular access and consider {warmed} fluids

- Treat bradycardia only if hypotensive
- Hypothermia patients should be transported to a trauma center

## Frostbite

- Protect injured area(s). Remove clothing and jewelry from injured parts.
- Do not attempt to thaw injured part with local heat.
- Maintain core temperature.
- Severe frostbite injuries should be transported to a burn center.
- Consider vascular access and consider {warmed} fluids.
- For pain relief when the patient is conscious, alert, is not hypotensive, and is complaining of severe pain, consider **Morphine, up to 5 mg, slow IV over** 2 minutes, based on patient weight, provided SBP >100.
  - If unable to obtain IV, give **Morphine, 5 mg SQ**
- May repeat **Morphine, up to 5 mg, slow IV over** 2 minutes, based on patient weight, provided SBP >100.
- Repeat dose of **SQ Morphine 5 mg** (repeat no sooner than 30 minutes) is indicated when transport is greater than 30 minutes.

P For pain relief when the patient is conscious, alert, is not hypotensive, and is complaining of severe pain, consider **Morphine 0.1 mg/kg slow IV over** 2 minutes. (Max Dose 5 mg).
- If unable to obtain IV, give **Morphine 0.1 mg/kg SQ.**
- Not to be administered to anyone < 2 years of age.

P ♦May repeat **Morphine 0.1 mg/kg, slow IV over** 2 minutes.

P ♦Repeat dose of **SQ Morphine 0.1 mg/kg** (Max dose 5 mg) (repeat no sooner than 30 minutes) is indicated when transport is greater than 30 minutes.

## Burns / Smoke Inhalation

**General Considerations**

- Stop the burning and minimize contamination.
- Severe burns should be transported to a burn center unless ETA >30 minutes.
- Keep patient warm. Patients with extensive burns must be monitored for hypothermia.
- Superficial and partial thickness burns <10% may have wet dressings applied. Cover burn areas with clean, dry sheets or dressings after cooling burns < 10% first.
- Remove clothing and jewelry from injured parts. Do not remove items which have adhered to the skin.
- Inhalation injuries with unsecured airway should be transported to the nearest facility.
- Chemical burns are Haz-Mat situations and must be grossly decontaminated at the scene.
- BP may be taken over damaged tissue if no other site is accessible.

**Specific Care**

- Assess for respiratory distress, stridor, hoarseness, sooty sputum, singed eyebrows and nares, or burns of the face or airway.
- Apply cardiac monitor, especially if patient has been involved with a lightning strike or electrical burn.
- Determine type of burn and treat as follows:
  - Radiation burns:
    - Treat as thermal burns except when burn is contaminated with radioactive source. Then treat as Haz-Mat situation
    - Consider contacting Haz-Mat team for assistance in contamination cases
  - Inhalation Burns:
    - Provide {humidified} **$O_2$** with **Saline**.
    - If no humidifier is available, administer a **Saline Nebulizer 3 ml**. Repeat PRN.
    - Provide early endotracheal intubation as indicated. Do not wait for complete airway obstruction or respiratory arrest to intubate!
- {CO oximeter}

- **Conscious Patients where cyanide is a likely component of the smoke:**
  - ♦ Administer **Sodium Thiosulfate 50 ml of 25% solution (12.5 grams), slow IV over 2 minutes.**
  - P ♦ Administer **Sodium Thiosulfate**:
    - P 50 ml (12.5 g) if > 25kg, slow IV over 2 minutes
    - P If < 25kg then 1.65 ml/kg (412.5 mg/kg) of the 25% solution, not to exceed 50ml (12.5 grams), slow IV over 2 minutes
  - ♦ {OR (Adults Only) administer **Hydroxocobalamin (Cyanokit) 5grams (both vials), via slow IV infusion**, over 15 minutes. **DO NOT ADMINISTER** both Hydroxocobalamin and other Cyanide antidotes to the same patient in the field}
    - {Each vial must be administered separately, after diluting the powder with 100 ml of NS}
    - {NOTE: Hydroxocabalamin is incompatible with numerous drugs carried by EMS, including Diazepam. Whenever possible, administer Hydroxocabalamin through a separate IV line.}
    - ♦ {If patient is in critical condition, a second dose of **Hydroxocabalamin may be administered via slow IV infusion**, over 15 minutes}
  - It is critical to control any seizure activity, using **Diazepam** or **Midazolam**
- **Unconscious Smoke Inhalation Patients where cyanide is a likely component of the smoke:**
  - Provide 100% **$O_2$** by BVM, preferably via Endotracheal tube
  - CPR if indicated. In cases of cardiac arrest associated with cyanide poisoning, the cyanide antidotes must have a high priority. Only ABCs, defibrillation, intubation and Epinephrine should precede use of the **Cyanide Antidotes.**
  - Administer **Sodium Thiosulfate 50 ml of 25% solution (12.5 grams), slow IV** over 2 minutes
  - P ♦ Administer Sodium Thiosulfate:
    - P **50 ml (12.5 g) if > 25kg**, **slow IV** over 2 minutes
    - P **If < 25kg then 1.65 ml/kg (412.5 mg/kg) of the 25% solution, not to exceed 50ml (12.5 grams), slow IV** over 2 minutes
  - **NOTE: MCP order not needed for Sodium Thiosulfate when Adult or Pediatric patient is in cardiac arrest.**
  - ♦{OR (Adults Only) administer **Hydroxocobalamin (Cyanokit), 5 grams (both vials), via slow IV infusion**, over 15 minutes. DO NOT ADMINISTER both Hydroxocobalamin and other Cyanide antidotes to the same patient in the field}
    - {Each vial must be administered separately, after diluting the powder with 100 ml of NS}
    - {NOTE: Hydroxocabalamin is incompatible with numerous drugs carried by EMS, including Diazepam. Whenever possible, administer Hydroxocabalamin through a separate IV line.}
    - ♦ {If patient is not in arrest, but in critical condition, a second dose of **Hydroxocabalamin may be administered via slow IV infusion**, over 15 minutes}
  - It is critical to control any seizure activity, using **Diazepam** or **Midazolam**.
- In MCIs with suspected cyanide involvement:
  - ♦ Administer Sodium Thiosulfate using above adult or pediatric dose, slow IV over 2 minutes.
  - Control any seizure activity, using Diazepam or Midazolam
  - Contact **937-333-USAR** and request additional cyanide antidotes
- Consider Hyperbaric Oxygen Treatment for the following:
  - Underlying cardiovascular or symptoms such as chest pain or shortness of breath
  - > 60 years of age
  - Obvious neurological symptoms, such as any interval of unconsciousness, loss of time, inability to perform simple motor tasks, or loss of memory
  - Pregnancy

## Heat Exposure

**General Considerations**

- Geriatric patients, pediatric patients and patients with a history of spinal injury or diabetes mellitus are most likely to suffer heat-related illnesses. Other contributory factors may include heart medications, diuretics, cold medications and/or psychiatric medications.
- Heat exposure can occur either due to increased environmental temperatures, prolonged exercise, or a combination of both. Environments with temperatures above 90°F and humidity over 60% present the most risk.

**Specific Care**

- Move patient to a cool environment.
- Strip the patient of clothing, cool the patient, and apply water to the skin.
- Apply cold packs to underarms and groin area.
- If conscious and neither vomiting nor extremely nauseous provide oral fluids.
    - If hypotensive or mental status changes are present administer **NS 1000 ml IV**.
    - P If hypotensive or mental status changes are present administer **NS 20 ml/kg IV**. Titrate to maintain adequate perfusion.
- Be prepared for seizures.
- Consider other medical conditions (i.e. overdose, hypoglycemia, CVA) and treat accordingly.
- Hyperthermia patients should be transported to a trauma center.

## Carbon Monoxide (CO) Poisoning

- Provide high flow **$O_2$** to all suspected CO poisonings.
- Pulse Oximeter will give false readings and should not be utilized.
- {CO oximeter}
- Consider Hyperbaric Oxygen Treatment for the following:
    - Underlying cardiovascular or symptoms such as chest pain or shortness of breath
    - > 60 years of age
    - Obvious neurological symptoms, such as any interval of unconsciousness, loss of time, inability to perform simple motor tasks, or loss of memory
    - Smoke inhalation victims.
    - Pregnancy
- Contact Medical Control to discuss transport considerations.

## Eye Injuries

- If possible, contact lenses should be removed. Transport contacts with patient.
- Chemical Burns:
    - Irrigate immediately with **NS** or water for a minimum of 30 minutes or until patient transport is completed
    - Determine chemical involved. Bring MSDS, if available
- Major Eye Trauma:
    - Do not irrigate or use Tetracaine if penetrating trauma
    - Cover injured eye. Do not use a pressure or absorbent dressing on or near any eye that may have ruptured, or have any penetrating trauma
    - Cover both eyes to limit movement
    - Transport with head elevated at least 30°.
- Prior to irrigation with **NS** or for significant eye pain, **Tetracaine 2 drops** in affected eye(s).
- {Morgan Lens} or nasal cannula and IV tubing for irrigation.

## {Spinal Injury Clearance}

Spinal injury clearance may be utilized for events minor in nature when authorized by the Medical Director and the patient is 16 or over. It is critical that each step be evaluated in sequence, since the steps proceed from the least to the greatest risk for the patient. It is just as critical that the patient be manually immobilized until the evaluation is complete.

1. If patient unconscious with potential mechanism of injury: Immobilize.
2. If patient not alert, is disoriented, or has GCS < 15: Immobilize.
3. If patient had loss of consciousness: Immobilize.
4. If suspicion of ETOH or drug intoxication: Immobilize.
5. If possible acute stress reaction: Immobilize.
6. If other painful or distracting injury: Immobilize.
7. If cervical pain or other spinal column pain (patient complaint) is present: Immobilize.
8. If neurological deficit (motor or sensory): Immobilize.
9. If cervical tenderness (on palpitation) or deformity: Immobilize.
10. If pain with cervical motion: Immobilize.

If none of the above is present, personnel may opt to transport the patient without spinal immobilization. In any case where there is the slightest doubt about the possible need for spinal immobilization, the patient is to be fully and effectively immobilized.

All of the above items must be documented, and the EMS agency must have a mechanism in place for Quality Improvement monitoring of each run where this procedure is employed.

## START Triage System (MCI)

Use the **S**imple **T**riage **A**nd **R**apid **Treatment** (START) method of triage to assess a large number of victims rapidly. It can be used easily and effectively by all EMS personnel.

**Procedure**

- Initial Triage
  - Utilize {Triage Ribbons [color-coded strips]}. One should be tied to an upper extremity in a VISIBLE location (wrist if possible, preferably on the right).
    - RED – Immediate
    - YELLOW – Delayed
    - GREEN – Ambulatory (minor)
    - BLACK – Deceased (non-salvageable)
  - If borderline decisions are encountered, always triage to the most urgent priority (i.e., GREEN/YELLOW patient, tag YELLOW). Move as quickly as possible.
- Independent decisions should be made for each victim. Do not base triage decisions on the perception that too many REDs, not enough GREENs, etc.
- Secondary Triage
  - Will be performed on all victims in the Treatment Area.
  - Utilize the Triage Tags (METTAGs, START tags, SMART tags, etc.) and attempt to assess for and complete all information required on the tag. Affix the tag to the victim and remove ribbon. This is done after patients enter the Treatment Area, not at the initial triage site!
- The Triage priority determined in the Treatment Area should be the priority used for transport.
- Locate and remove all of the walking wounded into one location away from the incident, if possible. Assign someone to keep them together (i.e., PD, FD, or initially a bystander) and notify COMMAND of their location. *Do not forget these victims.* Someone should re-triage them as soon as possible.
- Begin assessing all non-ambulatory victims where they lie, if possible. Each victim should be triaged in 60 seconds or less, preferably much less.

- Assess **RESPIRATIONS**:
  - If respiratory rate is 30/min. or less, go to PERFUSION assessment
  - If respiratory rate is > 30/min., tag RED
  - If victim is not breathing, open airway, remove obstructions, if seen and assess for above
  - If victim is still not breathing, tag BLACK
- Assess **PERFUSION**:
  - Performed by palpating a radial pulse or assessing capillary refill (CR) time
  - If radial pulse is present or CR is two seconds or less, go to MENTAL STATUS assessment
  - No radial pulse or CR is > two seconds, tag RED

- Assess **MENTAL STATUS**:
  - Assess the victim's ability to follow simple commands and their orientation to time, place and person
  - If the victim follows commands and is oriented x3, tag GREEN. NOTE: Depending on injuries (i.e., burns, fractures, bleeding), it may be necessary to tag YELLOW
  - If the victim does not follow commands, is unconscious, or is disoriented, tag RED

**Special Considerations**

- Only correction of life-threatening problems (i.e., airway obstruction or severe hemorrhage) should be managed during triage.
- To help speed the process, consider utilizing colored (Red, Yellow, Green, Black) ribbons to initially mark patient categories. Triage Tags are then attached and filled out once the patient reaches the Treatment Area.
- When using Triage Tags, if the patient's condition or the triage priority changes, the bottom portion of the tag should be removed, leaving only the injury information. Add a new tag to identify the new triage priority, and if time permits, the reason for the change.

## JumpSTART Triage for (MCIs)

**Introduction**

P Use the Jump **S**imple **T**riage **A**nd **R**apid **T**reatment (START) method of triage to assess a large number of pediatric victims rapidly. It is based on the START principles with considerations for pediatric response to trauma injury. It can be used effectively by all EMS personnel. However, there are limitations to JumpSTART

**Procedure**

P Initial Triage (Using the JumpSTART Method).
  - Utilize {Triage Ribbons [color-coded strips]}. One should be tied to an upper extremity in a VISIBLE location (wrist if possible, preferably on the right).
    - RED – Immediate
    - YELLOW – Delayed
    - GREEN – Ambulatory (minor)
    - BLACK – Deceased (non-salvageable)

P If borderline decisions are encountered, always triage to the most urgent priority (i.e., GREEN/YELLOW patient, tag YELLOW). Move as quickly as possible.

P Secondary Triage
  - Will be performed on all victims in the Treatment Area.
  - Utilize the Triage Tags (METTAGs or START tags) and attempt to assess for and complete all information required on the tag (as time permits). Affix the tag to the victim and remove ribbon. This is done after patients enter the Treatment Area, not at the initial triage site!
  - The Triage priority determined **in the Treatment Area** should be the priority used for transport.

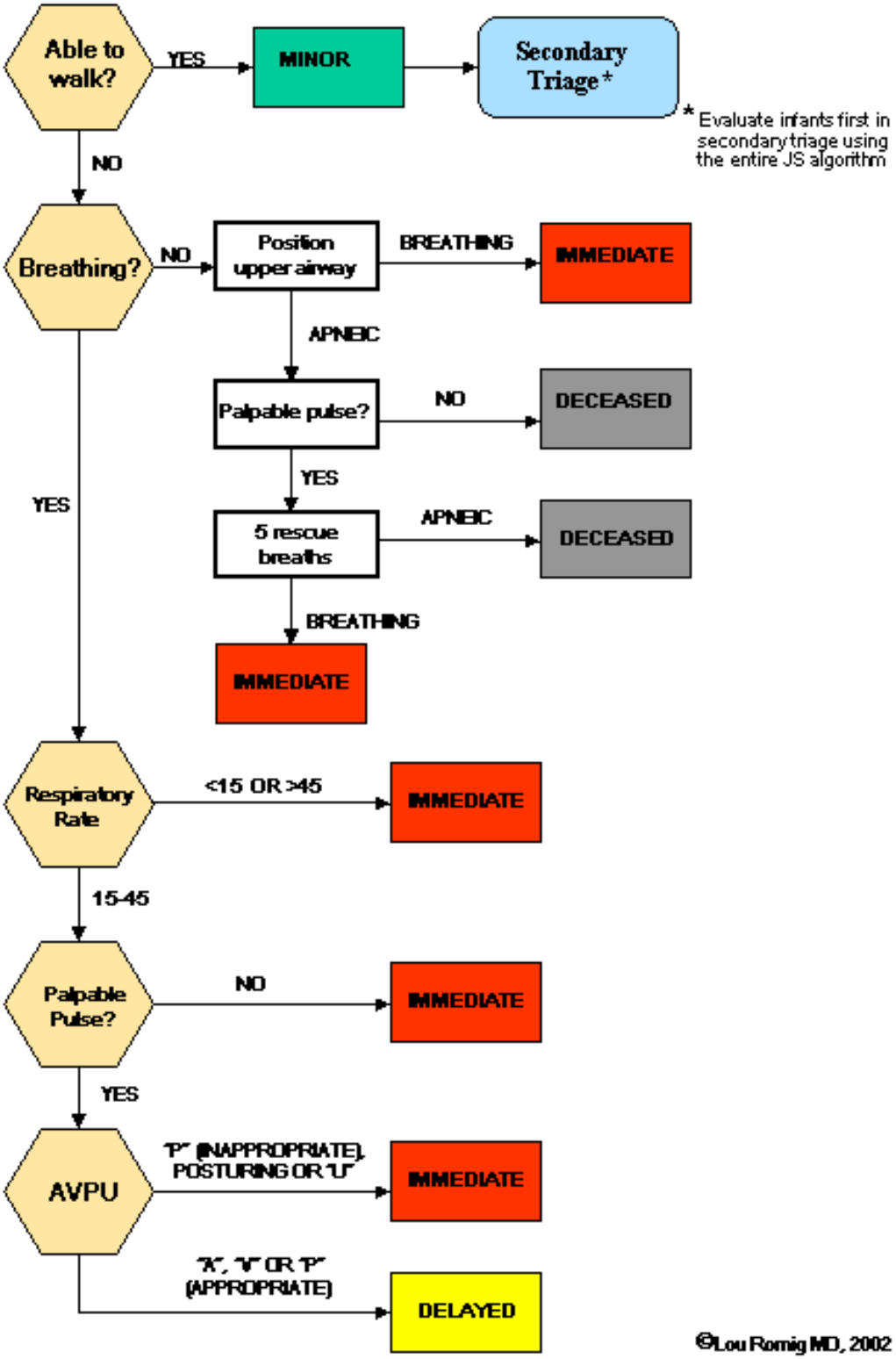
P JumpSTART
  - Locate and remove all of the walking wounded into one location away from the incident, if possible. Assign someone to keep them together (i.e., PD, FD, or initially a bystander) and notify COMMAND of their location. **Do not forget these victims.** Someone should re-triage them as soon as possible.

- Begin assessing all non-ambulatory victims where they lie, if possible. Each victim should be triaged in 60 seconds or less, preferably much less. NOTE: Remember the mnemonic **RPM (Respirations, Perfusion, and Mental Status)**
- Assess **RESPIRATIONS**:
  - If patient is breathing continue to assesses RESPIRATORY RATE, If not, position airway
  - If position corrects breathing, tag RED
  - If patient remains apneic, check pulse
  - If no pulse, tag BLACK
  - If pulse, Give 5 rescue breaths.
  - If rescue breaths return respirations, tag RED
  - If patient remains apneic, tag BLACK
  - Assess RESPIRATORY RATE
  - If rate is < 15 or > 45, tag RED
  - If rate is 15 to 45 assess pulse
- Assess PULSE (Perfusion)
  - If no pulse is palpable, tag RED
  - If pulse is present, assess AVPU (Mental Status)
- Assess AVPU
  - If patient is unconscious, posturing in response to pain, tag RED
  - If patient is alert, responds to verbal or pain without posturing, tag YELLOW

P Special Considerations

- The **first** assessment that produces a RED tag stops further assessment.
- Only correction of life-threatening problems (i.e., airway obstruction or severe hemorrhage) should be managed during triage.
- To help speed the process, Departments should consider utilizing colored (Red, Yellow, Green, Black) {Ribbons} to initially mark patient categories. Triage Tags are then attached and filled out once the patient reaches the Treatment Area.
- When using Triage Tags, if the patient's condition or the triage priority changes, the bottom portion of the tag should be removed, leaving only the injury information. Add a new tag to identify the new triage priority, and if time permits, the reason for the change.

# JumpSTART Pediatric MCI Triage©



## ALTERED STANDARDS OF CARE IN MASSIVE EVENTS

Some incidents are so large as to require extraordinary EMS procedures. Those scenarios are sometimes referred to as a Mass Casualty Events (MCEs), instead of Mass Casualty Incidents (MCIs). This Standing Order is at the awareness level, to introduce EMS procedures which could be utilized in very large emergency scenarios, or when the duration is extended.

"Altered Standards of Care" is a new term, but not a new concept. EMS uses altered standards whenever we triage. With concerns about pandemics, there is more planning for altered standards in settings from EMS to ICUs. Altered Standards of Care during an MCE may be partially issued by the State, and could result in a temporary expansion of the EMS scope of practice.

In some circumstances, EMS may be authorized to triage selected patients for transport to other healthcare facilities (e.g., urgent care centers). This could include an "Acute Care Center" (ACC) and/or a "Neighborhood Emergency Care Center" (NEHC), provided by Wright State University's National Center for Medical Readiness (NCMR), by contract with the Ohio Department of Health.

Dayton MMRS, like other MMRS cities, is required to have a plan called, "Forward Movement of Patients." The intent is to relieve the burden on local/regional hospitals by transporting patients, possibly directly from the scene, to more distant hospitals.

In the event of an MCE, especially one lasting days or longer, Greater Miami Valley EMS Council, with the approval of members of the Regional Physicians Advisory Board (RPAB), may promulgate "Just in Time" Standing Orders (JITSO). Those orders might include triage standards for transport to other healthcare facilities or forward patient movement, as well as other altered standards of care, possibly exceeding the standard scope of practice for EMS (with approval from Ohio Department of Public Safety).

## RESPIRATORY DISTRESS

- Evaluate breath sounds, and obtain {Pulse Oximeter and/or capnography} reading:
  - Clear: Treat cause (e.g. MI, pulmonary embolism, metabolic disturbance, and hyperventilation)
  - Wheezes: Treat cause (e.g. pulmonary edema, FBAO, asthma or allergic reaction)
  - Rales: Treat cause (e.g. pulmonary edema or pneumonia)
  - Diminished or absent:
    - Unilateral: Treat cause (e.g., pneumothorax, hemothorax, pneumonia, surgically removed lung)
    - Bilateral: Treat cause (e.g., respiratory failure, COPD or asthma)
- Cardiac monitor and {12-lead EKG}

### Pulmonary Edema

- Consider need for possible early endotracheal intubation
- Assess for and note cyanosis, clammy skin, *absence of fever*, coughing, wheezing, labored breathing, diaphoresis, pitting edema, rales in bilateral lower lung fields, tachypnea, apprehension, JVD, and inability to talk.
- If {CPAP} is available, its use is encouraged prior to the initiation of drug therapy.
- If patient has SBP > 100, **Nitroglycerin 0.4 mg SL up to 3, 1 every 5 minutes**. Maintain SBP >100.
- {Bi-PAP}.
- **Furosemide 80 mg slow IV over 2 minutes**. Maintain SBP >100.
- **Morphine, up to 5 mg, slow IV over 2 minutes.** Maintain SBP >100.
- May repeat **Morphine, up to 5 mg, slow IV over 2 minutes.** Maintain SBP >100.

*NOTE: It is important to differentiate between CHF with pulmonary edema and pneumonia when considering the administration of Furosemide. At times, pneumonia may look like CHF with Pulmonary Edema. However, the pneumonia patient is often dehydrated and has an elevated temperature. Not only will the patient not benefit from Furosemide, but a borderline dehydrated pneumonia patient may go into hypovolemic shock.*

## Asthma/Emphysema/COPD

- Consider **Albuterol 2.5 mg** and **Ipratropium 0.5 mg, nebulized** with **$O_2$** 8-12 LPM.
  - If an awake patient requires intubation, consider **Lidocaine** 80 mg {**IN** half dose per nostril} or added to above nebulizer, 2 mg/kg nebulized with 8-12 LPM **$O_2$**. Maximum dose is 80 mg.
- May repeat **Albuterol 2.5 mg nebulized X 2**.
- COPD: **{**CPAP or Bi-PAP}
- After intubation of an asthma patient, limit rate of ventilation to 8-10 BPM to avoid auto-PEEP and hypotension, provided that you can adequately oxygenate the patient at that rate.

P For the pediatric patient, limit ventilation rate to 10-15 BPM to avoid auto-PEEP and hypotension, provided you can adequately oxygenate the patient at that rate.

- If patient arrests, tension pneumothorax is a likely cause. Strongly consider bilateral needle decompression for relief of tension pneumothorax.
- For asthmatics in severe distress: **Epinephrine (1:1,000) 0.3 mg SQ or autoinjector**.
- ♦ May repeat **Epinephrine (1:1,000) 0.3 mg SQ or autoinjector.**

P For asthmatics in severe distress, **Epinephrine (1:1,000) 0.01 mg/kg < 30 kg or 0.3mg** ≥ 30 kg SQ.

P ♦ May repeat **Epinephrine (1:1,000) 0.01 mg/kg < 30 Kg or 0.3mg** ≥ 30 kg SQ**.**

## ALTERED LEVEL OF CONSCIOUSNESS: Diabetic or Unknown Cause

- If glucose <60, or there is strong suspicion of hypoglycemia despite glucometer readings
  - **$D_{50}$, 25 grams IV**.
  - P **$D_{50}$, 1 ml/kg IV for children over 25 kg**
  - P **$D_{25}$, 2 ml/kg for children under 25 kg or 1 ml/kg of $D_{50}$ dilute with equal volume of saline**.
  - P **For infants (< 1 year), $D_{25}$, 2 ml/kg diluted with equal volume of saline**.
- **Dextrose** may be repeated in ten minutes if blood sugar remains < 60.
- If unable to establish vascular access, **Glucagon 1 mg IM**.
- In a diabetic patient with an insulin pump and a glucose <60, disconnect patient from the pump or "suspend" the device if you are familiar with its operation.
- Maintain normothermia. Unconscious diabetics are often hypothermic.
- Consider patient restraint before administration of **Naloxone**.
- If respiration is impaired, or there is a high index of suspicion of narcotic overdose and patient does not respond to **$D_{50}$**, administer **Naloxone, up to 4 mg, IV**, or {**Naloxone 2 mg IN} or Naloxone 4 mg IM**, varying rate according to patient severity. Titrate to respiratory rate and depth.

P **Naloxone 0.1 mg/kg IV (Max Dose 2 mg)** varying rate according to patient severity. Titrate to respiratory rate and depth.

- As an alternative to IV **Naloxone**, **Naloxone 2 mg IN**, **or up to 4 mg IM** or other appropriate routes.

***Oral Glucose Administration**: Oral glucose is indicated for any awake but disoriented patient with BS <60 or strong suspicion of hypoglycemia despite blood sugar readings. Oral glucose may also be administered carefully under the tongue or between the gum and cheek of an unresponsive patient who must be placed in the lateral recumbent position to promote drainage of secretions away from the airway.*

## DIABETIC EMERGENCIES: Refusal of Treatment

- Patients 18 years of age or older, may be permitted to refuse. Follow these guidelines:
  - Repeat physical examination and vital signs. Patient must be A&O X 3
  - Warn the patient that there is a significant risk of going back into hypoglycemia, especially if on oral hypoglycemics
  - Advise the patient to eat something substantial immediately
  - Advise the patient to contact their family physician as soon as possible to minimize future episodes
  - Advise the patient to stay with someone, if possible
  - Follow normal patient refusal procedures

*Note: Ensure that the EMS Coordinator of the hospital that replaces your Drug Bag and Supplies receives a copy of the run sheet for his/her records.*

## ALLERGIC REACTION/ANAPHYLAXIS

- If severe allergic reaction, **Adult Epi-Pen or Epi 1:1,000 0.3 mg SQ**.

P **Epi-Pen Jr 0.15 mg for patients < 30 kg (< 66 pounds) or Epinephrine 1:1000, 0.01 mg/kg SQ**

- If applicable, apply {ice pack} and/or constricting band.
- If hypotensive, **NS IV to maintain SBP >100**.

P If hypotensive, **NS IV 20 ml/kg to maintain adequate perfusion**.

- If patient deteriorating or unresponsive, consider early intubation, possibly with smaller than normal ETT.
- If patient is wheezing: **Albuterol 2.5 mg and Ipratropium 0.5 mg in nebulizer with $O_2$ flowing at 8-12 LPM**.
- **Lidocaine 80 mg** may also be placed in the nebulizer with the other two medications prior to intubating awake patients.

P **Lidocaine 2 mg/Kg (Max dose 80 mg)** may also be placed in the nebulizer with the other two medications prior to intubating awake patients.

- **Albuterol** may be repeated X 2.
- If patient is intubated, **Albuterol 2.5 mg** by nebulizer into the endotracheal tube. If **Ipratropium** not given before intubation, add to first **Albuterol**.
- **Diphenhydramine 50 mg IM/IV**.

P **Diphenhydramine 1 mg/kg IM/IV (Max Dose 50 mg)**.

- If patient remains hypotensive after IV fluid, **Epinephrine (1:10,000) 0.5 mg, slow IV.**
- For patients unresponsive to **Epinephrine**, **Glucagon 2 mg IV/IM**.
- Adults ONLY: If cardiac arrest, **Epinephrine (1:10,000) 3 mg IV**.

## SEIZURES

- BVM and nasopharyngeal airway *during* seizure as needed.
- If seizing, **Diazepam 5 mg slow IV over 2 minutes, or Midazolam 10 mg, IN**.
- Persistant seizing, repeat **Diazepam 5 mg slow IV over 2 minutes, or Midazolam {10 mg IN (5 mg in each nostril)} or 4 mg IM.**
- If no vascular access or {MAD}, **Diazepam 10 mg PR**..

P If seizing, **Diazepam 0.2 mg/kg (Max Dose 5 mg) slow IV over 2 minutes, or Midazolam 0.2 mg/kg (Max Dose 4 mg) IN**

P If still seizing, repeat **Diazepam 0.2 mg/kg slow IV over 2 minutes, or Midazolam 0.2 mg/kg IN**.

P If no vascular access or {MAD}, **Diazepam 0.5 mg/kg PR (Max Dose 10 mg)**.

- If glucose <60, or there is strong suspicion of hypoglycemia despite glucometer readings
  - **$D_{50}$, 25 grams IV**.

  P **$D_{50}$, 1 ml/kg IV for children over 25 kg**

  P **$D_{25}$, 2 ml/kg for children under 25 kg or 1 ml/kg of $D_{50}$ dilute with equal volume of saline**.

  P **For infants (< 1 year), $D_{25}$, 2 ml/kg diluted with equal volume of saline**.

  - If unable to establish vascular access, **Glucagon 1 mg IM.**
- **Dextrose** may be repeated in ten minutes if blood sugar remains < 60.
- If unable to establish vascular access, **Glucagon 1 mg IM**.
- In a diabetic patient with an insulin pump and a glucose <60, disconnect patient from the pump or "suspend" the device if you are familiar with its operation
- Maintain normothermia

*When obtaining history be sure to include the following:*

- *Description of seizures, areas of body involved, and duration*
- *Other known medical history; i.e. head injury, diabetes, drugs, alcohol, stroke, heart disease.*

## EXTRAPYRAMIDAL (DYSTONIC) REACTIONS

- A patient that is currently on drug therapy of a phenothiazine (i.e. Phenergan, Thorazione or Compazine) or a butyrophenone (Haldol, Droperidol) and exhibiting signs of acute muscle spasm or motor restlessness may be suffering from an Extrapyramidal Reaction.
- Physical examination findings may include any of the following:
  - Oculogyric crisis (spasmodic deviation of eyes in all directions generally fixed upward)
  - Buccolingual crisis (protrusion of tongue with slurred speech)
  - Trismus (closing of the jaw due to spasm of the muscles also called lockjaw)
  - Difficulty in speaking
  - Facial grimacing
  - Torticollis (stiff neck causing deviation of the head with the chin pointing to the other side) crisis
  - Opisthotonus (extreme back arching)
  - Tortipelvic crisis - Typically involves hip, pelvis, and abdominal wall muscles, causes difficulty with walking
  - Mental status is unaffected.
  - Vital signs are usually normal.
  - Remaining physical examination findings are normal.
- Initiate IV of NS to maintain adequate BP.
- If glucose <60, or there is strong suspicion of hypoglycemia despite glucometer readings
  - **$D_{50}$, 25 grams IV**.
  - P **$D_{50}$, 1 ml/kg IV for children over 25 kg**
  - P **$D_{25}$, 2 ml/kg for children under 25 kg or 1 ml/kg of $D_{50}$ dilute with equal volume of saline**.
  - P **For infants (< 1 year), $D_{25}$, 2 ml/kg diluted with equal volume of saline**.
  - If unable to establish vascular access, **Glucagon 1 mg IM.**
- **Dextrose** may be repeated in ten minutes if blood sugar remains < 60.
- ♦ Consider **Diphenhydramine 50 mg IV or IM**
- P ♦ **Diphenhydramine 1 mg/kg IV or IM (Max dose 50 mg)**

## POISONING/OVERDOSE

**Narcotic Overdose**

- Consider patient **restraint** before administration of **Naloxone**.
- **Naloxone, up to 4 mg IV**, varying rate according to patient severity.
- P **Naloxone**, 0.1 mg/kg (Max Dose 2 mg) IV, varying rate according to patient severity.
- If patient has a pulse, **Naloxone** should be administered *before* inserting an ETT
- As an alternative to IV **Naloxone**, **Naloxone 2 mg IN**.
- P As an alternative to IV Naloxone, Naloxone 0.1 mg/kg IN.
- If no arousal occurs after three minutes, establish an IV and administer IV **Naloxone.**
- If unable to establish an IV and no {MAD}, **Naloxone up to 4 mg IM.**

**Crack/Cocaine**

- If chest pain;
  - **Nitroglycerine 0.4 mg SL,** if SBP >100.
  - **Diazepam 5 mg slow IV over 2 minutes,** if SBP >100.

**Tricyclic Overdose:**

- ♦ **Sodium Bicarbonate 1 mEq/kg, slow IV over 2 minutes**.
- ♦ Repeat **Sodium Bicarbonate 0.5 mEq/kg, IV** for persistent QRS prolongation.

Tricyclic Antidepressant Examples:

- Amitriptyline (Elavil, Endep, Etrafon, Limbitrol)
- Nortriptyline (Pamelor, Aventyl)
- Amoxapine (Asendin)
- Clomipramine (Anafranil)
- Desipramine (Norpramine)

- Doxepin (Sinequan)
- Imipramine (Tofranil)
- Protriptyline (Vivactil)
- Trimipramine (Surmontil)

*Note: Overdose with tricyclic antidepressant medications may be evidenced by bradycardia, tachycardia, hypotension and prolongation of the QRS complex. Risk of rapid deterioration or sudden onset V. Fib is high.*

**Calcium Channel Blocker Overdose:**

- ♦ **Calcium Chloride, 1 gm slow IV over 2 minutes**
- P ♦ **Calcium Chloride 10% 0.2 ml (20 mg/kg) (Max Dose 500 mg) slow IV over 2 minutes.**
- ♦ **Glucagon, 1 mg IM or IV**

Calcium Channel Blocker Examples:

Amlodipine (Norvasc)
Diltiazem (Cardizem, Dilacos)
Felodipine (Plendil)
Isradipine (Dynacirc)
Nifedipine (Procardia, Adalat)
Verapamil (Calan, Isoptin, Verelan)

**Beta Blocker Overdose:**

- ♦ **Glucagon** 1 mg, IM or IV.

Beta Blocker Examples:

Acebutolol (Sectral)
Atenolol (Tenormin)
Carvedilol (Coreg)
Corzide, Inderide, Lopressor, HCT, Tenoretic, Timolide, Ziac
Labetalol (Normodyne, Trandate)
Metoprolol (Topral, Lopressor)
Nadolol (Corgard)
Pindolol (Viskin)
Propranolol (Inderal)
Sotalol (Betapace)
Timolol (Blocadren)

## HAZ-MAT

Important steps in field decontamination:

- Remove contaminated clothing.
- Thoroughly wash with {Dawn} dishwashing detergent, paying special attention to skin folds and other areas where simple irrigation may not remove it.
- Do not transport a patient until gross decontamination is completed.
- Obtain permission from hospital personnel before entering hospital with a potentially contaminated patient and/or crew.
- Consider decontamination of vehicle prior to leaving.

Field decontamination must be initiated. An example of the often overlooked importance of decon is a patient soaked in diesel fuel. Diesel fuel can cause chemical burns when left in contact with the skin.

Contact receiving hospital immediately to allow for set up of decontamination equipment. If substance is determined, notify receiving facility as early as possible.

**Guidelines for Dealing with Exposure to Hazardous Drug**
**Hazardous Drug: Exposures and Spills**

- Hazardous drug situations include
  - Patients who have continuous IV chemotherapy at home
  - Patients who have just had IV chemotherapy at the clinic or hospital and their body fluids could have traces of hazardous drug for 48 hours
  - Patients taking oral chemotherapy drugs
- Potential routes of exposure include:
  - absorption through skin or mucous membranes
  - accidental injection by needle stick or contaminated sharps
  - inhalation of drug aerosols, dust, or droplets
  - ingestion through contaminated food, tobacco products, beverage, or other hand-to-mouth behavior
- PPE should be worn whenever there is a risk of hazardous drug being released into the environment. For EMS personnel, the situations might include:
  - Handling leakage from tubing, syringe, and connection sites
  - Disposing of hazardous drugs and items contaminated by hazardous drugs
  - Handling the body fluids of a patient who received hazardous drugs in the past 48 hours
  - Cleaning hazardous drug spills
  - Additional situations apply to healthcare workers who mix and administer hazardous drugs
- Guidelines for PPE:
  - Gloves: disposable, powder-free, latex or nitrile. Double gloves are recommended. Change gloves immediately after each use, if a tear, puncture, or drug spill occurs; or after 30 minutes of wear
  - Gowns: disposable, lint-free, low-permeability fabric. Solid front, long-sleeves, tight cuffs, back closure. Inner glove cuffs should be worn under the gown cuffs and the outer glove cuffs should extend over the gown cuffs
  - Respirators: Wear a NIOSH-approved respirator mask when cleaning hazardous drug spills. Surgical masks do not provide adequate protection
  - Eye and face protection: wear a face shield whenever there is a possibility of splashing
- Body Fluids – use universal (standard) precautions when handling the blood, emesis, or excreta of a patient who has received IV or oral chemotherapy within the previous 48 hours.
- Accidental skin exposure: Remove contaminated garments, place in leakproof plastic bag, and immediately wash contaminated skin with soap and water. Rinse thoroughly. Report to physician for examination and documentation.
- Accidental eye exposure: immediately flush eye with saline solution or water for at least 30 minutes or until patient transport is completed. Report to ED for examination and documentation.
- Contaminated Linen/Clothing – place linens in a plastic bag. Wash items twice in hot water, separately from other items. (Hospital linens are placed in a bag labeled “contaminated linen” and pre-washed before being added to other linen.)
- Spills, contaminated equipment: DO NOT touch the spill with bare hands. Post a sign or warn others to prevent spread of contamination and others from being exposed. Wipe up liquids with an absorbent pad or spill-control pillow. Clean the spill area from most contaminated to least contaminated three times, using a detergent solution followed by clean water. Rinse thoroughly.
- Disposal of hazardous drugs and materials contaminated with hazardous drugs - place items in a sealable, leakproof plastic bag or rigid cytoxic waste container marked with a brightly-colored label that cites the hazardous nature of the contents. Dispose of needles and syringes intact – DO NOT break or recap needles or crush syringes.
- Report and document spills as required (consider EPA, OSHA, and Regional/local Haz-Mat team if more than 5 ml)

Who should you call for more help? (The patient should have these phone numbers)

- the homecare agency that is supplying/monitoring the infusion
- the physician who ordered the infusion (usually a medical oncologist)
- ask for pharmacy support from a hospital, if necessary (there should be a label on the IV bag with the name of the drug and the dosage/concentration)
- Consult with the Regional Haz-Mat team (or local Haz-Mat team for areas outside the Dayton area)

**HAZ-MAT: Hydrofluoric Acid (HF)**

- Deaths have been reported after burns involving < 3% Body Surface Area. Assure safety of all personnel!
- Begin decon immediately, as soon as it can be accomplished without putting EMS personnel at risk! Strip the patient of any clothing, which may be contaminated.
- Irrigate the chemical burn with water as quickly as possible. When feasible, use **{Magnesium Sulfate solution (Epsom salt)}** as an additional irrigating solution for affected skin (not for eyes or mucous membranes). However, getting water on the burn is more urgent than the use of Epsom salt. DON'T DELAY IRRIGATION/DECON! Flush affected eyes and skin with copious amounts of water or **Normal Saline** for a minimum of 30 minutes or until patient transport is completed. If available, use **{Epsom salt solution}** on the skin for at least 30 minutes.
- If ingested, do not induce vomiting. Dilute with water or milk, and give **{3-4 ounces of magnesium-containing antacid** (i.e., **Maalox** or **Mylanta**)}.
- Intubate if unconscious or at *first sign* of pulmonary edema or respiratory distress.
- {12-Lead EKG} Monitor for prolonged QT interval, and cardiac arrest.
- Apply **{magnesium-containing antacid (Maalox or Mylanta)}** topically to burned areas. Omit topical treatment if industry has already applied topical agents.
- For pain relief consider **Morphine, up to 5 mg, slow IV over 2 minutes**, provided SBP > 100.
  - If unable to obtain IV, give **Morphine 5 mg SQ**, provided SBP > 100.
  - After five minutes, may consider repeating **Morphine IV**, provided SBP > 100.
  - Repeat dose of **Morphine 5 mg SQ** (repeat no sooner than 30 minutes) is indicated only if transport time is greater than 30 minutes, provided SBP > 100.
- ♦ If patient with HF exposure experiences tetany or cardiac arrest, administer 10 ml **Calcium Chloride 10%**, IV. Calcium Chloride 10% should be considered a first line drug in cardiac arrest associated with Hydrofluoric Acid. Only ABCs, defibrillation, intubation and Epinephrine or Vasopressin should precede its administration.
- ♦ If victim was exposed to high concentration HF (> 40%), discuss prophylactic 4 ml **Calcium Chloride 10%** (400 mg), slow IV (over 2 minutes) with Medical Control.

**HAZ-MAT: Cyanide**

In any case of known or strongly suspected cyanide intoxication, paramedics will utilize the following components of the **{Cyanide Kit}**.

- **Conscious Patients of Known or Strongly Suspected Cyanide Poisoning**:
  - ♦ {For patients of cyanide poisoning who are awake, administer one **Amyl Nitrite** pearl every ten minutes}
  - P **♦ {Limit exposure to Amyl Nitrite ampule for 15 seconds, followed by 15 seconds of rest, then repeat until next Cyanide Antidote can be administered}**
  - ♦ {If the patient's condition is deteriorating, administer **300 mg of Sodium Nitrite** (10 ml of 3% solution), ***slow*** IV over 2 minutes}
  - P Do not administer **Sodium Nitrite** to pediatric patients.
  - ♦ Administer **Sodium Thiosulfate 50 ml of 25% solution (12.5 grams), slow IV** over 2 minutes.
  - P **♦ Administer Sodium Thiosulfate:,**
    - P **50 ml (12.5 g) if > 25 kg, slow IV over 2 minutes**
    - P **If < 25 kg then 1.65 ml/kg (412.5 mg/kg) of the 25% solution, not to exceed 50 ml (12.5 grams), slow IV over 2 minutes**

- ♦ {OR (Adults Only) administer **Hydroxocobalamin (Cyanokit) 5grams (both vials), via slow IV infusion**, over 15 minutes. **DO NOT ADMINISTER** both Hydroxocobalamin and other Cyanide antidotes to the same patient in the field}
  - {Each vial must be administered separately, after diluting the powder with 100 ml of NS}
  - {NOTE: Hydroxocabalamin is incompatible with numerous drugs carried by EMS, including Diazepam. Whenever possible, administer Hydroxocabalamin through a separate IV line.}
  - ♦ {If patient is in critical condition, a second dose of **Hydroxocabalamin may be administered via slow IV infusion**, over 15 minutes}
- It is critical to control any seizure activity, using **Diazepam** or **Midazolam**

- **Unconscious Patients of Known or Strongly Suspected Cyanide Poisoning:**
  - Provide 100% **$O_2$** by BVM, preferably via Endotracheal tube
  - CPR if indicated. In cases of cardiac arrest associated with cyanide poisoning, the cyanide antidotes must have a high priority. Only ABCs, defibrillation, intubation, and Epinephrine should precede use of the **Cyanide Antidotes** as authorized by Medical Control
  - ♦ {While preparing to intubate, place one ampoule of **Amyl Nitrite** into a nebulizer after breaking the ampoule, and attach it to the BVM while ventilating}
  - P **♦ {Limit exposure to Amyl Nitrite ampule for 15 seconds, followed by 15 seconds of rest, then repeat until next Cyanide Antidote can be administered}**
  - ♦ {If patient is not responding to treatment, administer **300 mg** of **Sodium Nitrite** (10 ml of 3% solution), ***slow* IV** over 2 minutes. If possible establish two IV lines, one for standard code drugs, and one for cyanide antidotes.}
  - P Do not administer **Sodium Nitrite** to pediatric patients.
  - ♦ Administer **Sodium Thiosulfate 50 ml of 25% solution (12.5 grams), slow IV** over 2 minutes
  - P **♦ Administer Sodium Thiosulfate:,**
    - P **50 ml (12.5 g) if > 25 kg, slow IV over 2 minutes**
    - P **If < 25 kg then 1.65 ml/kg (412.5 mg/kg) of the 25% solution, not to exceed 50 ml (12.5 grams), slow IV over 2 minutes**
  - **NOTE: MCP order NOT needed for Sodium Thiosulfate when Adult or Pediatric patient is in cardiac arrest.**
  - ♦{OR (Adults Only) administer **Hydroxocobalamin (Cyanokit), 5 grams (both vials), via slow IV infusion**, over 15 minutes. DO NOT ADMINISTER both Hydroxocobalamin and other Cyanide antidotes to the same patient in the field}
    - {Each vial must be administered separately, after diluting the powder with 100 ml of NS}
    - {NOTE: Hydroxocabalamin is incompatible with numerous drugs carried by EMS, including Diazepam. Whenever possible, administer Hydroxocabalamin through a separate IV line.}
    - ♦ {If patient is not in arrest, but in critical condition, a second dose of **Hydroxocabalamin may be administered via slow IV infusion**, over 15 minutes}
  - It is critical to control any seizure activity, using **Diazepam** or **Midazolam**.
- **In MCIs with suspected cyanide poisoning**:
  - ♦ Administer **Sodium Thiosulfate** using above adult or pediatric dose, slow IV over 2 minutes.
  - Control any seizure activity, using **Diazepam** or **Midazolam**
  - Contact **937-333-USAR** and request additional cyanide antidotes

- ♦ When faced with any of the above scenarios, but you do not have all three components of the Cyanide Kit, or have insufficient numbers to provide to all patients with all three components, any one component (**Amyl Nitrite, Sodium Nitrite or Sodium Thiosulfate**) is better than none, and may be administered alone.
  - P The only exception is that **Sodium Nitrite** should **not** be used in pediatric patients.

## HAZ-MAT: Organophosphate or Nerve Gas Poisoning

- Treat any case of known or suspected organophosphate or carbamate (i.e., insecticides such as parathion or malathion); or nerve agent (i.e., Tabun, Sarin, Soman, VX, etc.) exposure as follows:
- Patients with severe poisoning may or may not be bradycardic.
- ♦ Administer 1 - 2 mg. **Atropine** every 3-5 minutes, as available until lungs are clear to auscultation. **Atropine** may be given IV or IM, or IM by **Mark I** auto-injector #1 (adults and children weighing over 90 pounds).

P ♦ **Atropine 0.02 mg/kg (Minimum dose 0.1 mg – Maximum dose 2.0 mg) every 3-5 minutes**, as available until lungs are clear to auscultation. **Atropine** may be given IV, IO or IM, or IM by auto-injector using the following doses. Hold in place for 10 seconds.

P Children weighing 40 - 90 pounds should be given 1.0 mg Atropine, or the 1.0 mg Atropen autoinjector.

P Children weighing less than 40 pounds should be given 0.5 mg Atropine, or the 0.5 mg Atropen autoinjector.

- In some cases, including all GMVEMSC Drug Bags, Mark I Kits have been replaced by "**DuoDotes**". **DuoDotes** have the same drugs as Mark I Kits, but administered through a single autoinjector.
- Treat seizures with **Diazepam, Midazolam**, or **Diazepam Autoinjector**.

- **In a Mass Casualty Incident, contact 866-599-LERP and request a CHEMPACK, and contact 937-333-USAR and request additional Nerve Agent Antidotes**

In the event of a large Mass Casualty Incident involving Cyanide or Nerve Agents, contact Medical Control, and request an "Antidote free" order, allowing you to treat all of the patients on the scene with the appropriate antidote. Calling for separate orders for each individual patient is utterly impractical. Multi-dose vials or Atropine have been added to the Drug Box. However, Squads must carry syringes and needles for administering the Atropine.

{Departments are authorized to stockpile large quantities of Atropine and supplies (syringes, needles, etc.), as well as 2-PAM, if desired on selected units. The stockpiles can also be in the form of auto-injectors, such as Mark I kits or DuoDotes.

## Administering the Nerve Agent Antidote Auto-Injector Kit (Mark I)

When first responder arrives on a scene potentially contaminated with nerve agents, s/he must don appropriate PPE. If symptoms of nerve agent exposure manifest:

1. Grasp the unit and position the green tip of the AtroPen on victim's outer thigh
2. Push firmly until auto-injector fires. Hold in place for 10 seconds to ensure Atropine has been properly delivered.
3. Remove 2-PAM. Grasp the unit and position the black tip of the Combo Pen on victim's outer thigh.
4. Push firmly until auto-injector fires. Hold in place for 10 seconds to ensure Pralidoxime has been properly delivered
5. If nerve agent symptoms are still present after 15 minutes, repeat injections. If symptoms still exist after an additional 15 minutes, repeat injections for a third time. If after the third set of injections, symptoms remain, do not give any more antidotes but seek medial help

Recommended Autoinjector Site (both Adult and Pediatric): **Anterolateral Thigh. Hold in place for 10 seconds.**

## CHEMPACKS and Resources for Mass Casualty Incidents (MCIs)

In addition to our "WMD" medications in the GMVEMSC Drug Bags, there are now additional resources for use in mass casualty incidents (MCI). **CHEMPACKS: containers with enough antidotes to treat roughly 500 victims** have been placed by the Centers for Disease Control (CDC) in hospitals around the nation.

Ohio Law and Region 2 EMS Standing Orders now permit EMT-Intermediates, EMT-Basics, and First Responders to use autoinjectors for nerve agent or organophosphate poisoning. **Personnel must understand that**

**the CHEMPACK agents are antidotes used to treat symptomatic patients; they are not to be given prophylactically (i.e., to persons who do not have symptoms).**

CHEMPACKS contain three drugs:

- Atropine (which blocks the effects of excess acetylcholine at its site of action);
- Pralidoxime Chloride (2-PAM) (which reactivates acetylcholinesterase and therefore reduces the levels of acetylcholine); and
- Diazepam (which lessens the severity of seizures).

There are two types of CHEMPACKS: Hospital and EMS. Both contain **the same drugs**. The difference between the two is the ratio of drug packaging: autoinjectors to multi-dose vials. Hospital CHEMPACKS have more multi-dose vials to permit precise dosing of children and patients requiring prolonged treatment. EMS CHEMPACKS have more autoinjectors to ease administration at the site, and by personnel wearing high levels of Personal Protective Equipment (PPE).

There are five types of autoinjectors in CHEMPACKS. All five work just like the Epi-pens you are already familiar with.

- 0.5 mg Atropens – Pediatric dose of Atropine
- 1.0 mg Atropens – Pediatric dose of Atropine
- Mark 1 Kits containing a 2 mg Atropine autoinjector, and another autoinjector with 2-PAM
- CANA's – ("Convulsive Antidote, Nerve Agent") containing 10 mg Diazepam for seizures

To request a CHEMPACK, EMS or hospitals simply contact the Ohio State Patrol (OSP) **Central Dispatch** at **866-599-LERP (5377).** 866-599-LERP will notify the closest CHEMPACK hospital and dispatch an OSP Trooper or other Law Enforcement agency to pick up the contents of the CHEMPACK, and deliver it to a Staging Location designated by you. You must advise **866-599-LERP** that the incident meets **both** of the following criteria:

- A Mass Casualty Incident (MCI) where the needs for antidotes are greater than the available resources, **AND**
- Either a Nerve agent/Organophosphate was identified **or** there are patients exhibiting signs or symptoms consistent with exposure to a nerve agent

Our region does have other resources for cyanide and biological incidents. In addition to the drugs in regional Drug Bags, all area hospitals have antidotes. EMS can access regional WMD Drug Caches for Mass Casualty Incidents by calling the "Regional Rescue Coordination Center" at **937-333-USAR (8727)**. You will see that information listed in the Job Aids. Contact 333-USAR when you need additional antidotes for Cyanide, Nerve Agent, or Organophosphate Mass Casualty Incidents.

"Job Aid" is NIMS-terminology for a step-by-step checklist. There are CHEMPACK Job Aids for Incident Commanders, EMS Sector Commanders, dispatchers, public safety personnel who transport CHEMPACK Antidotes, hospital personnel, and MCPs.

The information following is excerpted from the RPAB Region 2 CHEMPACK Job Aids:

| | |
|---|---|
| **Mnemonic for Signs & Symptoms of Nerve Agents or Organophosphates: SLUDGEMM** | |
| | **S**alivation **G**astrointestinal upset<br>**L**acrimation **E**mesis<br>**U**rination **M**uscle twitching<br>**D**efecation **M**iosis (abnormally constricted pupils) |
| **Initial Actions:** | |
| | **Personnel safety** (Distance, Uphill/Upwind, PPE, etc.) |
| | Call for additional resources<br>(Medic Units, Engines for personnel/resources/Decon, **Haz-Mat**, Law Enforcement, etc.) |
| | Consider potential for secondary devices |
| | **DECON!** |
| | **Antidotes in ALS Drug Bags and/or County Caches:**<br>• Mark I Kits or DuoDotes<br>• Atropine<br>• Oxygen<br>• CANA for seizures (Diazepam Autoinjectors)<br>• Diazepam or Midazolam for seizures<br>**Note: First Responders, EMT-B's, and EMT-I's may only administer $O_2$ and Autoinjector WMD Drugs** |
| **Contact Medical Control** | |
| | Provide the following information:<br>▪ Estimated number of confirmed or potential adult and pediatric patients<br>▪ Signs and symptoms exhibited by the patients<br>▪ Name and/or identification information of the nerve agent if known<br>▪ Form of the released nerve agent (liquid, gas, etc.) if known<br>▪ Routes of exposure of the patients (percutaneous, inhalation, ingestion, etc.) if known<br>▪ Additional anticipated decontamination needs if necessary |
| **Incident Is Appropriate for CHEMPACK Utilization <u>IF</u> BOTH of the following are present:** | |
| | • A mass casualty incident where the needs for antidotes are greater than available resources **<u>AND</u>**<br>• Nerve agent/Organophosphate identified or Patients are exhibiting signs or symptoms consistent with an exposure to a nerve agent |
| | **If incident is less than 50 victims, or involves cyanide or bio agents, contact 937-333-USAR and request antidotes.**<br>**If incident does meet the criteria in the box above, immediately have your Dispatch contact the Ohio Joint Dispatch Facility at 1-866-599-LERP, and request CHEMPACK deployment to the scene. Simultaneously, contact 937-333-USAR and request additional Nerve Agent Antidotes.** |
| **Receive CHEMPACK from Transporting Law Enforcement Agency** | |
| | Sign the "**CHEMPACK CONTROLLED SUBSTANCE TRANSFER FORM"** and receive copy |
| | Obtain authorization **from Medical Control to administer** CHEMPACK antidotes. |
| | **To avoid the need for numerous calls to Medical Control in a Mass Casualty Incident, request an "Antidote Free" order, allowing you to treat all patients on the scene**<br>▪ Region 2 EMS personnel need authorization from a MCP to administer CHEMPACK drugs, as well as cyanide antidotes.<br>▪ Calling for separate orders for each individual patient is impractical.<br>▪ This terminology ("Antidote Free") has been adopted from law enforcement and the military for this type of medical scenario. It is a blanket order to allow EMS to treat Mass Casualty victims as needed. "Weapons free" (as opposed to weapons tight) is a weapon control order whereby weapons systems may be fired at any target not positively recognized as friendly. |

| | |
|---|---|
| **Once Authorized, Administer Antidotes to Patients as Needed** | |
| | **Antidote dosing and administration of treatment (field, transport, and hospital):**<br>♦ Administer **1-2 mg. Atropine (Atropine Sulfate)** every 3 - 5 minutes, as available until lungs are clear to auscultation. **Atropine** may be given IV or IM, or IM by **Mark I or DuoDote** auto-injector<br>➢ Atropine is administered as 1-2 mg in conventional form, or by the 2 mg Autoinjector, for adults and children weighing over 90 pounds<br>➢ Children weighing 40 - 90 pounds should be give 1 mg Atropine, or the 1 mg Atropen autoinjector<br>➢ Children weighing less than 40 pounds should be given 0.5 mg Atropine, or the 0.5 mg Atropen autoinjector<br>➢ Or children may be given IV/IM Atropine 0.02 mg/kg every 5 minutes until excessive airway secretions diminish<br>♦ Follow Atropine with **2-PAM (Pralidoxime)** 600 mg IM, **which is Mark I autoinjector Item 2 for older children and adults, or 1 gram IV drip or IM.** If **DuoDote** was used, no second autoinjector is needed.<br>➢ Infants and young children should receive Pralidoxime, 25-50 mg/kg IV drip or IM<br>Treat any seizures with **Diazepam, Midazolam**, or **{Diazepam Autoinjector}** |
| | **Rules of Thumb:**<br>• Mild to moderate cases should be treated with one or two doses of Atropine and 2-PAM<br>• Severe doses will generally require repeating every 5 minutes up to 3 doses<br>• Organophosphate poisonings will require more Atropine (> 3 Mark I Kits or 3 DuoDotes) than Nerve Agent poisonings, but no more 2-PAM than the 3 Mark I's or DuoDotes.<br>• Atropine in these circumstances is **not** for bradycardia, which may or may not be present<br>• Primary endpoints for treatment are diminished airway secretions, hypoxia improves, airway resistance decreases, and dyspnea improves |
| | Provide all needed Supportive Care (ventilation, eye/skin/oral care, etc.) |
| | Monitor all patients for delayed or recurring effects |
| **After Incident is Resolved** | |
| | Return all unused treatment supplies to the Hospital which supplied the CHEMPACK.<br>Properly dispose of all Medical Waste |
| **MCPs:** | |
| | Must authorize use of any WMD Antidotes (CHEMPACK or Drug Bag) by EMS personnel |
| | Must understand that inappropriate CHEMPACK opening will result in loss of a $250,000 asset. (As soon as CHEMPACK is opened, the drugs become ineligible for the Shelf Life Extension Program. If CHEMPACK is opened contrary to guidelines, the antidotes will not be replaced by CDC.) |

CHEMPACK antidotes are only useful against nerve agents or chemical pesticides. There is no provision for biological releases, cyanide incidents, etc. Furthermore, CHEMPACKS may **only** be utilized when other resources (antidotes in regional Drug Boxes and area hospitals) are inadequate for the number of victims.

If a hospital opens its own CHEMPACK, it also must notify 866-599-LERP, so they are aware the resources are not available for use elsewhere. Hospital CHEMPACKS have been partitioned into thirds. Each third is marked with colored dots (Red, Blue, and Yellow). Hospitals keep at least the materials with the Red dots for potential use at the Storing Hospital.

**HAZMAT: Biological**

- ♦ {In preparation for the possibility of a bioterrorist attack, Departments may store a supply of **Ciprofloxacin (Cipro)** or **Doxycycline**. They can provide prophylaxis against Anthrax, Cholera, and some protection against Plague.}

## HAZMAT: PEPPER SPRAY

- **{Sudecon Wipes}** can assist in the decontamination of patients or public safety personnel who have been sprayed with Pepper Spray.

## ABDOMINAL PAIN

- Use inspection, auscultation and palpation to assess the patient with abdominal pain.
- Assess and document pain using the OPQRST acronym:
    - O = Onset
        - Was the onset sudden or gradual?
    - P = Provocation and Palliation
        - What causes it?
        - What makes it better or worse?
    - Q = Quality
        - What kind of pain is it?
    - R = Region and Radiation
        - Where is the pain located?
        - Does it radiate?
    - S = Severity and Scale
        - Does it interfere with activities?
        - How does it rate on a severity scale of 1 to 10?
    - T = Timing
        - When did it begin?
        - How often does it occur?

- Consider **Ondansetron (Zofran) 4 mg slow IV over 2 minutes** for nausea or vomiting.
    - If unable to obtain IV, **a single IM dose may be administered Ondansetron (Zofran) 4 mg IM**

P Consider Ondansetron (Zofran) 0.1 mg/kg (Max Dose 4 mg) slow IV over 2 minutes for recurrent active vomiting. Consideration of the length of transport should be evaluated when administering Ondansetron in the pediatric patient.

- Pregnant patients of any age $\geq$ 20 weeks gestation should be taken to maternity department; < 20 weeks should go to the emergency department.
- For pain relief, including unilateral flank pain, when the patient is conscious, alert, is not hypotensive, and is complaining of severe pain, consider **Morphine, up to 5 mg, slow IV over 2 minutes.**
    - If unable to obtain IV, give **Morphine 5 mg SQ**
    - After 5 minutes, may consider repeating **Morphine, up to 5 mg, slow IV over 2 minutes**.
    - Repeat dose of **Morphine 5 mg SQ** (repeat no sooner than 30 minutes) is indicated only if transport time is greater than 30 minutes.

***Orthostatic Vital Signs**: Consider evaluation of orthostatic vital signs in a conscious patient suspected of being volume depleted, provided that there is no suspicion of spinal injury or another condition precluding this assessment. A rise from a recumbent position to a sitting or standing position associated with a fall in systolic pressure (after 1 minute) of 10 to 15 mm HG and/or a concurrent rise in pulse rate (after 1 minute) of 10 – 15 beats per minutes indicates a significant (at least 10%) volume depletion (postural hypotension) and a decrease in perfusion status.*

## FEVER

P Transport all infants < 2 months of age with a history or reported temperature of > $38.0^{C}$ ($100.4^{F}$) or < $35.6^{C}$ ($96.0^{F}$).

## OBSTETRICAL EMERGENCIES

- Aggressively treat for hypovolemic shock (do not rely on standard vital sign parameters).
- Give psychological support to patient and family.
- Be sure to take all expelled tissue with you to the hospital.

- Ask for first day of last menstrual period.
- Pregnant patients of any age ≥ 20 weeks gestation should be taken to maternity department; < 20 weeks gestation should go to the emergency department.

### Cardiac Arrest in Pregnancy

- Precipitating events for cardiac arrest include: Pulmonary embolism, trauma, hemorrhage or congenital or acquired cardiac disease.
- Load and go to closest hospital and follow all cardiac arrest protocols en route.
- To minimize effects of the fetus pressure on venous return, apply continuous manual displacement of the uterus to the left, or place a wedge (pillow) under the right abdominal flank and hip.
- Administer chest compressions slightly higher on the sternum than normal.

### Third Trimester Bleeding

- Place patient in left lateral recumbent position.
- Apply continuous manual displacement of the uterus to the left, or place a wedge (pillow) under the right abdominal flank and hip.

### Childbirth

**General Considerations**

- Unless delivery is imminent, transport to a hospital with obstetrical capabilities. Imminent delivery is when the baby is crowning during a contraction.
- Visualize the perineal area only when contractions are less than five minutes apart.
- Place a gloved hand inside the vagina only in the case of breech delivery with entrapped head, or a prolapsed umbilical cord.
- During delivery, gentle pressure with a flat hand on the baby's head should be applied to prevent an explosive delivery.
- Separate run reports must be completed for each patient. The newborn is a separate patient from the mother.

**Specific Care**

- Obtain history of patient condition and pregnancy, including contraction duration and interval, due date, first day of last menstrual period, number of pregnancies, number of live children, prenatal care, multiple births and possible complications, and drug use.
- After delivery, keep infant warm.
- Cut the umbilical cord, then place the baby to suckle at the mother's breast.
- Obtain one and five minute APGAR scores if time and patient condition permits.

*NOTE: Fundal Height refers to the level of the upper part of the uterus. Fundal height changes as the uterus enlarges during the course of pregnancy. You can palpate the top of the uterus and get a general idea of the weeks of gestation by relating fundal height with anatomical landmarks of the mother.*

**Changes in fundal height during pregnancy:**

| | |
|---|---|
| Above the symphysis pubis: | >12-16 weeks gestation |
| At the level of the umbilicus | 20 weeks |
| Near the xiphoid process | within a few weeks of term |

**APGAR scores at 1 minute and 5 minutes post delivery**

| SCORE | 0 | 1 | 2 |
|---|---|---|---|
| **A**ppearance | Blue or pale | Body pink; extremities blue | Completely pink |
| **P**ulse | Absent | Slow (< 100) | > 100 |
| **G**rimace | No response | Grimace | Cough or sneeze |

| | | | |
|---|---|---|---|
| **A**ctivity | Limp | Some flexion of extremities | Active motion |
| **R**esp. effort | Absent | Slow or Irregular | Good crying |

## Newborn Care & Resuscitation

### General Considerations

- P As soon as the baby is born, dry, warm, maintain airway.
- P Place in the sniffing position (1" towel under shoulders).
- P Suction infant until all secretions are clear of airway.
- P If the newborn delivers with meconium-stained amniotic fluid and is vigorous, with strong respirations, good muscle tone, and heart rate > 100 BPM, suction the mouth and nose in the same way as for infants with clear fluid.
- P If the newborn delivers with meconium-stained amniotic fluid and is depressed, has poor respiratory effort, decreased muscle tone, or heart rate < 100 BPM, suction the trachea before taking other resuscitative steps. Lower airway suction is achieved by intubating the infant and suctioning directly through the ET Tube, re-intubated with a new tube each time
- P Mechanical suction may be used on infants, but only if the suction pressure does not exceed 100 mmHg or 136 cm $H_2O$. Bulb suctioning is preferred.
- P If drying and suctioning has not provided enough tactile stimulation, try flicking the infant's feet and/or rubbing the infant's back. If this stimulation does not improve the infant's breathing, then BVM may be necessary.
- P Avoid direct application of cool oxygen to infant's facial area as may cause respiratory depression due to a strong mammalian dive reflex immediately after birth.
- P Use length / weight based resuscitation tape(e.g., Broselow Tape).

### Specific Care

- P After delivery of the infant, assess the airway and breathing while drying and positioning head down.
- P If HR <100, BVM ventilation is necessary to increase heart rate.
  - o Ventilation is also indicated for apnea and/or persistent central cyanosis.
  - o Ventilate at 40-60/min.
- P If cardiac arrest or spontaneous HR <60 despite adequate ventilation and stimulation:
  - o Compress at 120/min. (Compression to Ventilation ratio of 3:1)
- P **Epinephrine 1:10,000, 0.01 mg/kg IV/IO or Epinephrine (1:1,000) 0.1 mg/kg ETT**.
- P If no response, **repeat Epinephrine 1:10,000 every 3-5 minutes**.
- P If hypovolemic, **NS 10 ml/kg** over 5-10 minutes.
- P Consider **Naloxone 0.1 mg/kg**, IV/IO/ETT every 3 minutes until respirations improve.
- P **Dextrose 12.5% 1 ml/kg ($D_{25}$** diluted with equal amounts of **NS)** if BS <40 mg/dl.

## Delivery Complications

- Place mother on **$O_2$** by NRB.
- **Cord around baby's Neck**:
  - o As baby's head passes out of the vaginal opening, feel for the cord.
  - o Initially try to slip cord over baby's head.
  - o If too tight, clamp cord in two places and cut between clamps.
- **Breech Delivery**:
  - o When the appendage(s) or buttocks first become visible, transport patient *immediately* to the nearest facility.
  - o If the head is caught, support the body and insert two fingers forming a "V" around the mouth and nose.
- **Excessive Bleeding**:
  - o Treat for shock
  - o Post delivery, massage uterus firmly and put baby to mother's breast.

- **Prolapsed Cord**:
    - When the umbilical cord is exposed, prior to delivery, check cord for pulse.
    - Transport *immediately* with hips elevated and a moist dressing around cord.
    - Insert two fingers to elevate presenting part away from the cord, distribute pressure evenly if/when occiput presents.
    - Do not attempt to reinsert cord.

## PATIENT COMPETENCY/CONSENT, PSYCHIATRIC and COMBATIVE PATIENTS

**There are times when a "pink slip" or Involuntary Committal Form should be used. This REQUIRES coordination with and support from on scene law enforcement or health department officials, physician, or psychiatrist to "pink slip". Consult local rules, laws, policies, and / or guidelines.**

- Determine patient competency and consent.
- Obtain medical history:
    - Suicidal or combative history
    - Previous psychiatric hospitalization, when and where
    - Location that patient receives mental health care
    - Medications
    - Recreational drugs/alcohol – amount, names
- Do not judge, just treat.
- Transport all patients who are not making rational decisions and who are a threat to themselves or others for medical evaluation. Threat of suicide, overdose of medication, drugs or alcohol and/or threats to the health and well being of others are not considered rational.
- Consider a patient may be incapable to make medical decisions if they are:
    - Suicidal
    - Confused
    - Severely developmentally or mentally disabled and injured/ill
    - Intoxicated and injured/ill with an altered mental status
    - Physically/verbally hostile
    - Unconscious
- Consider and treat possible medical causes for patient's condition:
    - Hypoxia
    - Hypoglycemia
    - Drug intoxication/side effects/drug withdrawal
    - Seizures and post ictal states
    - Intracranial hemorrhages
- Consider staging until police have assured scene safety.
- Have patient searched for weapons
- Do not transport restrained patients in a prone position with the hands and feet behind the back or sandwiched between backboards or other items.
- Recheck a restrained patient's ability to breathe often
- Have the ability to remove/cut restraints if the patient vomits or develops respiratory distress
- Explain the need for restraint to the patient
- Document the restraints used and on which limbs and your justification for the restraints thoroughly
- A patient may be combative from either a medical condition or an injury where the administration of **{Midazolam 10 mg IN}**, **Midazolam 4 mg IM** or **Diazepam 5 mg slow IV over 2 minutes** may be indicated to safely complete transport.

P ♦ Consider **{Midazolam 0.2 mg/kg IN} or Midazolam 0.2 mg/kg IV/IM (Maximum Midazolam dose 4 mg)** or **Diazepam 0.2 mg/kg slow IV over 2 minutes (Maximum dose 5 mg) or Diazepam 0.5 mg/kg PR (Max dose 5 mg)** as a chemical restraint.

Per Ohio Revised Code 5122.01 and 5122.10, an EMTB, I or P may not "pink slip" an individual (transport a person to the hospital against their will for mental health evaluation) who is alert and oriented even if they are threatening harm to themselves or others. Only a health officer (such as a police officer, crisis worker, psychiatrist, licensed physician) can "pink slip" a person. The GMVEMSC strongly recommends that your

fire/EMS department, in consultation with your medical director/advisor and local law enforcement, have a procedure to deal with these types of situations.

This does not preclude you from taking action to prevent imminent harm to the patient or others, if it is safe for you to do so.

## ELDER ABUSE NEGLECT

- You MUST, by law, report all alleged or suspected adult abuse or neglect to the appropriate agency. Ohio Revised Code 5101.61 requires providers to report incidents of abuse to their county's adult protective services agency or local law enforcement as soon as possible. **Notifying hospital personnel about concerns of maltreatment does NOT meet the mandated EMS reporting responsibilities.**
- Hospitals have copies of the EMS Social Services Referral Form, supplied by GDAHA, for documenting cases of abuse. Use this form to provide information to the appropriate agency and so the receiving hospital social services staff can provide a continuum of care. GDAHA (228-1000 or www.gdaha.org) can also send this form to your department to have on hand.
    - White copy of the form – send to the appropriate agency (as well as call)
    - Yellow copy of the form – leave with the hospital records
    - Pink copy of the form – retain with your department EMS report
- Document on your run sheet or an addendum if you fill out a Social Services Referral form or if you inform local law enforcement concerning the abuse / neglect. Include the names of the personnel at the protective services or law enforcement agency that you contacted.

**Adult Public Social Services Agencies**

| County | Phone | After Hours Phone | Fax |
|---|---|---|---|
| Butler | (513) 887-4081 | Not Listed (County SO: 513-785-1000) | (513) 785-5969 |
| Champaign | (937) 484-1500 | Contact County SO (937) 484-6092 | (937) 484-1506 |
| Clark | (937) 327-1700 | (937) 324-8687 | (937) 327-1910 |
| Darke | (937) 548-7129 | (937)-548-2020 | (937) 548-4928 |
| Greene | (937) 562-6315 | Not Listed (County SO: 937-562-4800 | (937) 562-6177 |
| Miami | (937) 440-3471 | Contact County SO (937) 440-3965 | (937) 335-2225 |
| Montgomery | (937) 225-4906 | Not Listed (County SO: 937-225-4357 | (937) 496-7464 |
| Preble | (937) 456-1135 | (937) 456-1135 (same as daytime) | (937) 456-6086 |
| Shelby | (937) 498-4981 | Contact County SO (937) 498-1111 | (937) 498-1492 |
| Warren | (513) 695-1420 | (513) 425-1423 | (513) 695-2940 |

## CHILD ABUSE/NEGLECT

P Report all alleged or suspected child abuse or neglect to the appropriate agency. Ohio Revised Code 2151.421 requires providers to report incidents of abuse to their county's public children services agency or a municipal or county peace officer. Hospitals have copies of the EMS Social Services Referral Form, supplied by GDAHA, for documenting cases of abuse. Use of this form can help providers in providing information needed to their reporting agency, as well as provide for a continuum of care with hospital social services departments.

P Simply notifying hospital personnel about concerns of maltreatment do not meet mandated EMS reporting responsibilities. If any maltreatment is suspected, the EMS provider MUST, by law, notify the local public children services agency or law enforcement as soon as possible.

**Pediatric Public Social Services Agencies**

| County | Phone | After Hours Phone | Fax |
|---|---|---|---|
| Butler | (513) 887-4055 | (513) 868-0888 | (513) 887-4260 |
| Champaign | (937) 484-1500 | Contact County SO (937) 484-6092 | (937) 484-1506 |

| | | | |
|---|---|---|---|
| Clark | (937) 327-1700 | (937) 324-8687 | (937) 327-1910 |
| Darke | (937) 548-7129 | (937)-548-2020 | (937) 548-8723 |
| Greene | (937) 562-6600 | (937) 372-4357 | (937) 562-6650 |
| Miami | (937) 335-4103 | Contact County SO (937) 440-3965 | (937) 339-7533 |
| Montgomery | (937) 224-5437 | (937) 224-5437 (same as daytime) | (937) 276-6597 |
| Preble | (937) 456-1135 | (937) 456-1135 (same as daytime) | (937) 456-6086 |
| Shelby | (937) 498-4981 | Contact County SO (937) 498-1111 | (937) 498-1492 |
| Warren | (513) 695-1558 | (513) 659-2698 | (513) 695-1800 |

## SAFE HARBOR

- Voluntary Separation of Newborn Infant
- Safe Harbor (Ohio House Bill 660) is designed to allow desperate parents to separate from their babies confidentially to hospitals, EMS, or law enforcement agencies.
- Stipulations of separation:
    - Infant must be 30 days old or less
    - No signs of abuse or neglect
- History which should be obtained:
    - Date and time of birth
    - Any family medical history
    - Information regarding prenatal care
    - Information concerning the birth.
    - Information should be obtained in a manner, which will not lead to the revealing of the identity of the parents. Information collected should be based on patient (infant) care needs and assure confidentiality.
- Transport the infant to the hospital.

## ABBREVIATIONS

Some abbreviations are case sensitive while others are content sensitive. Any words that can be readily abbreviated using a period have been left out of this list.

| A | A |
|---|---|
| Abdomen | ABD |
| abdominal aortic aneurysm | AAA |
| Abortion | Ab |
| above the elbow | AE |
| Acetaminophen | APAP |
| acquired immune def syndrome | AIDS |
| activities of daily living | ADL |
| acute coronary syndrome | ACS |
| acute myocardial infarction | AMI |
| acute pulmonary edema | APE |
| acute renal failure | ARF |
| acute respiratory distress syndrome | ARDS |
| acute respiratory distress | ARD |
| administer rectally | p.r. |
| advanced cardiac life support | ACLS |
| advanced directive | AD |
| advanced life support | ALS |
| After | P |
| Afternoon | P.M. |
| against medical advice | AMA |
| AIDS related complex | ARC |
| Airborne | A/B |
| Alcohol | ETOH |
| alert & oriented | A&O |
| alert/verbal/pain/unresponsive | AVPU |
| all terrain vehicle | ATV |
| antecubital fossa | AC |
| aortic valve replacement | AVR |
| Approximately | (~) |
| arterial blood gas | ABG |
| arteriosclerotic heart disease | ASHD |
| as desired | ad lib |
| as necessary or needed | Prn |
| as soon as possible | ASAP |
| Aspirin | ASA |
| Assessment & Plan | A/P |
| At | @ |
| at bedtime | h.s. |
| atrial fibrillation | a-fib |
| atrial flutter | AF |
| atrial tachycardia | AT |
| Atrioventricular | AV |
| atrioventricular node | AV node |
| auscultation & percussion | A&P |
| automatic external defibrillator | AED |
| automatic transport ventilator | ATV |
| **B** | **B** |
| Backboard | BB |
| bag-valve-mask | BVM |
| basic life support | BLS |
| beats / breaths per minute | bpm |
| Before | a |
| below the elbow | BE |
| below the knee | BK |
| below the knee amputation | BKA |
| birth control (pills) | BC(P) |
| births, number of | para |
| Black | B |
| blood alcohol concentration | BAC |
| blood glucose | bG |
| blood pressure | BP |
| blood sugar | BS |
| body substance isolation | BSI |
| body surface area | BSA |
| both ears | AU |
| both eyes | OU |
| bowel movement | BM |
| Bradycardia | brady |
| breath or bowel sounds | BS |
| by mouth | PO |
| by or through | per |
| by way of | via |
| **C** | **C** |
| Calcium | $Ca^{++}$ |
| Canceled | CANX |
| Cancer | CA |
| capillary refill time | CRT |
| carbon dioxide | $CO_2$ |
| carbon monoxide | CO |
| cardiac care unit | CCU |
| cardiac output | co |
| cardiopulmonary resuscitation | CPR |
| carotid sinus massage | CSM |
| Centimeter | cm. |
| central nervous system | CNS |
| central venous pressure | CVP |
| Cerebral palsy | CP |
| cerebrospinal fluid | CSF |
| cerebrovascular accident | CVA |
| Cervical (1,2,3,4,5,6,7) | C |
| Cervical immobilization device | CID |
| Cervical spine | C-spine |
| Change | D |
| chest pain | CP |
| chest x-ray | CXR |
| chief complaint | CC |
| Chloride | $Cl^-$ |

| | |
|---|---|
| Chronic obstructive lung disease | COLD |
| chronic obstructive pulmonary disease | COPD |
| chronic renal failure | CRF |
| circulatory/sensory/motor | CSM |
| clear to auscultation | CTA |
| complaining of | c/o |
| complete blood count | CBC |
| computerized tomography | CAT/CT |
| congestive heart failure | CHF |
| conscious alert & oriented | CAO |
| consistent with | C/w |
| coronary artery bypass graft | CABG |
| coronary artery disease | CAD |
| cubic centimeter | cc. |
| **D** | **D** |
| Daily | q.d. |
| date of birth | DOB |
| Day | D |
| dead on arrival | DOA |
| decibel(s) | dB |
| Decreasing | ↓ |
| deep tendon reflex | DTR |
| degree(s) | ° |
| delirium tremens | DT's |
| dextrose in water - 25% | D25 |
| dextrose in water - 5% | D5W |
| dextrose in water - 50% | D50 |
| diabetes insipidus | DI |
| diabetes mellitus | DM |
| diabetic ketoacidosis | DKA |
| Diagnosis | Dx |
| diastolic blood pressure | DBP |
| dilation & curettage | D&C |
| Discontinue | d/c |
| Disease | DZ |
| do not resuscitate | DNR |
| Dressing | dsg. |
| Drops | gtt(s) |
| dry sterile dressing | DSD |
| due to | d/t |
| dyspnea on exertion | DOE |
| **E** | **E** |
| ear, nose, & throat | ENT |
| ectopic pregnancy | EP |
| Electrocardiogram | ECG / EKG |
| Electroencephalogram | EEG |
| emergency department | ED / ER |
| emergency department physician | EDP |
| emergency medical services | EMS |
| endotracheal (tube) | ET(T) |
| Epinephrine | EPI |
| equal | (=) |

| | |
|---|---|
| Equal to or greater than | ≥ |
| Equal to or less than | ≤ |
| esophageal detection device | EDD |
| esophageal gastric tube airway | EGTA |
| esophageal obturator airway | EOA |
| Estimated | Est. |
| estimated blood loss | EBL |
| estimated date of confinement | EDC |
| estimated date of delivery | EDD |
| estimated time of arrival | ETA |
| Evaluation | eval. |
| Every | Q |
| every evening | q.p.m. |
| every morning | q.a.m. |
| every other day | q.o.d. |
| external jugular vein | EJV |
| extraocular movement | EOM |
| **F** | **F** |
| Fahrenheit | F |
| family history | FH |
| fetal heart rate | FHR |
| fever of unknown origin | FOU |
| flow restricted $O_2$ powered ventilation device | FROPVD |
| fluid | Fld |
| follow-up | f/u |
| foot / feet | Ft. |
| for example | e.g. |
| foreign body | FB |
| four times a day | q.i.d. |
| fracture | Fx |
| french | Fr. |
| front to back | AP |
| full range of motion | FROM |
| full term normal delivery | FTND |
| full weight bearing | FWB |
| funny looking beats (ECG) | FLB's |
| **G** | **G** |
| gallbladder | GB |
| gastrointestinal | GI |
| gauge | Ga |
| genitourinary | GU |
| Glasgow coma score / scale | GCS |
| grain | Gr |
| gram | Gm |
| grand mal or grandmother | GM |
| grandfather | GF |
| grandmother or grand mal | GM |
| greater than | > |
| gun shot wound | GSW |
| gynecology | GYN |
| **H** | **H** |
| hazardous materials | HazMat |

| | |
|---|---|
| head, ears, eyes, nose, throat | HEENT |
| headache | H/a |
| headblocks | HB's |
| health related facility | HRF |
| heart block | HB |
| heart rate | HR |
| heart sounds | HS |
| head of bed | HOB |
| hematocrit | Hct. |
| hemoglobin | Hgb. |
| hepatitis A(BC) virus | HA(BC)V |
| history | Hx |
| history & physical | H&P |
| history of | h/o |
| history of present illness | HPI |
| hour | H or hr. |
| human immunodeficiency virus | HIV |
| hydrochlorothiazide | HCTZ |
| hydrogen ion concentration | pH |
| hypertension | HTN |
| **I** | **I** |
| identity or identification | ID |
| if necessary | Sos |
| immediately | STAT |
| increasing | ↑ |
| inferior | inf. |
| insulin dependent diabetes | IDDM |
| intake & output | I&O |
| intensive care unit | ICU |
| intercostal space | ICS |
| intermittent positive pressure breathing | IPPB |
| intraaortic balloon pump | IABP |
| intracranial pressure | ICP |
| intramuscular | IM |
| Intranasal | IN |
| intraosseous | IO |
| intravenous | IV |
| intravenous drip (or IVPB) | IVD |
| intravenous piggyback | IVPB |
| intravenous push | IVP |
| iron | Fe |
| **J** | **J** |
| joule | J |
| jugular venous distension | JVD |
| junctional rhythm | JR |
| **K** | **K** |
| keep vein open | KVO |
| Kendrick extrication device | KED |
| Kendrick traction device | KTD |
| kilogram | kg. |
| kilometer | km. |
| kilometers per hour | Kph |

| | |
|---|---|
| knee, above the | AK |
| knee, below the | BK |
| **L** | **L** |
| L lower extremity | LLE |
| L lower lobe (lung) | LLL |
| L upper extremity | LUE |
| L upper lobe (lung) | LUL |
| labor & delivery | L&D |
| large | lg. |
| laryngotracheal mask airway | LMA |
| last menstrual period | LMP |
| last normal menstrual period | LNMP |
| law enforcement | LE |
| lead | Pb |
| leading to or progressing | → |
| left | (L) |
| left bundle branch block | LBBB |
| left ear (auris sinistra) | AS |
| left eye (oculus sinister) | OS |
| left heart failure | LHF |
| left lower quadrant | LLQ |
| left upper quadrant | LUQ |
| less than | < |
| licensed practical nurse | LPN |
| lidocaine | LIDO |
| liters per minute | LPM |
| litre / liter | L. |
| liver, kidney & spleen | LK&S |
| longboard | LB |
| loss or limit of motion | LOM |
| loss or level of consciousness | LOC |
| low back pain | LBP |
| lower back | LB |
| lower extremity | LE |
| lumbar vertebrae (1,2,3,4,5) | L |
| lung sounds | LS |
| **M** | **M** |
| magnesium | Mg. |
| magnetic resonance imaging | MRI |
| mass casualty events | MCE |
| MAST | PASG |
| mean arterial pressure | MAP |
| mechanism of injury | MOI |
| medial | Med. |
| medical antishock trousers | MAST |
| medical control physician | MCP |
| medical doctor | MD |
| medications | Meds |
| mercury | Hg. |
| meter | m. |
| metered dose inhaler | MDI |
| methicillin resistant staphylococcus aureus | MRSA |

| microgram | Mcg. |
|---|---|
| mid-clavicular line | MCL |
| miles per hour | Mph |
| milk of magnesia | MOM |
| milliequivalent | mEq |
| milligram | mg. |
| milligrams per deciliter | mg/DL |
| milliliter (same as cc.) | ml. |
| millimeter | Mm |
| millimeters of mercury | mmHg |
| minute | min. |
| mitral valve prolapse | MVP |
| month(s) | mo(s). |
| morning | AM |
| motor vehicle accident | MVA |
| motor vehicle collision | MVC |
| multiple casualty incident | MCI |
| multiple sclerosis | MS |
| musculoskeletal | MS |
| myocardial infarction | MI |
| **N** | **N** |
| nasal cannula | NC |
| nasogastric (tube) | NG(T) |
| nasopharyngeal airway | NPA |
| nasotracheal | NT |
| nausea & vomiting | N&V |
| nausea, vomiting, & diarrhea | NVD |
| negative / no / absent | (-) |
| neuro-muscular blockade (RSI) | NMB |
| newborn | NB |
| nitroglycerine | NTG |
| nitroprusside | NTP |
| no apparent distress | NAD |
| no known drug allergies | NKDA |
| non weight bearing | NWB |
| non-insulin dependent diabetes | NIDDM |
| non-rebreather mask | NRBM |
| nonsteroidal anti-inflammatory | NSAID |
| normal saline | NS |
| normal saline lock | NSL |
| normal sinus rhythm | NSR |
| not applicable / available | n/a |
| nothing by mouth | NPO |
| number | # |
| nurse practitioner | NP |
| **O** | **O** |
| $O_2$ % of arterial blood | $SpO_2$ |
| obstetrics | OB |
| of each | Aa |
| ointment | Ung |
| once a day | Od |
| operating room / suite | OR |
| orogastric (tube) | OG(T) |

| oropharyngeal airway | OPA |
|---|---|
| ounce | oz. |
| over the counter | OTC |
| overdose | OD |
| oxygen | $O_2$ |
| **P** | **P** |
| packs per day | p/d |
| pain | pn. |
| pair | pr. |
| paroxysmal atrial tachycardia | PAT |
| paroxysmal nocturnal dyspnea | PND |
| paroxysmal SVT | PSVT |
| partial pressure of $CO_2$ | $PCO_2$ |
| partial pressure of $O_2$ | $PO_2$ |
| partial rebreather mask | PRBM |
| partial weight bearing | PWB |
| parts per million | Ppm |
| past medical history | PMH |
| past medical illness | PMI |
| patient | Pt. |
| peak expiratory flow | PEF |
| pediatric intensive care unit | PICU |
| pelvic inflammatory disease | PID |
| penicillin | PCN |
| peptic ulcer disease | PUD |
| per | / |
| percent | % |
| percutaneous coronary intervention | PCI |
| peripheral inserted central cath | PICC |
| peripheral vascular resistance | PVR |
| pharyngo tracheal lumen airway | PtL |
| physical exam | PE |
| physician on scene | POS |
| physician's assistant | PA |
| physician's desk reference | PDR |
| police (department) | PD |
| positive / yes / present | (+) |
| positive end expiratory pressure | PEEP |
| positive or negative | (+/-) |
| post-operative diagnosis | PODx |
| potassium | $K^+$ |
| pound | lb. |
| pounds per square inch | Psi |
| pregnancies, number of | Gravida |
| premature rupture of membranes | PROM |
| premature atrial contraction | PAC |
| premature junctional complex | PJC |
| premature nodal contraction | PND |
| premature ventricular complex | PVC |
| premenstrual syndrome | PMS |
| primary care physician | PCP |
| primary / 1$^{st}$ degree | 1° |
| prior to my arrival | PTA |

| | |
|---|---|
| pulmonary edema / embolism | PE |
| pulmonary function test | PFT |
| pulse | P= |
| pulse oximetry | POX/$SPO_2$ |
| pulse rate | PR |
| pulse, motor, sensation | PMS |
| pulseless electrical activity | PEA |
| pupils (=) & reactive to light | PERL |
| pupils (=) round reactive to light & accomodation | PERRLA |
| **Q** | **Q** |
| QRS complex | QRS |
| quart | Qt. |
| questionable / possible | ? |
| **R** | **R** |
| R bundle branch block | RBBB |
| R lower extremity | RLE |
| R lower lobe (lung) | RLL |
| R middle lobe (lung) | RML |
| R upper extremity | RUE |
| R upper lobe (lung) | RUL |
| range of motion | ROM |
| rapid sequence induction | RSI |
| Rate | R |
| red blood cell / count | RBC |
| red lights & siren | RLS |
| Regarding | re: |
| registered nurse | RN |
| respiratory rate | RR |
| respiratory syncytial virus | RSV |
| returned to service | RTS |
| rheumatic heart disease | RHD |
| Right | (R) |
| right ear (auris dextra) | AD |
| right eye (oculus dexter) | OD |
| right heart failure | RHF |
| right lower quadrant | RLQ |
| right upper quadrant | RUQ |
| rule out | r/o |
| **S** | **S** |
| sacral vertebrae (1-5) | S |
| secondary / second degree | 2° |
| sexually transmitted disease | STD |
| shortness of breath | SOB |
| signs & symptoms | S&S |
| sino-atrial | SA |
| sinus bradycardia | SB |
| sinus tachycardia | ST |
| small | sm. |
| small volume nebulizer | SVN |
| sodium | $Na^+$ |
| sodium bicarbonate | $NaHCO_3$ |
| sodium chloride | NaCl |

| | |
|---|---|
| solution | soln. |
| spinal cord | sp.cd. |
| stable angina | SA |
| standard | std. |
| standard operating procedure | SOP |
| standing orders | SO |
| stand-by | S/B |
| stroke volume | SV |
| subcutaneous | SC or SQ |
| sublingual | SL |
| sudden death | SD |
| sudden infant death syndrome | SIDS |
| supraventricular tachycardia | SVT |
| surgical intensive care unit | SICU |
| symmetry | sym. |
| symptoms | Sx |
| systemic vascular resistant | SVR |
| systolic blood pressure | SBP |
| **T** | **T** |
| tablespoon | Tbsp. |
| tachycardia | tach(y) |
| teaspoon | Tsp. |
| telephone order | TO |
| temperature | T |
| temperature, pulse, & respiration | TPR |
| temporomandibular joint | TMJ |
| tender loving care | TLC |
| therefore / in conclusion | \ |
| thoracic vertebrae (1-12) | T |
| three times a day | t.i.d. |
| tibia | Tib |
| tidal volume | TV |
| times | × |
| to keep open | TKO |
| tourniquet | TQ |
| tracheal deviation | TD |
| traction or transport | Tx |
| transcutaneous pacing | TCP |
| transfer | x-fer |
| transient ischemic attack | TIA |
| transplant | Txp |
| transport or traction | Tx |
| treatment / medication | Rx |
| tuberculosis | TB |
| turned over to | TOT |
| twice a day | b.i.d. |
| Tylenol™ | APAP |
| tympanic membrane | TM |
| **U** | **U** |
| ultra-high frequency | UHF |
| umbilical vein | UV |
| unconscious | unc. |
| unknown | unk. or u/k |

| | |
|---|---|
| unstable angina | USA |
| upper & lower | U+L |
| upper extremity | UE |
| upper respirator infection | URI |
| urinary tract infection | UTI |
| US pharmacopeia | USP |
| **V** | **V** |
| vancomycin resistant enterococcus | VRE |
| vein | V |
| ventricular fibrillation | VF/ VFIB |
| ventricular tachycardia | VT/ VTACH |
| verbal order | VO |
| versus | vs. |
| very high frequency | VHF |
| vital signs | VS |
| vital signs stable | VSS |
| **W** | **W** |
| warm & dry | w/d |
| water | $H_2O$ |
| watt/seconds (joules) | w/s |
| week | wk. |
| weight | wt. |
| white | W |
| white blood count | WBC |
| with | C |
| within normal limits | WNL |
| without | s or w/o |
| Wolff Parkinson-White | WPW |
| work of breathing | WOB |
| **X** | **X** |
| x-ray | XR |
| **Y** | **Y** |
| year | yr. |
| years old | y/o - y.o |
| **Z** | **Z** |
| | |

**Greater Miami Valley EMS Council & Ohio EMS Region 2**
**EMS CHECKLIST: SUSPECTED Stroke/CVA/TIA**

**Patient Name:_____ EMS Agency/Unit:_____**

**Date:_____ Run #:_____ Time Onset of S/S:_____**

**(Y)es or (N)o**

**_____ 1. HISTORY compatible with CVA?**

**_____ 2. PHYSICAL EXAM compatible with acute CVA?**

**Cincinnati Prehospital Stroke Scale:**

Facial Droop (pt. shows teeth or smiles)
_____ Normal _____ Abnormal

Arm Drift (pt. closes eyes and holds both arms straight out for about 10 seconds):
_____ Normal _____ Abnormal

Abnormal Speech (have pt. say "you can't teach an old dog new tricks"):
_____ Normal _____ Abnormal

**Glasgow Coma Component Scores** (Scores of 8 or less have poor prognosis and need ALS ASAP).

_____ EYE OPENING (1 – 4) _____ **Total GCS** (3 – 15)
_____ BEST VERBAL RESPONSE (1 – 5)
_____ BEST MOTOR RESPONSE (1 – 6)

**_____ 3. Time of onset of signs and symptoms: _____**

**_____ 4. INITIAL THERAPY per Standing Orders:**
**Oxygen, Blood Sugar, EKG, Monitor, IV or Saline Lock.**
**Intubate if indicated. Hyperventilation if signs of herniation.**

**_____ 5. TRANSPORT patient and HISTORIAN WITHOUT DELAY to most appropriate hospital. NOTIFY hospital ASAP.**
Contact hospital and advise them of a "Stroke Alert" ***if*** you can arrive within **two hours** of time patient was last seen normal. Select groups of patients may receive thrombolytics after as much as six hours. Consider air transport for Stroke patients with long transport times.

**_____ 6. POTENTIAL CONTRAINDICATIONS to Thrombolytic Therapy (i.e. tPA) to be communicated to hospital (no influence on transport destination):** (Check only those with a positive history.)

**_____ a)** Active internal bleeding.
**_____ b)** Hx of CVA in past three months.
**_____ c)** Spinal or intracranial surgery or trauma within three months.
**_____ d)** Intracranial neoplasm, AV malformation or aneurysm.
**_____ e)** Known bleeding disorder
_____ **f)** Pregnancy (certain lytic agents)
**_____ g)** Seizure at time of onset of symptoms.
**_____ h)** History of intracranial hemorrhage.
**_____ i)** Abnormal blood glucose (< 60 or > 400 mg/dl).
**_____ j)** Recent major surgery or trauma ( < 2 months).
_____ **k)** BP > 200/ > 120.
**_____ l)** Active peptic ulcer or guaiac positive stools (GI or GU bleeding).
**_____ m)** Recent prolonged or traumatic CPR.
**_____ n)** Hx of CVA, or brain tumor/injury/surgery.
**_____ o)** Current use of anticoagulants (i.e., Coumadin)

## RIGHTS OF MEDICATION ADMINISTRATION

1. Right Medication
    a. Make sure that the medication is the correct medication indicated by the GMV Standing Orders and check it against the medication label.
    b. Double-check the generic vs. non-generic names of medications. Many names are similar and have a potential for error. If you aren't sure, reference your SO Manual or Quick Reference Guide!
    c. Check the expiration date on the label
2. Right Patient:
    a. Confirm patient ID and confirm absence of allergies or other contraindications for your patient.
    b. Confirm that the medication is appropriate for your patient per the GMV Standing Orders.
    c. In multiple patient or mass casualty situations, confirm that the medication is being delivered to the correct patient.
3. Right Dose:
    a. Check the SO dose against the medication label for the correct concentration.
    b. Recheck dosage calculations and verify accuracy.
    c. Confirm that the correct dose has been drawn up.
    d. If you aren't familiar with the medication, use your references!
4. Right Route:
    a. Check the standing order and the medication label for the correct route.
    b. Confirm the route of administration for the medication; IM, SQ, IV, PO, IN, ETT, Neb
    c. Confirm that the dose is correct for the chosen route, since some dosages will vary depending on the route.
    d. Make sure the route is accessible; is the IV site patent?
5. Right Time:
    a. Give the medication over the proper time duration per the Standing Orders.
6. Right Documentation:
    a. Document medication, dose, time of administration and duration of administration, route, and patient respons

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Adenosine (Adenocard) | Stable PSVT. | **ADULT**<br>6 mg rapid IV followed by up to 12 mg rapid IV if not successful. May repeat 12 mg rapid IV. Rapid IV is as quickly as possible. All rapid IV followed by 20 cc NS.<br><br>Go directly to 12 mg if pt w/hx of PSVT advises it takes 12 mg. May repeat 12 mg. | No |
| | | PVST | **PEDIATRIC**<br>0.1 mg/kg rapid IV followed by 10 ml rapid saline flush. Max. dose 6 mg<br>.<br>If unsuccessful, 0.2 mg/kg rapid IV followed by rapid saline flush. Max. dose 12 mg. | No |
| | Albuterol (Proventil) Metered Dose Inhaler<br><br>NOTE:<br>This drug is no longer included in the drug bags.<br><br>EMTs may assist patients with administration of the drug. | Asthma/Emphysema/COPD | **ADULT**<br>2 puffs from Inhaler | No |
| | | Asthma/Emphysema/COPD | **PEDIATRIC**<br>2 puffs from Inhaler | No |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATIONS | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Albuterol (Proventil) | Bronchospasm in Asthma/COPD, Allergic Reaction with wheezing | **ADULT**<br>2.5 mg (3 ml) with 8-10 LPM high flow $O_2$ by nebulizer.<br><br>Combine Ipratropium with first Albuterol. May repeat Albuterol up to 2X for a total of 3 doses. | No |
| | | Bronchospasm in Asthma/COPD, Allergic Reaction with wheezing | **PEDIATRIC**<br>2.5 mg (3 ml) with 8-10 LPM high flow $O_2$ by nebulizer.<br><br>Combine Ipratropium with first Albuterol. May repeat Albuterol up to 2X for a total of 3 doses. | No |
| | Amiodarone (Cordarone) | V Fib/Pulseless V Tach.<br><br>Stable Wide Complex Tach | **ADULT**<br>V Fib/Pulseless V Tach:<br>300 mg IV or IO. May repeat ½ initial dose (150 mg) in 5-10 min.<br><br>Wide Complex Tachycardia:<br>IV Infusion – Add 150 mg to 250 ml Bag of NS with Microdrip tubing wide open (over 10 min). | No<br><br>No |
| | | V Fib/Pulseless V Tach. | **PEDIATRIC**<br>5 mg/kg IV/IO. May repeat initial dose (5 mg/kg) in 5-10 min. if V Fib persists or reoccurs. Max single dose 300 mg | No |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATIONS | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Aspirin (abbreviated as ASA) | Suspected Cardiac Chest Pain | **ADULT ONLY**<br>324 mg<br>4 chewable 81 mg tablets – MUST CHEW | No |
| Atropine is one component of the DuoDotes (in Haz-Mat Drugs in GMVEMSC Drug Bags), and first autoinjector in Mark I Kits (contained in CHEMPACKs) | Atropine | Symptomatic Brady,<br><br>Asystole, PEA with slow rate<br><br>Organophosphate, or Nerve Agent Poisoning (regardless of cardiac rate) | **ADULT**<br>Bradycardia:<br>Atropine 0.5 mg IV up to 3 mg<br><br>Asystole, PEA with brady:<br>Atropine 1mg, IV/IO for asystole or slow PEA (repeat every 3-5 minutes up to 3 doses)<br><br>Organophosphate, or Nerve Gas Poisoning:<br>1-2 mg IV, IO or IM q 3 – 5 min or Mark 1 Item 1, 2 mg until lungs are clear to auscultation<br><br>There is no max dose for Atropine for Organophosphate or Nerve Agent poisoning<br><br>Atropine concentration in multiple-dose vial is 0.4 mg/ml. | Brady – No<br><br>Asystole, PEA - No<br><br>Organophosphate, Nerve Agent Poisoning – Yes |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | | | **PEDIATRIC** | |
| | Atropine | Symptomatic Brady | Bradycardia:<br>0.02 mg/kg IV (max dose 1mg) q 3 – 5 min | Brady – No |
| Atropine is one component of the DuoDotes (in Haz-Mat Drugs in GMVEMSC Drug Bags), and first autoinjector in Mark I Kits (contained in CHEMPACKs) | | Organophosphate, or Nerve Agent Poisoning (regardless of cardiac rate) | <40 lbs: 0.5 mg IV/IO/IM or 0.5 mg Atropine (Atro-Pen) Auto-injector<br><br>>40 lbs: 1.0 mg IV/IO/IM or 1.0 mg Atropine (Atro-Pen) Auto-injector<br><br>> 90 lbs: 2.0 mg IV/IO/IM or 2.0 mg Atropine Auto-injector<br><br>Atropine concentration in multiple-dose vial is 0.4 mg/ml. | Organophosphate, Nerve Agent Poisoning – Yes |
| | | | **ADULT** | |
| | Calcium Chloride 10% | Renal dialysis patient in cardiac arrest. | Arrest & OD:<br>1,000 mg. (10 ml) IV | Arrest – No |
| | | Ca. Channel Blocker OD | 1000 mg (10 ml) IV | Ca. Channel Blocker OD – Yes |
| | | HF exposure with tetany OR cardiac arrest. Tetany may present as: overactive neurological reflexes, spasms of the hands and feet, cramps, and laryngospasm. | HF Exposure with tetany or cardiac arrest<br>1,000 mg. (10 ml) IV | HF Exposure – Yes |
| | | Prophylactically, after exposure to HF | HF Exposure Prophylaxis:<br>400 mg IV | Prophylaxis - Yes |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Calcium Chloride 10% | Renal dialysis patient in cardiac arrest.<br><br>Ca. Channel Blocker OD | **PEDIATRIC**<br>Arrest & OD:<br>20 mg/kg IV (max dose 500 mg in Ca. Channel Blocker OD) | Arrest – No<br><br>Ca. Channel Blocker OD – Yes |
| | Ciprofloxacin (Cipro) | As prophylaxis against Anthrax, Cholera or Plague | **ADULT**<br>500 mg tablet by mouth, twice a day | Yes |
| | | As prophylaxis against Anthrax, Cholera or Plague | **PEDIATRIC**<br>Dosage will be specified at time of incident | Yes |
| | Cyanide Kit:<br>-- {Amyl Nitrite}<br>-- {Sodium Nitrite}<br>-- Sodium Thiosulfate | Conscious pt. with known or suspected Cyanide Poisoning, or with smoke inhalation with suspected cyanide component | **ADULT**<br>{Amyl Nitrite pearl – Break & inhale for 30 seconds out of each minute q 10 min.} | Yes |
| | | | {Sodium Nitrite – 300 mg (10 ml). 3% solution, slow IV over 2 minutes.} | Yes |
| | | | Sodium Thiosulfate – 50 ml. 25% solution (12.5 gm) slow IV over 2 minutes immediately following Sodium Nitrite. | Yes |
| | | Smoke Inhalation with suspected cyanide component in unconscious pt. or<br>Known or strongly suspected Cyanide Poisoning | {Amyl Nitrite pearl – break & place 1 ampule into nebulizer. Attach to BVM & ventilate until Sodium Nitrite and Sodium Thiosulfate can be administered.} | Yes |
| | | Cardiac Arrest from known or suspected Cyanide Poisoning or Smoke Inhalation | Sodium Thiosulfate – 50 ml. 25% solution (12.5 gm) slow IV over 2 minutes | No |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Cyanide Kit:<br>-- {Amyl Nitrite}<br>-- {Sodium Nitrite}<br>-- Sodium Thiosulfate | Smoke Inhalation in unconscious pt. Known or strongly suspected Cyanide Poisoning | **PEDIATRIC**<br>{Amyl Nitrite pearl – Break & inhale for 30 seconds out of each minute q 10 min.} | Yes |
| | | <u>Conscious pt w/known or strongly suspected Cyanide Poisoning</u>: | Sodium Thiosulfate – Children > 25 kg, 50 ml. 25% solution (12.5 gm) slow IV over 2 minutes. Children < 25 kg, 1.65 ml/kg (412.5 mg/kg) of 25% solution (max dose 50 ml or 12.5 gm) slow IV over 2 minutes. | In arrest – No |
| | | <u>Unconscious pt. w/known or strongly suspected Cyanide Poisoning</u> | | |
| | | <u>Smoke Inhalation where Cyanide is likely:</u> | Same as above | Yes |
| | | | Same as above | Smoke Inhalation: Children < 25 kg, contact MCP for dose of Sodium Thiosulfate |
| | {Dawn} Soap | Decontamination of tenacious hazardous material on skin | ADULT<br>Solution of {Dawn} soap & water | |
| | | Decontamination of tenacious hazardous material on skin | **PEDIATRIC**<br>Solution of {Dawn} soap & water | |

| DRUG CHART: PARAMEDIC – Adult and Pediatric Combined | | | | |
|---|---|---|---|---|
| **SPECIAL INFO** | **DRUG NAME** | **INDICATION** | **DOSAGE** | **REQUIRES MCP** |
| | Dextrose | Diabetic with mental status changes.<br>Evidence of hypoglycemia in cardiac arrest.<br><br>Stroke, generalized hypothermia with or without arrest, altered level of consciousness of unknown cause, or seizures with BS<60, no BS monitor available, or strong suspicion of hypoglycemia despite BS readings | **ADULT**<br>50% solution, 25 gm IV<br><br>In Non Arrest Pt:<br>May repeat in 10 min. if pt. fails to respond or BS remains <60. | No |
| | | Diabetic with mental status changes.<br>Evidence of hypoglycemia in cardiac arrest.<br><br>Stroke, generalized hypothermia with or without arrest, altered level of consciousness of unknown cause, or seizures with BS<60, no BS monitor available, or strong suspicion of hypoglycemia despite BS readings | **PEDIATRIC**<br>Children < 25 kg – 25% solution IV, 2 ml/kg OR 1 ml/kg 50% solution diluted with equal volume of saline IV.<br><br>Children > 25 kg – 1 ml/kg 50% solution IV<br><br>Infants < 1 year old – 25% solution 2 ml/kg diluted with equal volume of saline IV.<br><br>Newborn brady ***<br><br>In Non Arrest Pt:<br>May repeat in 10 min. if pt. fails to respond or BS remains <60. | No |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATIONS | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Diazepam (Valium) | Seizures | **ADULT**<br>Seizures<br>5 mg slow IV over 2 minutes. May repeat dose once.<br>If unable to start IV, consider Diazepam 10 mg. Rectally using syringe with needle removed. | No |
| | | As "chemical restraint" in combative patient<br><br>Recent Cocaine/Crack use with significant hypertension or hemodynamically significant tachycardia (HR>100 SBP <100) | Other<br>5 mg slow IV over 2 minutes. May repeat dose once. | No |
| | | Seizures<br><br>As "chemical restraint" in combative patient | **PEDIATRIC**<br>Seizures<br>0.2 mg/kg slow IV over 2 min. Maximum dose 5 mg. OR<br>0.5 mg/kg rectally. Max dose 5 mg. PR<br>May repeat 0.2 mg/kg slow IV over 2 min up to 5 mg max slow IV. | No |
| | Diazepam (Valium) CANA | Seizures associated with Organophosphate or Nerve Agent MCI | **ADULT**<br>10 mg IM Autoinjector | No |
| | | Seizures associated with Organophosphate or Nerve Agent MCI | **PEDIATRIC**<br>10 mg IM Autoinjector | No |

| DRUG CHART: PARAMEDIC – Adult and Pediatric Combined | | | | |
|---|---|---|---|---|
| **SPECIAL INFO** | **DRUG NAME** | **INDICATIONS** | **DOSAGE** | **REQUIRES MCP** |
| | Diphenhydramine (Benadryl) | Allergic Reaction/Anaphylaxis: Wheezes Present<br>In anaphylaxis pt. who goes into arrest if not already given | **ADULT**<br>Allergic Reaction/Anaphylaxis: 50 mg IM or slow IV over 2 minutes | No |
| | | Extrapyramidal Reaction | 50 mg IM or slow IV over 2 minutes | Yes |
| | | Allergic Reaction/Anaphylaxis: Wheezes Present<br>In anaphylaxis pt. who goes into arrest if not already given | **PEDIATRIC**<br>1 mg/Kg (Max dose 50 mg) IM or slow IV over 2 minutes | No |
| | Dopamine | Shock With or Without Pulmonary Edema. | **ADULT**<br>Dopamine Drip – 5 to 20 mcg/Kg/min of premix drip with 400 mg/250 ml. Increase by increments of 5 mcg/kg/min | No |
| | | Bradycardia w/ BP <100. | Start @ 2 mcg/kg/min (15 gtts/min) up to 10 mcg/kg/min<br>Titrate to keep BP > 100 | No |
| | | Non-Traumatic Shock With or Without Pulmonary Edema. | **PEDIATRIC**<br>Dopamine Drip – 5 - 20 mcg/Kg/min of premix drip with 400 mg/250 ml. Start @ 5 mcg/kg/min (15 gtts/min)<br>Titrate to maintain adequate perfusion | Yes |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| For Public Safety personnel and immediate family members | Doxycycline | As prophylaxis against Anthrax, Cholera & Plague | **ADULT**<br>500 mg tablet by mouth, twice a day | Yes |
| | | As prophylaxis against Anthrax, Cholera & Plague | **PEDIATRIC**<br>Dosage will be specified at time of incident | Yes |
| | Duodote | Organophosphate or Nerve Agent Poisoning | **ADULT**<br>Single auto injector with 2 mg. Atropine and 600 mg 2-Pam (See individual drug listing for specific information on drugs) | Yes |
| | | Organophosphate or Nerve Agent Poisoning | **PEDIATRIC**<br>Single auto injector with 2 mg. Atropine and 600 mg 2-Pam (See individual drug listing for specific information on drugs) | Yes |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATIONS | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | | | **ADULT** | |
| | Epinephrine | V Fib, Pulseless V tach, Asystole, PEA | 1 mg IV or IO 1:10,000 or 2 mg ETT (1 mg of both 1:10,000 and 1:1,000)<br><br>Asystole & PEA:<br>1 mg IV/IO 1:10,000 10-15 minutes post Vasopressin Repeat q 3 – 5 min. 2 mg ETT (1 mg of both 1:10,000 and 1:1,000) if no IV access. | For arrest – No |
| | | Asthma in severe distress, Anaphylaxis | Asthma: 0.3 mg of 1:1,000 SC. May be repeated during transport. | No<br><br>For repeat in asthmas – Yes |
| | | Allergic Reaction/Anaphylaxis who remains hypotensive after fluid bolus. | 0.5 mg of 1:10,000 very slow IV/IO | No |
| | | Allergic Reaction/Anaphylaxis who goes into arrest. | 3 mg of 1:10,000 rapid IV/IO | No |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATIONS | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Epinephrine | V Fib, Pulseless V tach, Asystole, PEA | **PEDIATRIC**<br>V Fib & Pulseless tach: 0.01 mg/kg of 1:10,000 IV, or 0.1 mg/kg of 1:1,000 ETT. Repeat q 3-5 min. | For arrest – No |
| | | | Asystole & PEA: 0.01 mg/kg of 1:10,000 IV, or 0.1 mg/kg ETT. Repeat q 3-5 min. | No |
| | | Bradycardia | Bradycardia: 0.01 mg/kg of 1:10,000 IV, or 0.1 mg/kg ETT. Repeat q 3-5 min. | No |
| | | Asthma in severe distress, anaphylaxis | Asthma: 0.01 mg/kg of 1:1,000 SQ. May be repeated during transport. | For repeat in asthmas – Yes |
| | EpiPen | Severe symptomatic allergic reaction or asthma in severe distress | **ADULT**<br>0.3 mg<br>Auto injector | No |
| | EpiPen Junior | Severe symptomatic allergic reaction or asthma in severe distress | **PEDIATRIC**<br>Patients < 30 kg – 0.15 mg Auto injector | No |
| | EpiPen Adult | | Patients > 30 kg - 0.3 mg Auto injector | No |
| | Etomidate | To provide sedation prior to Sedate to Intubate procedure. | **ADULT ONLY**<br>0.3 mg/kg IV. May repeat within 2 min. if pt. resistant to intubation<br>Average dose is 15 – 25 mg. | **No – Must be authorized by dept. Med. Dir.** |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE (ADULT) | REQUIRES MCP |
|---|---|---|---|---|
| | Furosemide (Lasix) | Pulmonary Edema with BP > 100 | **ADULT ONLY**<br>80 mg slow IV over 2 min | No |
| | Glucagon | Hypoglycemia if no IV access.<br>Stroke, generalized hypothermia without arrest, altered level of consciousness of unknown cause, or seizures with BS < 60, no BS monitor available, or strong suspicion of hypoglycemia despite BS reading, if no IV access. | **ADULT**<br>1 mg IM | No |
| | | Calcium Channel Blocker or Beta Blocker OD. | 1 mg IV or IM | Yes |
| | | Allergic Reaction/Anaphylaxis unresponsive to Epinephrine. | 2 mg IV or IM | No |
| | | Hypoglycemia if no IV access.<br>Stroke, generalized hypothermia without arrest, altered level of consciousness of unknown cause, or seizures with BS < 60, no BS monitor available, or strong suspicion of hypoglycemia despite BS reading, if no IV access. | **PEDIATRIC**<br>1 mg IM | Hypoglycemia – No |
| | | Calcium Channel Blocker or Beta Blocker OD. | 1 mg IV/IM | Ca. Channel Blocker or Beta Blocker OD – Yes |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATIONS | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| New<br>Optional | Hydroxocobalamin (Cyanokit) | Known or strongly suspected cyanide intoxication, or smoke inhalation with suspected cyanide component | **ADULT ONLY**<br>5 grams (both vials) via slow IV infusion over 15 minutes.<br>Must not be used in conjunction with other Cyanide antidotes.<br>May be repeated X 1 if patient is critical but not in arrest. | **Yes – must also be authorized by department Medical Director.** |
| | Ipratropium (Atrovent) | Bronchospasm in Asthma/COPD, Allergic Reaction with wheezing | **ADULT**<br>0.5 mg combined w/first dose of Albuterol nebulized | No |
| | | Bronchospasm in Asthma/COPD, Allergic Reaction with wheezing | **PEDIATRIC**<br>0.5 mg combined w/first dose of Albuterol nebulized | No |
| | Lidocaine 2% Gel | Intubation on awake patient. | **ADULT**<br>Apply to ETT. | No |
| | | Intubation on awake patient. | **PEDIATRIC**<br>Apply to ETT. | No |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | | | **ADULT** | |
| | Lidocaine 2% | V Fib, Pulseless V Tach, | 1 - 1.5 mg/kg ETT<br>Repeat bolus one-half initial dose (0.5 - 0.75 mg/kg) after 5 min. | No |
| | | When V fib/Pulseless V Tach pt. converts to perfusing rhythm. | Lidocaine Drip @ 2-4 mg/min. For drips, use pre-mix 1 gm/250 ml. | No |
| | | Intubation on awake patient | 4 ml (80 mg) 2% nebulized or<br>2 ml (40mg) in each nostril with {MAD} | No |
| | | {Premedication for Sedate To Intubate for pt. with suspected stroke, intracranial hemorrhage, head injury or signs of increased ICP} | 100 mg. IV | No – Must be authorized by dept. Med. Dir. |
| | | For pain caused by pressure of intraosseous fluid administration | 1.5 mg/kg up to 100 mg via {IO} site. | No |
| | | | **PEDIATRIC** | |
| | | V Fib, Pulseless V Tach, | V fib/Pulseless V Tach:<br>1-1.5 mg/kg ETT.<br>Repeat bolus 1 mg/kg.<br>Max dose 100 mg. | No |
| | | When V fib/Pulseless V Tach pt. converts to perfusing rhythm. | Lidocaine Drip @ 20-50 mcg/min. For drips, use pre-mix 1 gm/250 ml. This yields 4 mg/ml or 4000 mcg/ml. | |
| | | Intubation on awake patient | 2 mg/kg (max dose 80mg or 4 ml.) 2% nebulized | |
| | | For pain caused by pressure of intraosseous fluid administration | 1.5 mg/kg up to 100 mg via {IO} site. | |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATIONS | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Magnesium – containing antacid (Maalox or Mylanta) | Ingestion of Hydrofluoric Acid | **ADULT ONLY**<br>Following dilution with water or milk, have pt. drink 3-4 oz. Maalox or Mylanta | No |
| | | Hydrofluoric Acid on Skin | Following irrigation, apply topically to burned area unless industry has already applied topical agents. | No |
| | Magnesium Sulfate solution (Epsom salt) | Hydrofluoric Acid on Skin | **ADULT ONLY**<br>Following irrigation with water, use as additional irrigating solution for at least 30 minutes. | No |
| | Midazolam (Versed) | Conscious pt. requiring cardioversion.<br>Conscious pt. requiring pacing.<br>In Allergic Reaction/Anaphylaxis, before intubation of conscious patient | **ADULT**<br>2 – 4 mg slow IV over 2 minutes. | No |
| | | For seizures during Valium Shortage, or for seizures if Departments carry the {Mucosal Atomizer Devices (MAD)}. | <u>Seizures</u><br>10 mg. intranasally using {MAD}. Administer 5 mg in each nostril. If seizure persists 5 minutes after treatment, consider repeating 1/2 dose IN or 4 mg IM. | No |
| | | After intubation (not limited to "Sedate to Intubate"), if patient is resisting and SBP>100. | 2-4 mg slow IV over 2 minutes. | No |
| | | As "chemical restraint" in combative patient | 10 mg. intranasally using {MAD} or 4 mg. IM | No |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | | | **PEDIATRIC** | |
| | Midazolam (Versed) | Conscious pt. requiring cardioversion.<br>Conscious pt. requiring pacing. | Sedation:<br>0.2 mg/kg slow IV over 2 minutes. | No |
| | | If Departments carry the {Mucosal Atomizer Devices (MAD)} for seizures during Valium Shortage, or for seizures | Seizures<br>0.2 mg/kg intranasally using {MAD} (max dose 4mg). Administer ½ dose in each nostril. If seizure persists 5 minutes after treatment, consider repeating dose either intranasally or IV. | No |
| | | After intubation, if patient is resisting and SBP is normal for age. | After intubation:<br>0.2 mg/kg slow IV over 2 minutes. | No |
| | | As "chemical restraint" in combative patient | 0.2 mg/kg intranasally using {MAD} (max dose 4mg). Administer ½ dose in each nostril. **Or** 0.2 mg/kg IV/IM. | Yes |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Morphine | Pain relief in AMI and other painful conditions, Pulmonary edema | **ADULT**<br>1st dose – Up to 5 mg slow IV over 2 minutes based on patient's weight, provided SBP>100.<br><br>Repeat Dose – May repeat up to 5 mg<br><br>If unable to establish IV, Morphine SQ 5 mg.<br>SQ is not indicated for pulmonary edema<br><br>Repeat SQ is indicated no sooner than 30 minutes only if transport time is greater than 30 min. | No<br><br>No<br><br>No<br><br>Yes |
| | Morphine | Pain relief in peds ≥ 2 years old | **PEDIATRIC**<br>1st dose – 0.1 mg/kg slow IV over 2 minutes (max dose 5 mg) provided appropriate SBP.<br><br>Repeat Dose - May repeat up to 5 mg<br><br>If unable to establish IV, Morphine SQ 5 mg.<br><br>Repeat SQ is indicated no sooner than 30 minutes only if transport time is greater than 30 min. | No<br><br>Yes<br><br>No<br><br>Yes |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATION | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Naloxone (Narcan) | Respirations depressed or high index of suspicion of narcotic overdose. If patient has a pulse, Naloxone should be administered before intubating, as per ACLS.<br><br>Suspicion of drug abuse in cardiac arrest. | **ADULT**<br>Up to 4 mg IV varying rate according to pt. severity. IM, SQ, ETT if IV unsuccessful.<br>OR<br>2 mg intranasally using Mucosal Atomization device (MAD) – Administer 1 mg in each nostril. If no arousal occurs after 3 minutes, establish IV and administer IV dose.<br><br>Repeat doses may be given | No<br><br>Yes |
| | Naloxone (Narcan) | Respirations depressed or high index of suspicion of narcotic overdose. If patient has a pulse, Narcan should be administered before intubating, as per ACLS.<br><br>Suspicion of drug abuse in cardiac arrest. | **PEDIATRIC**<br>0.1 mg/kg (max dose 4 mg) slow IV varying rate according to pt. severity.<br>OR<br>0.1 mg/kg (max dose 2mg) intranasally using Mucosal Atomization device (MAD) – Administer ½ dose in each nostril. If no arousal occurs after 3 minutes, establish IV and administer IV dose. | No |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATIONS | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Nitroglycerine (abbreviated as NTG in the orders) (Nitrostat) | Chest pain in pt. who is at least 25 yrs. Old or has prescribed Nitro, or pulmonary edema with BP over 100 in pt. who is at least 25 yrs old or has prescribed Nitro.<br><br>Crack / Cocaine Overdose with Chest Pain and at least 25 yrs. Old. | **ADULTS ONLY**<br>0.4 mg SL q 5 min for continued chest pain up to a total of 3 tablets. | No<br><br><u>Exception</u>:<br>1 mm ST elevation in any 2 inferior leads – must contact MCP for repeat doses |
| Replaces Promethazine | Ondansetron (Zofran) | For nausea or active vomiting under Abdominal Pain protocol | **ADULT**<br>4 mg. slow IV over 2 minutes<br>If unable to obtain IV, may give Ondansetron 4mg. IM | No |
| | | Recurrent and active vomiting. | **PEDIATRIC**<br>0.1 mg/kg slow IV over 2 min (Max dose 4 mg)<br><br>Transport time should be considered prior to administration. | No |
| | Oral Glucose | Hypoglycemia if no IV access or available Glucagon.<br>Stroke, generalized hypothermia without arrest, altered level of consciousness of unknown cause, or seizures with BS < 60, no BS monitor available, or strong suspicion of hypoglycemia despite BS reading, if no IV access. | **ADULT**<br>1 tube<br><br>May be repeated in 10 mins. If BS remains < 60. | No |

**DRUG CHART: PARAMEDIC – Adult and Pediatric Combined**

| SPECIAL INFO | DRUG NAME | INDICATIONS | DOSAGE | REQUIRES MCP |
|---|---|---|---|---|
| | Oral Glucose | Hypoglycemia if no IV access or available Glucagon.<br>Stroke, generalized hypothermia without arrest, altered level of consciousness of unknown cause, or seizures with BS < 60, no BS monitor available, or strong suspicion of hypoglycemia despite BS reading, if no IV access. | **PEDIATRIC**<br>1 tube<br><br>May be repeated in 10 mins. If BS remains < 60. | No |
| | Pralidoxime (2-PAM)<br><br>Component of DuoDotes<br><br>(Mark I Auto-injector, from CHEMPACKS, Item 2) to be used following Atropine | To be used following Atropine in Organophosphate, or Nerve Gas Poisoning.<br><br>Both for treatment of civilian patients at the scene, as well as for protection of public safety personnel who walk into scene & become unexpectedly contaminated as well as for treatment of civilian patients at the scene. | **ADULTS**<br>600 mg IM AutoInjector | Yes |
| | | To be used following Atropine in Organophosphate, or Nerve Gas Poisoning.<br><br>Both for treatment of civilian patients at the scene, as well as for protection of public safety personnel who walk into scene & become unexpectedly contaminated as well as for treatment of civilian patients at the scene. | **PEDIATRIC**<br>Children > 20 kg: 600 mg IM AutoInjector | Yes |

| DRUG CHART: PARAMEDIC – Adults and Pediatric Combined | | | | |
|---|---|---|---|---|
| **SPECIAL INFO** | **DRUG NAME** | **INDICATIONS** | **DOSAGE** | **REQUIRES MCP** |
| | Sodium Bicarbonate | Renal dialysis pt. in asystole or PEA cardiac arrest.<br><br>Known tricyclic overdose | **ADULT**<br>Arrest in renal dialysis pt.:<br>100 mEq IV<br><br>Tricyclic antidepressant OD:<br>1 mEq/Kg IV. May repeat dose of 0.5 mEq/Kg for persistent or prolonged QRS. | Arrest – No<br><br>Tricyclic OD – Yes |
| | Sodium Bicarbonate | Renal dialysis pt. in asystole or PEA cardiac arrest.<br><br>Known tricyclic overdose | **PEDIATRIC**<br>Arrest in renal dialysis pt.:<br>100 mEq IV<br><br>Tricyclic antidepressant OD:<br>1 mEq/Kg IV. | Arrest – No<br><br>Tricyclic OD – Yes |
| | Sudecon Wipes | Pepper Spray | **ADULT**<br>Use as needed to assist with decontamination | No |
| | | Pepper Spray | **PEDIATRIC**<br>Use as needed to assist with decontamination | No |
| | Tetracaine | Prior to eye irrigation in Rx. of chemical injury to eye & in other situations with significant eye pain without possibility of penetrating trauma to eye. | **ADULT**<br>2 drops in each affected eye | No |
| | | Prior to eye irrigation in Rx. of chemical injury to eye & in other situations with significant eye pain without possibility of penetrating trauma to eye. | **PEDIATRIC**<br>2 drops in each affected eye | No |
| | Vasopressin | Asystole / PEA | **ADULT**<br>40 units IV | No |

| **PARAMEDIC** - Therapeutic Actions, Contraindications, and Precautions | | | |
|---|---|---|---|
| **DRUG NAME** | **THERAPEUTIC ACTION** | **CONTRAINDICATION** | **PRECAUTIONS/SIDE EFFECTS** |
| Adenosine (Adenocard) | Decreases electrical conduction through the A V node without causing negative inotropic effects. Acts directly on SA node to decrease chronotropic activity. | Second or third degree AV block, or sick sinus syndrome. Hypersensitivity to adenosine, atrial flutter, atrial fibrillation, ventricular tachycardia. | Lightheadedness, paresthesias, headache, diaphoresis, palpitations, chest pain, hypotension, shortness of breath, transient periods of sinus bradycardia, sinus pause, or bradyasystole, ventricular ectopy, nausea, metallic taste.<br><br>May produce bronchoconstriction in patients with asthmas and in patients with bronchopulmonary disease. |
| Albuterol (Proventil) | Bronchodilator | Prior hypersensitivity reaction to Albuterol, cardiac dysrhythmias associated with tachycardia. | Usually dose related, restlessness, apprehension, dizziness, palpitations, tachycardia, dysrhythmias.<br><br>May precipitate angina pectoris and dysrhythmias. |
| Amiodarone (Cordarone) | Antidysrhythmic agent with multiple mechanisms of action. | Pulmonary congestion, cardiogenic shock, hypotension, sensitivity to Amiodarone. | Hypotension, headache, dizziness, bradycardia, AV conduction abnormalities, flushing, abnormal salivation.<br><br>Continuous ECG monitoring is required. |
| Aspirin (ASA) | Anti platelet | Hypersensitivity to salicylates, GI bleeding, active ulcer disease, hemorrhagic stroke, bleeding disorders, children with flu-like symptoms. | Stomach irritation, heartburn or indigestion, nausea or vomiting, allergic reaction.<br><br>Should be given as soon as possible to the patient with AMI. |

| **PARAMEDIC** - Therapeutic Actions, Contraindications, and Precautions | | | |
|---|---|---|---|
| **DRUG NAME** | **THERAPEUTIC ACTION** | **CONTRAINDICATION** | **PRECAUTIONS/SIDE EFFECTS** |
| Atropine | Anticholinergic | Tachycardia, hypersensitivity to atropine, obstructive disease of GI tract, obstructive uropathy, unstable cardiovascular status in acute hemorrhage with myocardial ischemia, narrow angle glaucoma, thyrotoxicosis. | Tachycardia, paradoxical bradycardia when pushed too slowly or when used at doses less than 0.5 mg, palpitations, dysrhythmias, headache, dizziness, anticholinergic effects (dry mouth/nose/skin/photophobia. blurred vision, urinary retention, constipation), nausea, vomiting, flushed, hot, dry skin, allergic reactions.<br><br>Atropine causes papillary dilation rendering the pupils nonreactive. Pupil response may not be useful in monitoring CNS status. |
| Calcium Chloride 10% | Antagonizes cardiac toxicity in hyperkalemia assoc. w/dialysis pts. Reverses symptoms of Ca. Channel Blocker. | VF during cardiac resuscitation, in patients with digitalis toxicity, hypercalcemia, renal or cardiac disease. | Bradycardia (may cause asystole), hypotension, metallic taste, severe local necrosis and sloughing following IV infiltration. May produce vasospasm in coronary and cerebral arteries. Hypertension and bradycardia may occur with rapid administration<br><br>Do not administer with sodium bicarbonate because if the two substances are mixed, a precipitate develops. Flush tubing between drugs. |
| Dextrose | Principal form of carbohydrate utilized by the body. | Intracranial hemorrhage, increased intracranial pressure, known or suspected CVA in the absence of hypoglycemia. | Warmth, pain, burning from medication infusion, hyperglycemia, thrombophlebitis. Extravasation may cause tissue necrosis; use large vein and aspirate occasionally to ensure route patency. May precipitate severe neurologic symptoms in thiamine deficient patients. |

| **PARAMEDIC** - Therapeutic Actions, Contraindications, and Precautions | | | |
|---|---|---|---|
| **DRUG NAME** | **THERAPEUTIC ACTION** | **CONTRAINDICATION** | **PRECAUTIONS/SIDE EFFECTS** |
| Diazepam (Valium) | Treats alcohol withdrawal and grand mal seizure activity. Used to treat anxiety and stress. | Hypersensitivity to the drug, substance abuse (use with caution), coma (unless the patient has seizures or severe muscle rigidity or myoclonus), shock, CNS depression as a result of head injury, respiratory depression. | Hypotension, reflex tachycardia (rare), respiratory depression, ataxia, psychomotor impairment, confusion, nausea.<br><br>May cause local venous irritation. |
| Diphenhydramine (Benadryl) | Prevents the physiologic actions of histamine by blocking histamine receptors. | Patients taking nonoamine oxidase (MAO) inhibitors, hypersensitivity, narrow angle glaucoma (relative), newborns and nursing mothers. | Dose related drowsiness, sedation, disturbed coordination, hypotension, palpitations, tachycardia, bradycardia, thickening of bronchial secretions, dry mouth and throat.<br><br>Use cautiously in patients with CNS depression or lower respiratory diseases such as asthma. |
| Dopamine | Acts on alpha, beta and dopaminergic receptors in dose-dependent fashion. Increases cardiac output in higher doses. | Tachydysrhythmias, ventricular fib, patients with pheochromocytoma. | Dose related tachydysrhythmias, hypertension, increased myocardial oxygen demand (ischemia).<br><br>Infuse through large stable vein to avoid possibility of extravasation injury.<br><br>Correct hypovolemia prior to using dopamine in hypotensive patients. |

| **PARAMEDIC** - Therapeutic Actions, Contraindications, and Precautions | | | |
|---|---|---|---|
| **DRUG NAME** | **THERAPEUTIC ACTION** | **CONTRAINDICATION** | **PRECAUTIONS/SIDE EFFECTS** |
| Duodote | Anticholinergic as a result of WMD MCI. Also Reactivates cholinesterase | Tachycardia, hypersensitivity to atropine, obstructive disease of GI tract, obstructive uropathy, unstable cardiovascular status in acute hemorrhage with myocardial ischemia, narrow angle glaucoma, thyrotoxicosis. Hypersensitivity to 2-PAM | Tachycardia, paradoxical bradycardia when pushed too slowly or when used at doses less than 0.5 mg, palpitations, dysrhythmias, headache, dizziness, anticholinergic effects (dry mouth/nose/skin/photophobia. blurred vision, urinary retention, constipation), nausea, vomiting, flushed, hot, dry skin, allergic reactions.<br><br>Atropine causes papillary dilation rendering the pupils nonreactive. Pupil response may not be useful in monitoring CNS status.<br><br>Use with caution in myasthenia gravis, renal impairment, pregnancy, lactation or children. |
| Epinephrine | Directly stimulates alpha and beta adrenergic receptors in dose-related fashion. Causes bronchodilation, vasoconstriction, and increased cardiac output. | Hypersensitivity (not an issue especially in emergencies – the dose should be lowered or given slowly in noncardiac arrest patients with heart disease), hypovolemic shock (as with other catecholamines, correct hypovolemia prior to use), coronary insufficiency (use with caution). | Headache, nausea, restlessness, weakness, dysrhythmias, including ventricular tachycardia and ventricular fib., hypertension, precipitation of angina pectoris, tachycardia.<br><br>May increase myocardial oxygen demand.<br><br>Syncope has occurred following epinephrine administration to asthmatic children. |
| EpiPen | Causes bronchodilation | Same as Epinephrine | Same as Epinephrine at low doses |
| Furosemide (Lasix) | Diuretic. Reduces cardiac preload by increasing venous capacitance. | Anuria, hypersensitivity, hypovolemia/dehydration, known hypersensitivity to sulfonamides, severe electrolyte depletion (hypokalemia). | Hypotension, ECG changes associated with electrolyte disturbances, dry mouth, hypochloremia, hypokalemia, hyponatremia, hypercalcemia, hyperglycemia, hearing loss can rarely occur after too rapid infusion of large doses especially in patients with renal impairment. |

| **PARAMEDIC** - Therapeutic Actions, Contraindications, and Precautions | | | |
|---|---|---|---|
| **DRUG NAME** | **THERAPEUTIC ACTION** | **CONTRAINDICATION** | **PRECAUTIONS/SIDE EFFECTS** |
| Glucagon | Increases breakdown of glycogen to glucose and stimulates glucose synthesis thereby raising blood sugar. | Hypersensitivity (allergy to proteins) | Tachycardia, hypotension, nausea and vomiting, urticaria.<br><br>Should not be considered a first line choice for hypoglycemia. |
| Hydroxocobalamin (Cyanokit) | Binds to cyanide molecules and is eliminated as waste | None | Do not administer other cyanide antidotes to the same patient.<br>May cause hypertension. |
| Ipratropium (Atrovent) | Causes bronchodilation by anticholenergic effect. | Hypersensitivity to atropine, ipratropium, or derivatives. | Use w/caution in pt. w/narrow-angle glaucoma, prostatic hypertrophy, or bladder neck obstruction, and ruing lactation. |
| Lidocaine Gel or Nebulized 2% | Suppresses stimulation of the upper airway (activation of swallowing, gagging or coughing) that can cause cardiovascular stimulation & elevation in intracranial pressure | Hypersensitivity | |
| Lidocaine 2% | Decreases automaticity | Hypersensitivity, Adams-Stokes syndrome, second or third degree heart block in absence of an artificial pacemaker | Lightheadedness, confusion, blurred vision, hypotension, cardiovascular collapse, bradycardia, altered level of consciousness, irritability, muscle twitching, seizures with high doses.<br><br>Use extreme caution in patients with hepatic disease, heart failure, marked hypoxia, severe respiratory depression, hypovolemia or shock, incomplete heart block or bradycardia and atrial fib. |
| Midazolam (Versed) | Provides sedation. | Hypersensitivity to benzadiazepines.<br>Acute narrow glaucoma.<br>Do not use in obstetrics, coma, shock or acute alcohol intoxication where vital signs are depressed. | Use with caution during lactation. Geriatric & debilitated pts. require lower doses & are more prone to side effects. Provide continuous monitoring of respiratory & cardiac function. Have resuscitation equipment & medication readily at hand. Can cause respiratory depression. |

| **PARAMEDIC** - Therapeutic Actions, Contraindications, and Precautions | | | |
|---|---|---|---|
| **DRUG NAME** | **THERAPEUTIC ACTION** | **CONTRAINDICATION** | **PRECAUTIONS/SIDE EFFECTS** |
| Morphine | Provides analgesia. Reduces cardiac preload by increasing venous capacitance and decreased afterload. | Hypersensitivity to narcotics, hypovolemia, hypotension, head injury or undiagnosed abdominal pain, increased ICP, severe respiratory depression, patients who have taken MAO inhibitors within 14 days. | Hypotension, tachycardia, bradycardia, palpitations, syncope, facial flushing, respiratory depression, euphoria, broncospasm, dry mouth, allergic reaction.<br><br>Use with caution in the elderly, those with asthma, and in those susceptible to CNS depression. May worsen bradycardia or heart block in inferior MI (vagotonic effect). |
| Naloxone (Narcan) | A competitive narcotic antagonist. | Hypersensitivity, use with caution in narcotic-dependent patients who may experience withdrawal syndrome (including neonates of narcotic-dependent mothers). | Tachycardia, hypertension, dysrhythmias, nausea and vomiting, diaphoresis, blurred vision, withdrawal (opiate).<br><br>May not reverse hypotension. Caution should be exercised when administering to narcotic addicts (may precipitate withdrawal with hypertension, tachycardia and combative behavior). |
| Nitroglycerine (Nitrostat) (NTG) | Vasodilator which decreased preload and to a lesser extent, afterload. | Hypersensitivity, hypotension, head injury, cerebral hemorrhage. | Transient headache, reflex tachycardia, hypotension, nausea & vomiting, postural syncope, diaphoresis. |
| Ondansetron (Zofran) | Stimulation of 5-HT 3 receptors causes transmission of sensory signals to the vomiting center via Vagal afferent fibers to induce vomiting. By binding to 5-HT 3 receptors, ondansetron blocks vomiting mediated by serotonin release. | Known hypersensitivity to Ondansetron. | During pregnancy it should only be used where clearly needed.. Sudden blindness of 2-3 minute duration has occurred in pt's receiving IV. It is suggested that the speed of delivery may contribute to this untoward effect. Constipation, diarrhea, fever, headache |

| **PARAMEDIC** - Therapeutic Actions, Contraindications, and Precautions | | | |
|---|---|---|---|
| **DRUG NAME** | **THERAPEUTIC ACTION** | **CONTRAINDICATION** | **PRECAUTIONS/SIDE EFFECTS** |
| Pralidoxime (2-PAM)<br><br>(Mark I Auto-injector, Item 2) to be used following Atropine | Reactivates cholinesterase after poisoning with anticholinesterase agents. (Organophosphate or Nerve Gas)<br>Reverses muscle paralysis after organophosphate poisoning. | Hypersensitivity | Use with caution in myasthenia gravis, renal impairment, pregnancy, lactation or children. |
| Sodium Bicarbonate | Buffers metabolic acidosis | In pts. with chloride loss from vomiting, metabolic & respiratory alkalosis, severe pulmonary edema, abdominal pain of unknown origin, hypoglycemia, hypokalemia, hypernatremia. | Metabolic alkalosis, hypoxia, rise in intracellular $PCO_2$ and increased tissue acidosis, electrolyte imbalance (hypernatremia), seizures, tissue sloughing at injection site. |
| Tetracaine | Provides rapid, brief, superficial anesthesia by inhibiting conduction of nerve impulses from sensory nerves. | Hypersensitivity to tetracaine.<br>Open injury to eye. | May cause burning or stinging sensation or irritation. Can cause epithelial damage & systemic toxicity.<br><br>Incompatible w/ mercury or silver salts often found in ophthalmic products. |
| Vasopressin | Potent peripheral vasoconstrictor.<br>May be used as an alternative pressor to epinephrine in the treatment of adult shock-refractory VF and PEA. | Not recommended for responsive pts. with coronary artery disease. | May produce cardiac ischemia & angina. |

**GREATER MIAMI VALLEY EMS COUNCIL**

**YEAR 2010 PARAMEDIC SKILL SHEETS**

Revised 9/2009

**EMT-PARAMEDICS:** Use these skill sheets and protocol to study for Skills Testing.

**SKILLS TESTER**S: Record Pass/Fail on Individual's Test Summary Sheet. Use these and additional adult/pediatric mega code sheets as guidelines for grading. It is only necessary to make enough copies of this packet for testers (those who have gone through Train the Trainer sessions).

**Adult Mega Code** - Separate Paramedic Mega Code sheets used for testing.



**Pediatric Mega Code** - Separate Paramedic Mega Code sheets used for testing.



**IV and Medications**



**Trauma**

**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: OROTRACHEAL INTUBATION OF THE NON-TRAUMA PATIENT**

NAME_____ DATE_____

LEVEL: _____Paramedic _____ Intermediate _____Basic

| **STEPS** | **1st Test** | **2nd Test** | **3rd Test** |
|---|---|---|---|
| A. List the indications for endotracheal intubation, with emphasis on situations in addition to cardiac arrest. | | | |
| B. List the equipment required to perform endotracheal intubation. | | | |
| C. List the potential complications of endotracheal intubation. | | | |
| D. Open the airway. | | | |
| E. Pre-oxygenate patient during preparations to intubate. | | | |
| F. Demonstrate the performance of cricoid pressure. | | | |
| G. Assemble equipment. | | | |
| H. Insert Laryngoscope | | | |
| I.. Elevate the mandible | | | |
| J. Insert the ET tube | | | |
| K Remove the stylet | | | |
| L. Document ETT at 20-22 cm at front teeth. | | | |
| M. Inflate the cuff with 5 to 10 ml. of air. | | | |
| N. Ventilate the patient. | | | |
| O. Confirm tube placement, using the End Tidal $CO_2$ Detector for patients with a perfusing rhythm, or the Esophageal Detection Device for patients in cardiac arrest. Be able to discuss the indications and limitations of each device. | | | |
| a. *NOTE: EDDs will fill more slowly in humans than in manikins | | | |
| b. Compress EDD first, then place it on the ETT before ventilating pt. | | | |
| c. If bulb fills in <5 seconds, ETT is likely successful | | | |
| d. If bulb fails to fill, or takes >5 seconds, or fills with emesis, esophageal placement is probable. | | | |
| e. Contraindicated in pregnancy or children less than 5 y/o or 20 kg. | | | |
| P. Confirm tube placement with at least 5 methods of verification and document the outcomes. | | | |
| Q. Secure tube in place & reassess placement after any movement of patient. | | | |
| R. Consider applying cervical collar to prevent extubation | | | |

EQUIPMENT

1. Proper size Endotracheal tube
2. Stylet
3. Laryngoscope Blade & handle
4. Magill forceps
5. 10 ml. syringe
6. Suction equipment
7. Stethescope
8. Gloves & Eye protection
9. Commercial tube holder or proper taping method.
10. Confirmation Device
11. C-collar
12. Adult Intubation Manikin

When preparing for this skill evaluation, be sure that you are able to meet the objectives A, B, C, G, and O. If you need a reminder, the material is readily available in any standard textbook.

**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: AUTOMATED EXTERNAL DEFIBRILLATORS**

NAME_____ DATE_____

LEVEL: _____Paramedic _____ Intermediate _____Basic ____ First Responder

| **STEPS** | **1st Test** | **2nd Test** | **3rd Test** |
|---|---|---|---|
| A. Perform an initial assessment of the patient. | | | |
| B. Begin CPR with 100% oxygen while preparing AED. | | | |
| a. If witnessed arrest, defibrillate. | | | |
| b. If unwitnessed arrest two minutes of CPR prior to defibrillation. | | | |
| c. CPR continuously until AED is attached to patient. | | | |
| C. Turn on the AED. | | | |
| D. Place the defibrillator pads onto the patient. | | | |
| E. Stop CPR. Allow AED to analyze rhythm. | | | |
| F. If shock is advised, clear all personnel from around the patient. | | | |
| G. Resume CPR if no response to the shocks. | | | |
| H. Repeat steps E, F and G in one minute if needed. | | | |

EQUIPMENT

1. A.E.D. per organization type
2. Simulator

**PEDIATRIC PROTOCOL SKILL EVALUATION**
**SUBJECT: PEDIATRIC OROTRACHEAL INTUBATION**

NAME_____ DATE_____

LEVEL: _____Paramedic _____ Intermediate _____Basic

| **STEPS** | **1st Test** | **2nd Test** | **3rd Test** |
|---|---|---|---|
| A. List the indications for endotracheal intubation, with emphasis on situations in addition to cardiac arrest. | | | |
| B. List the equipment required to perform endotracheal intubation. | | | |
| C. List the potential complications of endotracheal intubation. | | | |
| D. Open the airway. | | | |
| E. Pre-oxygenate patient during preparations to intubate. | | | |
| F. Assemble equipment, selects proper size ETT and laryngoscope blade (Uses Length / Weight Based Tape) | | | |
| G. Insert Laryngoscope | | | |
| H.. Elevate the mandible | | | |
| I. Insert the ET tube | | | |
| J. Remove the stylet | | | |
| K. Document ETT depth at at front teeth. | | | |
| L. Ventilate the patient. | | | |
| M. Confirm tube placement, using the End Tidal $CO_2$ Detector for patients with a perfusing rhythm, or the Esophageal Detection Device for patients in cardiac arrest (only if weight appropriate). Be able to discuss the indications and limitations of each device. | | | |
| a. Contraindicated in pregnancy, or children under 5 y/o or 20 kg. | | | |
| N. Confirm tube placement with at least 5 methods of verification and document the outcomes. | | | |
| O. Secure tube in place & reassess placement after any movement of patient. | | | |
| P. Consider applying cervical collar / towel roll to prevent extubation | | | |

EQUIPMENT

1. Proper size Endotracheal tube
2. Proper size Stylet
3. Laryngoscope Blade & handle
4. Magill forceps
5. Suction equipment
6. Stethescope
7. Gloves & Eye protection
8. Commercial tube holder or proper taping method
9. Confirmation Device
10. C-collar or towel roll
11. Pedi intubation manikin

When preparing for this skill evaluation, be sure that you are able to meet the objectives A, B, C, F, and M. If you need a reminder, the material is readily available in any standard textbook.

**PEDIATRIC PROTOCOL SKILL EVALUATION (Adult is an Optional Skill)**
**SUBJECT: LARYNGEAL MASK AIRWAY**

NAME_____ DATE_____

LEVEL: _____Paramedic _____ Intermediate _____Basic

| STEPS | 1st Test | 2nd Test | 3rd Test |
|---|---|---|---|
| A. List the indications for insertion of an LMA | | | |
| B. Select correct size LMA (See guidelines below) | | | |
| C. Check cuff by inserting air, then withdraw air. | | | |
| D. Deflate the cuff so that it forms a smooth "Spoon-Shape" | | | |
| E. Lubricate the posterior surface of the mask with water-soluble lubricant. | | | |
| F. Hold the LMA like a pen, with the index finger placed at the junction of the cuff and tube. | | | |
| G. NonTrauma Patient - With the head extended and the neck flexed, carefully flatten the LMA tip against the hard palate. Trauma Patient - With second person maintaining inline stabilization, carefully flatten the LMA tip against the hard palate. | | | |
| H. Use the index finger to push cranially, maintaining pressure on the tube with the finger. | | | |
| I. Advance the mask until definite resistance is felt at the base of the hypopharynx. | | | |
| J. Gently maintain cranial pressure with the non-dominant hand while removing the index finger. | | | |
| K. Without holding the tube, inflate the cuff with just enough air to obtain a seal (to a pressure of approximately 60 cm. H2O). See the instructions for appropriate volumes. Never overinflate the cuff. | | | |
| L. Ventilate & check breath sounds | | | |
| M. Confirm sufficient cuff inflation using the End Tidal CO2 Detector (EDD cannot be used) CAUTION: Do Not give medications via the LMA. | | | |

EQUIPMENT:
1. LMA (correct size)
2. Water-Soluble Lubricant
3. 50 ml. Syringe
4. Bag-valve-Mask
5. Stethoscope
6. End Tidal CO2 Detector
7. Suction

| LMA SELECTION GUIDELINES | | |
|---|---|---|
| LMA Airway Size | Patient Size | Maximum Cuff Inflation Volumes |
| 1 | Neonates/Infants up to 5 kg. (11 lb.) | 4 ml. air |
| 1.5 | Infants 5 - 10 kg. (22lb.) | 7 ml. air |
| 2 | Infants/Children 10 - 20 kg. (44 lb.) | 10 ml. air |
| 2.5 | Children 20 - 30 kg. (66 lb.) | 14 ml. air |
| 3 | Children 30 - 50 kg. (110 lb.) | 20 ml. air |
| 4 | Adults 50 - 70 kg. (154 lb.) | 30 ml. air |
| 5 | Adults 70 - 100 kg. (220 lb.) | 40 ml. air |
| 6 | Adults > 100 kg. (>220 lb.) | 50 ml. air |

**PEDIATRIC PROTOCOL SKILL EVALUATION**
**SUBJECT: INTEROSSEOUS INFUSION**

NAME_____ DATE_____

LEVEL: _____Paramedic _____Intermediate

| **STEPS** | **1st Test** | **2nd Test** | **3rd Test** |
|---|---|---|---|
| A. List the indications for intraosseous infusion. | | | |
| B. List the potential complications of intraosseous infusion. | | | |
| C. Select the appropriate site for children: anteromedial aspect of proximal tibial shaft, two fingerbreadths below the tibial tuberosity. | | | |
| D. Position leg for IO. | | | |
| E. Prepare the skin with appropriate antiseptic. | | | |
| F. Adjust the depth guard on the needle. | | | |
| G. Insert the needle perpendicular to the insertion site, directed away from the epiphyseal plate. Advance through the periosteum | | | |
| H. Remove inner stylet and attach 10 cc syringe with 5 ml IV fluid. Aspirate for blood/marrow. Inject 5 ml of fluid to insure free flow. | | | |
| I. Attach IV tubing. Infuse fluid and/or mediation, using pressure infuser. | | | |
| J. Tape the tubing to the skin. Secure the I.O. | | | |
| K. List the signs of possible infiltration. | | | |

EQUIPMENT:
1. Bone Marrow Aspiration needle (or BIG, EZ IO)
2. Alcohol prep
3. Towels
4. IV Solution and tubing
5. 10 ml. syringe
6. Tape, 4x4s
7. Gloves & Eye protection
8. 2 Rolls Kerlix
9. I.O. manikin

When preparing for this skill evaluation, be sure that you are able to meet the objectives A, B, C, G, and K. If you need a reminder, the material is readily available in any standard textbook.

This skill sheet is a guideline to use; you may tailor to the appropriate I.O. device carried by the department. Follow manufacturer recommendations for the device.

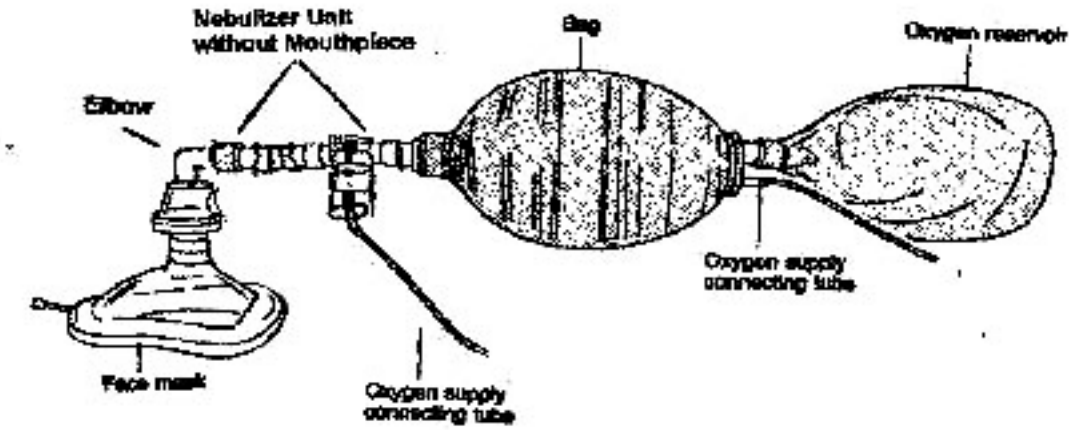
**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: USE OF NEBULIZER WITH BAG-VALVE DEVICE**

NAME_____ DATE_____

LEVEL: _____Paramedic _____Intermediate

| STEPS | 1st Test | 2nd Test | 3rd Test |
|---|---|---|---|
| A. List the indications for the use of nebulized drugs with bag-valve device | | | |
| B. Connect bag-valve to nebulizer unit without mouthpiece as shown in drawing. | | | |
| C. Connect mask to elbow, then connect elbow to nebulizer as shown in drawing. | | | |
| D. Place medications and saline solution in the reservoir well of the nebulizer. | | | |
| E. Connect 1st oxygen supply to nebulizer @ 8-12 LPM. and. 2nd oxygen supply to bag-valve @ 12-15 LPM. (If only one oxygen source, attach to nebulizer. | | | |
| F. Use mask with nonintubated patient or attach elbow to endotracheal tube of intubated patient. | | | |
| G. Begin bagging patient, being careful to keep reservoir well of the nebulizer in an upright position. | | | |
| H. If only one oxygen source is available, connect oxygen tubing to bag-valve device after medication has been administered. | | | |
| I. Monitor patient for effects of medications. | | | |

Equipment as shown in the illustration




**Note: It is recommended that departments have the inline nebulizer set prepackaged and available for providers.**

**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: SPECIAL VENOUS ACCESS - CENTRAL VENOUS CATHETER, DIALYSIS CATHETER, OR PICC LINE**

NAME_____ DATE_____

LEVEL: _____Paramedic

| **STEPS** | **1st Test** | **2nd Test** | **3rd Test** |
|---|---|---|---|
| A. List the indications for accessing a Central Venous Catheter, Dialysis Catheter, or PICC line. | | | |
| B. Prepare IV fluid and tubing | | | |
| C. Cleanse catheter port with alcohol prep thoroughly. State reason | | | |
| D. Insert 10 ml. or greater Luer Lock needleless syringe. | | | |
| E. Unclamp catheter. State reason why it is done after inserting syringe. | | | |
| F. Aspirate with very LITTLE force to withdraw 5 ml blood. State reason why blood is withdrawn. | | | |
| G. If you CANNOT aspirate blood, STOP the procedure. | | | |
| H. Reclamp catheter. State reason for reclamping before removing syringe. | | | |
| I. Remove blood-filled syringe and discard into Sharps Container. | | | |
| J. Cleanse catheter again with alcohol prep. State why recleansing is so important. | | | |
| K. Insert 10 ml or greater Luer Lock needleless syringe filled with 10 ml of 0.9 NS. | | | |
| L. Unclamp catheter and flush catheter with 10 ml using a pulsating technique. | | | |
| M. Reclamp catheter & then remove syringe. | | | |
| N. Cleanse catheter again with alcohol prep. | | | |
| O. Insert IV tubing with Luer-Lok connector into access port. | | | |
| P. Unclamp catheter. State why it is done after attaching IV tubing. | | | |
| Q. Adjust flow rate. | | | |
| R. Tape IV tubing securely in place two places on patient's skin. | | | |
| S. Administer medications through IV tubing port, if indicated. | | | |

EQUIPMENT:
1. IV tubing w/ Luer Lock connector and IV fluid
2. Two 10 ml or greater Luer Lock. Needleless Syringes, one with 10 ml 0.9 % NS
3. Minimum of 6 Alcohol Preps

**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: SPECIAL VENOUS ACCESS - DIALYSIS FISTULA**

NAME_____ DATE_____

LEVEL: _____Paramedic

| **STEPS** | **1st Test** | **2nd Test** | **3rd Test** |
|---|---|---|---|
| A. List the indications for accessing Dialysis Fistula. | | | |
| B. Prepare IV fluid and tubing | | | |
| C. Do NOT use tourniquet, constricting band, or BP cuff on arm with fistula.. | | | |
| D. Visualize or palpate fistula | | | |
| E. Cleanse skin over Fistula thoroughly | | | |
| F. Insert Catheter into Fistula as you would into a vein, being careful NOT to puncture the back wall. State why. | | | |
| G. Withdraw needle holding downward pressure on fistula proximal to needle insertion. State why. | | | |
| H. Attach IV tubing to catheter while maintaining downward pressure on fistula. This may require two people. | | | |
| I. Adjust flow rate. Use Pressure Infuser, BP cuff on IV Bag, or IV Pump to facilitate flow. State why | | | |
| J. Tape IV tubing securely in place. | | | |
| K. Administer medications through IV tubing port, if indicated. | | | |

EQUIPMENT

1. IV tubing and IV fluid
2. Catheter-over –Needle device
3. Alcohol Preps
4. Pressure Infuser, BP Cuff, or IV Pump

**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: INLINE OROTRACHEAL INTUBATION OF THE TRAUMA PATIENT**

NAME_____ DATE_____

LEVEL: _____Paramedic _____ Intermediate _____Basic

| STEPS | 1st Test | 2nd Test | 3rd Test |
|---|---|---|---|
| A. List the indications for endotracheal intubation, with emphasis on situations in addition to cardiac arrest. | | | |
| B. List the equipment required to perform endotracheal intubation. | | | |
| C. List the potential complications of endotracheal intubation. | | | |
| D. Open the airway with C-Spine precautions. | | | |
| E. Pre-oxygenate patient during preparations to intubate. | | | |
| F. Demonstrate the performance of cricoid pressure. | | | |
| G. Assemble equipment. | | | |
| H. Insert Laryngoscope | | | |
| I. Elevate the mandible | | | |
| J. Insert the ET tube | | | |
| K. Remove the stylet | | | |
| L. Document ETT at 20-22 cm at front teeth. | | | |
| M. Inflate the cuff with 5 to 10 ml of air. | | | |
| N. Ventilate the patient. | | | |
| O. Confirm tube placement, using the End Tidal $CO_2$ Detector for patients with a perfusing rhythm, or the Esophageal Detection Device for patients in cardiac arrest. Be able to discuss the indications and limitations of each device. | | | |
| a. *NOTE: EDDs will fill more slowly in humans than in manikins | | | |
| b. Compress EDD first, then place it on the ETT before ventilating pt. | | | |
| c. If bulb fills in <5 seconds, ETT is likely successful | | | |
| d. If bulb fails to fill, or takes >5 seconds, or fills with emesis, esophageal placement is probable. | | | |
| e. Contraindicated in pregnancy or children less than 5 y/o or 20 kg. | | | |
| P. Confirm tube placement with at least 5 methods of verification and document the outcomes. | | | |
| Q. Secure tube in place & reassess placement after any movement of patient. | | | |
| R. Apply cervical collar. | | | |

EQUIPMENT:

1. Proper size Endotracheal tube
2. Stylet
3. Laryngoscope Blade & handle
4. Magill forceps
5. 10 ml. syringe
6. Suction equipment
7. Stethescope
8. Gloves & Eye protection
9. Commercial tube holder or proper taping method.
10. Confirmation Device
11. C-collar
12. Adult Intubation Manikin

When preparing for this skill evaluation, be sure that you are able to meet the objectives A, B, C, G, and O. If you need a reminder, the material is readily available in any standard textbook.

**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: NASOTRACHEAL INTUBATION**

NAME_____ DATE_____

LEVEL: _____Paramedic

| STEPS | 1st Test | 2nd Test | 3rd Test |
|---|---|---|---|
| A. List the indications for nasotracheal intubation. | | | |
| B. List the equipment required to perform endotracheal intubation. | | | |
| C. List the potential complications of endotracheal intubation. | | | |
| D. Open the airway. | | | |
| E. Pre-oxygenate patient during preparations to intubate. | | | |
| F. If patient's condition is potentially due to trauma, maintain C-spine precautions. | | | |
| G. Assemble equipment, select the appropriate ET tube. (6.0 usually too small for most adults, resulting in an unsuccessful intubation) | | | |
| H. Insert the ET tube into the most patent nostril. | | | |
| I. Pass the tube along the floor of the nostril until it passes into the back of the throat. | | | |
| J. Advance tube slowly forward monitoring air flow via tube and from the patient's mouth. (Use BAAM device if available, listen for increased sounds of whistle) | | | |
| a. If the tube passes into the esophagus, air flow stops via the tube and continues from the mouth. | | | |
| b. If the tube passes into the trachea, often the patient will cough. Air will continue via the tube but stop via the mouth, except for slight flow. Asking the patient to take a deep breath can also help pass the tube. | | | |
| c. If using an endotrol, flexing the tube with its control loop will help align it with the trachea. | | | |
| d. Once the tube is in the trachea, inflate the cuff. Tape the ETT in place after asssuring proper position. | | | |
| K. Inflate cuff with 5 to 10 ml of air. If using BAAM, there should be a definite increase in the sound of the whistle. (Document and remove BAAM) | | | |
| L. Ventilate the patient. | | | |
| M. Confirm tube placement, specifying at least 5 methods of verification | | | |
| N. Secure tube in place & reassess placement after any movement of patient. | | | |
| O. Consider application of a cervical collar. | | | |

EQUIPMENT:

1. Proper size Endotracheal tube (7.0, 7.5, 8.0)
2. Lubricant
3. Laryngoscope Blade & handle
4. Magill forceps
5. 10 ml syringe
6. Suction equipment
7. Stethescope
8. Gloves & Eye protection
9. Commercial tube holder or proper taping method
10. Confirmation Device
11. C-collar
12. Adult Intubation Manikin
13. BAAM device

When preparing for this skill evaluation, be sure that you are able to meet the objectives A, B, C, and M. If you need a reminder, the material is readily available in any standard textbook.

**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: NEEDLE CRICOTHYROTOMY**

NAME_____ DATE_____

LEVEL: _____Paramedic

| **STEPS** | **1st Test** | **2nd Test** | **3rd Test** |
|---|---|---|---|
| A. List the indications for Needle Cricothyrotomy. | | | |
| B. List the equipment required to perform Needle Cricothyrotomy. | | | |
| C. List the potential complications of Needle Cricothyrotomy. | | | |
| D. Attempt to oxygenate patient during preparations to cric. | | | |
| E. Assemble equipment. | | | |
| F. Place patient in supine position. | | | |
| G. Palpate cricothyroid membrane. | | | |
| H. Preparea with betadine wash. | | | |
| I. Attach angiocath to syringe. | | | |
| J. Insert needle (midline over cricothyroid membrane) at a 45 degree angle, directed caudally. | | | |
| a. If dealing with a trauma patient, stabilize cervical spine and insert needle at 90 degree angle. | | | |
| K. Aspirate for air. | | | |
| L. Advance catheter and needle into trachea. | | | |
| M. Withdraw the needle. | | | |
| N. Attach catheter to oxygen tubing. | | | |
| O. Ventilate the patient. | | | |
| P. Confirm placement, specifying at least three methods of verification. | | | |
| Q. Secure tubing. | | | |
| R. Suction oropharynx. | | | |

EQUIPMENT
1. Syringe
2. 10 or 14 gauge angiocath
3. Oxygen tubing with Y connector or side port cut in tubing for controlling air flow.
4. Oxygen source with rate of 15-30 LPM, 50 psi.

When preparing for this skill evaluation, be sure that you are able to meet the objectives A, B, C, and P. If you need a reminder, the material is readily available in any standard textbook

**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: CHEST DECOMPRESSION**

NAME_____ DATE_____

LEVEL: _____Paramedic _____ Intermediate

| **STEPS** | **1st Test** | **2nd Test** | **3rd Test** |
|---|---|---|---|
| A. List the signs and symptoms which identify a tension pneumothorax. | | | |
| B. Administer high concentration Oxygen | | | |
| C. If wound is a sucking chest wound, tape nonporous dressing on 3 sides so that air can escape. | | | |
| D. Locate the 2nd or 3rd intercostal space in the mid-clavicular line on the affected side. Locate site on the affected side just above the rib margin. | | | |
| E. Prepare the skin. | | | |
| F. Remove plastic cap from hub of needle so that air can escape. | | | |
| G. Insert the needle at a 90 degree angle into the pleural cavity, just above the rib margin. | | | |
| H. Advance the catheter while holding the needle in position. Withdraw the needle. | | | |
| I. Securely tape the catheter in place without kinking it. | | | |

EQUIPMENT

1. 14 gauge over-the-needle catheter. The minimum needle length should be 2 ¼", but patients with an obese or muscular body make up will require a longer catheter to facilitate proper decompression.
2. Safety glasses and gloves
3. Stethoscope
4. Alcohol preps
5. Tape

When preparing for this skill evaluation, be sure that you are able to meet the objectives A and B. If you need a reminder, the material is readily available in any standard textbook

**ADULT PROTOCOL SKILL EVALUATION**
**SUBJECT: COMPLEX MEDICATION ADMINISTRATIONS**

NAME_____ DATE_____

LEVEL: _____ Paramedic _____ Intermediate _____ Basic

| **STEPS** | **1st Testing Comments** | **2nd Testing Comments** |
|---|---|---|
| **AMIODARONE** | | |
| A. List the indications for Amiodarone, and the "six rights". | | |
| B. List the equipment required to draw up Amiodarone. | | |
| C. List the problems with drawing up Amiodarone & administration. | | |
| D. Discuss contraindications & precautions regarding Amiodarone. | | |
| E. Use large bore (i.e., 19 ga.) needle to draw up Amiodarone to prevent foaming. | | |
| F. Do **NOT** invert the ampule liquid (liquid will run out). | | |
| G. Discuss the differences in administration in cardiac arrest vs. non-arrest. | | |
| **MIDAZOLAM** | | |
| A. List the indications of MIDAZOLAM, and the "six rights". | | |
| B. Discuss contraindications & precautions regarding MIDAZOLAM. | | |
| C. Discuss the issue of drug concentration (10 mg/2m) with MIDAZOLAM. | | |
| D. Using a TB syringe, demonstrate drawing up an appropriate amount of simulated MIDAZOLAM, and correct administration: 0.4 ml = 2 mg 0.8 ml = 4 mg | | |
| E. Discuss timing for administration of MIDAZOLAM (over 1-2 minutes). | | |
| **MARK I KITS** | | |
| A. List the indications of Mark I Kit or DuoDote, and the "six rights".<br>B. Explain the difference between a Mark I Kit and a DuoDote, and how to use each. Note: both have same meds and same doses. Mark I Kits are in the CHEMPACKs; DuoDotes are in the Drug Bags. | | |
| C. Don appropriate PPE. If pt. or public safety worker exhibits symptoms of nerve gas exposure, utilize Mark 1 Kit. | | |
| D. Remove Mark 1 simulation kit from protective pouch. | | |
| E. Hold unit by plastic clip. | | |
| F. Remove AtroPen Simulator from slot #1 of the plastic clip. The yellow safety cap will remain in the clip & the AtroPen will now be armed. DO NOT hold unit by GREEN tip. The needle ejects from the GREEN tip. | | |
| G. Grasp unit & position green tip of AtroPen Simulator on victim's outer thigh. | | |
| H. Push firmly until auto-injector fires. | | |
| I. Hold in place for 10 seconds to ensure Atropine has been fully delivered. | | |
| J. Remove 2-PAM Cl Combo Pen Simulator from slot #2 of the plastic clip. The gray safety cap will remain in the clip, and the Combo Pen will now be armed. DO NOT hold the unit by the BLACK tip. Needle ejects from the black tip. | | |
| K. Grasp unit and position black tip of the Combo Pen simulator on victim's thigh. | | |
| L. Push firmly until auto-injector fires. | | |
| M. Hold in place for 10 seconds to ensure 2-PAM has been properly delivered. | | |
| **N. If nerve agent symptoms are still present after 15 minutes, repeat injections. If symptoms sill exist after an additional 15 minutes, repeat injection for a third time. If after the third set of injections, symptoms remain, do not give any more antidotes. Seek medical help.** | | |

| **EPINEPHRINE 1:1,000 30 ml MULTI-DOSE VIAL** | | |
|---|---|---|
| A. List the indication(s) for subcutaneous administration of Epinephrine | | |
| B. Demonstrate or voice infection precautions. | | |
| C. Select the proper vial and concentration | | |
| D. Check the medication for expiration date and for cloudiness or discoloration. | | |
| E. Calculate the volume of medication needed. | | |
| F. Select a TB syringe and needle of appropriate gauge. | | |
| G. Leave the cap on the needle and attach it to the syringe. | | |
| H. Prepare the vial:<br>Remove cap<br>Cleanse with alcohol prep<br>Inject air and withdraw proper amount of medication | | |
| I. Hold the syringe with the needle pointed straight up and depress the plunger until all air is ejected. | | |
| J. Check the label and desired dosage again. | | |
| K. Protect the needle until ready to administer the medication. | | |
| L. Dispose of used ampule and remaining glass in appropriate container. | | |
| M. Gently grasp the skin over the injection site and pinch it away from the underlying muscle. | | |
| N. Insert the needle into the injection site at a 45 degree angle to the skin with the bevel up. Insert the needle quickly to minimize any pain. | | |
| O. Pull back slightly on the plunger to ascertain that there is no blood return. Presence of blood return indicates that if the medication were given, it would be injected intravenously. | | |
| P. Inject the contents of the syringe at a slow, steady rate. | | |
| Q. Withdraw the needle quickly and smoothly at the same angle in which it was inserted. | | |
| R. Apply direct pressure over the injection site with a sterile 2x2, then apply a sterile adhesive strip. | | |
| S. Dispose of equipment appropriately. | | |
| T. Note any effect of medication on the patient. | | |
| U. Document on run report - time medication given; name, concentration, and dosage given; and medication's effect on patient. | | |
| **EPIPEN ADMINISTRATION** | | |
| A. Evaluate the patient, with attention to S&S of anaphylaxis. | | |
| B. Demonstrate or voice infection precautions. | | |
| C. Obtain the EpiPen auto-injector. (Indicate Adult / Pedi doses) | | |
| D. Check the medication for expiration date and for cloudiness or discoloration. | | |
| E. Remove the safety cap. | | |
| F. Select the injection site. | | |
| G. Push the injector firmly against the site. | | |
| H. Properly discard the injector. | | |
| I. Monitor the patient and record the results of the treatment. | | |
| J. Discuss precautions and side effects | | |
| **DEXTROSE 50% & 25%** | | |
| A. List the indication for use | | |
| B. Demonstrate or voice infection precautions. | | |
| C. Indicate dose and administration Adults/Peds | | |
| D. Check the medication for expiration date and for cloudiness or discoloration. | | |
| E. Discuss precautions and side effects (administer in continuously running IV) | | |

| | | |
|---|---|---|
| **GLUCAGON** | | |
| A. List the indication for use | | |
| B. Demonstrate or voice infection precautions. | | |
| C. Indicate dose and administration Adults/Peds | | |
| D. Check the medication for expiration date and for cloudiness or discoloration. | | |
| E. Discuss precautions and side effects | | |
| **NALOXONE** | | |
| A. List the indication for use | | |
| B. Demonstrate or voice infection precautions. | | |
| C. Indicate dose and administration Adults/Peds | | |
| D. Check the medication for expiration date and for cloudiness or discoloration. | | |
| E. Discuss precautions and side effects | | |

Revised: 8/09

## DRUG BAG EXCHANGE PROGRAM

**PURPOSE**

To administer and monitor a drug bag exchange program between participating Fire/EMS/ Private Ambulance departments and hospitals to improve the level and quality of pre-hospital care by ensuring that participating members are in full-service at all times.

**DRUG BAG EXCHANGE COMMITTEE**

| | |
|---|---|
| Co-Chairpersons: | 1 Hospital EMS coordinator |
| | 1 Hospital pharmacy representative from each participating county |
| Members: | EMS Coordinator from each participating hospital |
| | Pharmacy representative from each participating hospital |
| | Any interested GMVEMS Council member |

## OPERATING GUIDELINES

**GENERAL**

- There are two types of drug bags: **ALS/BLS** and **BLS** (fanny pack style).
- All drug bags, both ALS/BLS and BLS, are the property of the Greater Miami Valley EMS Council.
- There is an initiation fee for each new bag added to the program.
- There is an annual maintenance fee for each ALS/BLS bag and BLS bag.
- There is an approved policy for the replacement of lost or stolen drug bags (see Addendum A).
- To maintain the integrity of the drug bag contents, pharmacy departments seal stocked drug bags with a blue plastic device. The only time the seal should be broken is for the administration of pre-hospital emergency medical treatment by approved EMS personnel. After pre-hospital emergency medical treatment use, the drug bag should be cleaned and re-sealed with the red plastic device contained inside the drug bag.
- The following action will be taken for any department found to be in non-compliance with the Drug Bag Exchange Program Operating Guideline regarding opening and resealing the drug bag:
    - Notification of the Fire Chief, EMS Administrator, or Private Ambulance Administrator.
    - The governing agency, i.e. city council, trustees, OMTB for private ambulance service, etc., will be notified that action is being initiated for the Fire/EMS/Private ambulance service.
    - All drug bags will be removed from all locations of said Fire/EMS/Private ambulance service.
    - The GMVEMS Council will distribute written notification to the following that the said service is in violation of the operating policy of the Drug Bag Exchange Program:
        - Medical Director
        - Regional Physician Advisory Board
        - OH State Pharmacy Board
        - OH Division of EMS
        - All hospitals participating in the drug bag exchange program
- GMVEMS Council maintains an information database for all EMS personnel authorized to participate in the Drug Bag Exchange Program.
- Rosters with certification expiration dates for EMS providers are available via an online database for review and updates.

## PARTICIPATION REQUIREMENTS

- Active membership in the GMVEMS Council.
- Medical advisor approval for the use of the GMVEMS Council Operating Protocols. Approval consists of a signed, notarized letter, which is attached to the drug license renewal application form with a copy submitted to Council. Notarized letter is not required for renewal unless new medication or a change in Medical Director from previous year.
- Signed agreement to abide by the GMVEMS Council Operating Guidelines for the Drug Bag Exchange Program Signed agreement to abide by the GMVEMS Council Operating Guidelines for the Drug Bag Exchange Program.

- Agreement to complete an annual skills check and annual written test between 1 January and 31 May unless otherwise scheduled by Council (see Non-Compliance Procedures).
- Maintain all drugs in a clean and temperature-controlled environment per Rule 4729-33-03(E) of the OH State Pharmacy Board Administrative Code. The rules can be seen at: http://pharmacy.ohio.gov/rules/4729-33-03.pdf
- The ideal temperature span is 59-86 degrees F.
- In order to utilize an ALS/BLS or BLS drug bag in the pre-hospital emergency setting, the following equipment should be immediately available:
  - BLS Provider:
    - Oxygen
    - Suction (non-powered is acceptable)
    - AED & Intubation Equipment (only if Medical Advisor approved)
    - Submission of a copy of the annual OH State Board of Pharmacy drug license(s) for each location(s) with vehicles that carry drug bags no later than 1 February ***to GMVEMS Council***
  - ALS Provider:
    - Oxygen
    - Suction (non-powered is acceptable)
    - Monitor/Defibrillator or AED & Intubation Equipment
    - Submission of a copy of the annual OH State Board of Pharmacy drug license(s) for each location(s) with vehicles that carry drug bags no later than 1 January to GMVEMS Council***.*** *Council will verify all licenses no later than January 1st.*
    - ***Submission of a copy of a current DEA license to GMVEMS Council office. It is the responsibility of the Agency to keep the DEA license current and submit a renewed copy to Council.***
    - EMS providers are required to inventory each opened pouch, discard any used sharps and clean any contaminants from bag used and apply a red seal before exchanging for replacement bag. Any discrepancies (missing meds, expired meds, wrong meds or dose, altered or tampered meds, drug bag number discrepancy, etc.) that are identified shall be reported to the GMVEMSC using the Drug Bag Discrepancy Report. (See discrepancy procedure)

The EMS provider will discard any used sharps and clean any contaminants from bag used and will then take the red seal from inside the bag (supplied by pharmacy when restocking the ALS/BLS or BLS bag) and seal the appropriate bag used. The red seal will be looped through the proximal portion of the zipper tab (not the outermost portion of the zipper tab).

## LEVELS OF PARTICIPATION

**Paramedic Level**

- Each drug bag consists of a navy, standard issue drug bag. A Paramedic can access any of the compartments of bag to obtain medications per his/her protocol.
- Each standard issue bag is labeled with a metal tag from 850 – up.
- Upon completion of a transport, the entire bag is exchanged at the receiving hospital *with the appropriate paperwork.*
- When you open a controlled drug compartment, keep the blue seal in your possession until you have verified the contents are accounted for. Once you have verified the contents, seal compartment with RED tag. DO NOT throw blue seals in drug bag.

**Intermediate Level**

- *A side compartment labeled "intermediate"*
  The Intermediate can access all outside compartments to obtain medications per their protocol. They cannot access the Center inside compartment or Center Controlled medication compartment.
  **When you open a controlled drug compartment, keep the blue seal in your possession until you have verified the contents are accounted for. Once you have verified the contents, seal compartment with RED tag. DO NOT throw blue seals in drug bag.**

**Basic Life Support**

- **The RED BLS compartment on a ALS/BLS bag** or BLS fanny-pack style bag will carry the following medications ONLY: Nitrostat, EpiPen, EpiPen Jr. and baby Aspirin. The Basic EMT can only access this compartment to treat his/her patient per protocol.
- Each bag is labeled with a numeric code.
- Upon completion of a transport, the bag is exchanged at the receiving hospital *with the appropriate paperwork.*
- DO NOT throw the blue seal in drug bag. Once you have verified the contents and seal compartment with RED tag you can then dispose of blue seal.

**EXCHANGE PROCESS**

- Each department is assigned to a "home" hospital. The assigned hospital is the central resource for initial fulfillment of medications for the drug bags and wholesale exchanges/replacement/additions as required by revisions to the GMVEMS Council Standing Orders/Protocols. Under normal operating parameters, drug bags can be exchanged at any participating hospital.
- ALS/BLS bags may be exchanged one-for-one with another ALS/BLS bag. BLS bags may be exchanged one-for-one with another BLS bag.
- Each hospital designates a specific location for the exchange of drug bags. EMS personnel are **required** to complete the Sign In/Out log when exchanging a drug bag.
- EMS Providers are responsible for ensuring that all blue seals are intact when logging out an exchanged bag.
- When you open a controlled drug compartment, keep the blue seal in your possession until you have verified the contents are accounted for. Once you have verified the contents, seal compartment with RED tag. DO NOT throw blue seals in drug bag.

**Documentation of Drug Usage**

- Morphine, Versed and Valium are scheduled drugs, which means they must be tracked from the time they are dispensed into the drug bag through the time of administration.
- To insure the medications are properly accounted for, all Intermediate/Paramedics will document:
    - The drug name
    - The amount used
    - The amount wasted
    - The signature of the two witnesses if wastage (the person wasting the medication can sign as a witness).
- The GMVEMSC run sheets have a dedicated area for this documentation and required signature lines. Those using other ***types*** of run sheets should document the above information and the required signatures. **Some hospitals also require the use of the GMVEMSC approved Controlled Drug Usage Form in addition to documentation on the run sheet. This GMVEMSC approved form must be filled out for any scheduled drug use, even if there is no wastage**. This information shall be on both the original EMS department form and the hospital copy for reference if needed.

***WASTED DRUG PROCEDURE***

- Morphine, Versed and Valium are scheduled drugs. If a medication is partially administered then all of the unused portion must be accounted for.
- The provider shall have a nurse or physician witness the waste of the drug. A pharmacist can also be a witness if a nurse or physician is not available。Using another EMS provider to witness wastage should be avoided unless the EMS provider cannot obtain a nurse, physician, or pharmacist to witness same. If an EMT does witness the wastage, he/she shall be at the same certification level or higher.
- To insure the medications are properly accounted for, all Paramedics and Intermediates will document:
    - The drug name
    - The amount used
    - The amount wasted
    - The signature of the two witnesses

- One witness will be the paramedic or Intermediate wasting the medication and the second witness signature will be the nurse/physician/pharmacist who witnessed the disposal of the medication. Both witnesses will sign the run sheet.
- The GMVEMSC run sheets have a dedicated area for this documentation and required signature lines. Those using other *types* of run sheets should document the above information and the required signatures. Some hospitals also require the use of the GMVEMSC approved Controlled Drug Usage Form in addition to documentation *on* the run sheet. This GMVEMSC approved form must be filled out for any scheduled drug use even if there is no wastage. This information shall be on both the original EMS department form and the hospital copy for reference if needed.

**GENERAL NON-COMPLIANCE PROCEDURES**

- Each department and department medical director(s) will be notified that the annual written test and skills check-off has not been completed within the prescribed time period.
- The Ohio State Board of Pharmacy will be notified that a department or individual members of a department have not completed the annual written test and skills check-off within the prescribed time period.
- Hospital EMS coordinators and pharmacy departments will receive a list of departments or individuals within a department that are not in compliance with the operating guidelines. At the end of the testing season, if a department does not have 100% of their personnel completing both skills and written test and information about individual reasons for non-compliance noted in the Standing Orders database, then appropriate action, up to and including the removal of department from the Drug Bag program by the chair of the drug bag committee, may be taken.
- If copy of drug license(s) is not received by due date, GMVEMS Council notifies EMS department medical director. GMVEMS Council reserves the right to initiate the non-compliance action process for any Fire/EMS/Private Ambulance service ~~t~~hat does not provide documentation for drug license(s) renewal.
- If a department does not have a current DEA license (it is the responsibility of the EMS Department to submit a copy of the DEA renewal license when the license on file has expired), GMVEMS Council notifies EMS department medical director. GMVEMS Council reserves the right to initiate the non-compliance action process for any Fire/EMS/Private Ambulance service ~~t~~hat does not provide documentation for drug license(s) renewal.

**DRUG BAG DISCREPANCIES**

- **EMS providers are required to inventory each opened pouch prior to applying the red seal.**
- All discrepancies (missing meds, expired meds, wrong med or dose, altered or tampered meds, drug bag number discrepancy, etc.) that are identified shall be reported to the GMVEMSC using the Drug Bag Discrepancy Report (Addendum B).
- **If at any time, an EMS provider encounters a discrepancy he/she will:**
    - Notify his/her EMS Officer of the discrepancy.
    - If the discrepancy was discovered after opening the bag, retain the blue seal and the hospital sticker that was attached to the drug bag in question.
    - If the EMS provider is at the hospital, s/he will log the bag in using the normal procedure at that hospital.
    - S/he will advise the pharmacist or EMS Coordinator of the discrepancy and that s/he will be initiating the Discrepancy form as described below (pharmacist may request a copy of the Discrepancy form).
    - The EMS Officer may contact the EMS Coordinator if assistance is needed.

**Discrepancies Involving Controlled Drugs and/or Potential Tampering:**

- When an issue arises concerning:
    - A controlled drug (Valium, Versed, or Morphine)
    - A stolen, missing or lost bag
    - Any medication that appears to have been altered or tampered with

- A collaborative effort between the EMS organization/provider and the Hospital EMS Coordinator/Pharmacist shall be made in an attempt to resolve the issue.
- If the issue cannot be resolved the following steps shall be taken:
    - If the discrepancy was discovered by the EMS organization/provider, the person designated by the organization/provider shall comply with the requirements of OAC 4729-9-15 and GMVEMSC requirements as indicated below.
    - If the discrepancy was discovered by the hospital, the person designated by the hospital shall comply with the requirements of OAC 4729-9-15 and GMVEMSC requirements as indicated below.
- Required reporting for unresolved issued involving Controlled Drug or potential/suspected tampering or lost or stolen drug bags pursuant Federal and State Laws and GMVEMSC Protocol:
    - Contact the Ohio State Board of Pharmacy by telephone at (614) 466-4143. Advise them you want to report a dangerous drug discrepancy. They will connect you with the appropriate person. (OAC 4729-9-15)
    - File a report with the appropriate law enforcement authorities (ORC 2921.22).
    - Notify the Drug Enforcement Agency (DEA) within 30 days of discovery using DEA Form 106 available electronically at: https://www.deadiversion.usdoj.gov/webforms/app106Login.jsp a 30-day extension may be requested in writing from the DEA. (CFR 1301.76(b)).
    - Submit a completed GMVEMSC Drug Bag Discrepancy Report located at Addendum #B, with appropriate supporting documentation, to the GMVMESMC.

**Discrepancies Not Involving Controlled Drugs and/or Potential Tampering**

- Examples may include:
    - Non-controlled drugs not in the bag
    - Wrong number of medications doses
    - Wrong drug concentration
    - Expired medications found
    - No expiration date on tag
    - Medications improperly labeled
    - Empty vials/packaged left in bag
    - Unsealed medications
    - Wrong medication administered
    - Unsealed pouch discovered
    - Bag logged out with red seal (used bag)
- If discovered by EMS, the EMS Officer will initiate the Discrepancy form. He/she shall provide a copy of the form and the Blue Seal to the Hospital EMS Coordinator and shall fax a copy of the report to the GMVEMSC (937.586.3699).
- If the Hospital discovers the discrepancy, the EMS Coordinator will initiate the Discrepancy Form and submit to GMVEMSC. If the EMS Coordinator is able to determine which EMS agency/hospital is responsible for the discrepancy, the agency/hospital will be notified and will receive a copy of the Discrepancy Form and the Blue Seal if applicable.

**The GMVEMSC will:**

- Maintain a record of all discrepancies that occur.
- Follow up with the agencies involved as needed.
- Advise the Drug Bag Chairperson of any and all discrepancies and action taken.

**The Drug Bag Committee Chairperson will:**

- Will report all at the bi-annual Drug Bag Committee meetings for discussion and resolutions to discrepancies encountered.
- Will assist the Council and or affected departments with any issues or questions that may result.

**DRUG BAG BLUE SEALS**

- **Blue seals**:
    - Blue seals are used by the pharmacy that inventories and restocks the ALS/BLS drug bags. The blue seals will have a hospital sticker attached to the seal that identifies the hospital and pharmacist that inventoried the bag and the expiration date of the next drug to expire. The inner compartment of the ALS bag and Intermediate will be sealed with a blue seal and will have the expiration date noted. The blue seal will be looped through the proximal portion of the zipper tab (not the outermost portion of the zipper tab). EMS should verify the blue seal is intact and has an expiration date before accepting. When EMS opens a controlled drug compartment keep the blue seal in your possession until you have verified the contents are accounted for. Once you have verified the contents, seal compartment with RED tag. ***DO NOT throw used blue seals in drug bag.***

- **Red Seals:**
    - Red seals identify ALS/BLS bags as being used. EMS providers are required to inventory each opened pouch, discard any used sharps and clean any contaminants from bag used and will then take red seal from the inside compartment (supplied by pharmacy when restocking the ALS/BLS bag and seal the appropriate bag used. The red seal will be looped through the proximal portion of the zipper tab (not the outermost portion of the zipper tab).

Hospital Pharmacies should use the same style colored seals to maintain continuity of the system. Hospital pharmacists can purchase these seals through the GMVEMSC office.

## ADDENDUM A

### Lost or Stolen Drug Bag Policy

RE: Lost or Stolen Drug Bags
APPROVED: June 1994
PURPOSE: To provide a uniform mechanism for the investigation and reporting of lost or stolen drug bags.

EMS DEPARTMENT SHALL:

- Develop and implement an internal investigation mechanism for lost or stolen drug bags. The internal investigation mechanism should include:
    1. Determine if drug bag was left at the scene.
    2. Determine if drug bag was not exchanged on last run.
    3. Determine if drug bag is in the wrong vehicle.
    4. Interview all personnel who had access to the drug bag.

The GMVEMSC will seek the assistance of the Drug Bag Co-Chair to check with all hospitals to determine if the bag might be in inventory or be alerted if it shows up at one of the hospitals.

EMS Officer will Initiate the Drug bag discrepancy Form and follow instructions for reporting lost or stolen drug bags.

Completed paperwork and reports will be submitted to GMVEMSC.

The GMVEMSC will contact the hospital EMS Coordinator with whom the EMS Department is assigned to work out a drug bag replacement. *The EMS Coordinator will contact GMVEMSC for a drug bag replacement after all paperwork is submitted and GMVEMSC will assess a fee for replacement bag to be paid for by the EMS Department receiving the replacement bag.*

**ADDENDUM B**

**GMVEMSC Drug Bag Discrepancy Report**

If at any time an EMS provider encounters a discrepancy he/she will notify their EMS Officer of the discrepancy. If the discrepancy was discovered after opening the bag, retain the blue seal and the hospital sticker that was attached to the drug bag in question. If the EMS provider is at the hospital, they will log the bag in using the normal procedure at that hospital. They will advise the pharmacist or EMS Coordinator of the discrepancy and that they will be initiating the Discrepancy form as described below (pharmacist may request a copy of the Discrepancy form).

Date of report:_____ Bag Number:_____ Date Discrepancy discovered:_____
Discovered by:_____ Hospital/EMS Dept making discovery:_____

Have blue Hospital seal? YES/NO If yes - Attach seal to report
**Tracking:**
Date bag was logged out:_____ from (hospital)_____ To (ems agency)_____ Date Bag turned in: _____ to (hospital)_____
**Description of the discrepancy**: (Attach addendum if additional space needed)

**Describe efforts to resolve the discrepancy:** (Attach addendum if additional space needed)

Was the discrepancy satisfactorily resolved? _____ If not, what steps are to be taken:_____

Who will be responsible for any required reporting:_____
**Reporting requirements:**
Was a police report filed? _____ Date: _____ By whom? _____

Was a DEA report filed? _____ Date: _____ By whom? _____

Required documents submitted to GMVEMSC By:_____ Date:_____

For Drug Bag committee use:

| | | | |
|---|---|---|---|
| Wrong Med stocked | | Bag logged out with red seal | |
| Expired meds found | | Empty vials/packages found | |
| Wrong dose packaged | | Open pouch found | |
| Missing Meds | | Unsealed bottles found | |
| Wrong number packaged | | Med found in wrong compartment | |
| No exp date on tag | | Wrong med administered | |
| Atrovent/Albuterol not labeled | | Lost or stolen bag | |
| Damaged medications | | Other: | |
| Other: | | | |

***GMVEMSC – White*** ***Pharmacy - Yellow*** ***EMS Department - Blue***

**ADDENDUM C**
**OAC 4729-9-15**

**Report of theft or loss of dangerous drugs, controlled substances, and drug documents.**

(A) Each prescriber, terminal distributor of dangerous drugs, or wholesale distributor of dangerous drugs shall notify the following upon discovery of the theft or significant loss of any dangerous drug or controlled substance, including drugs in transit that were either shipped from or to the prescriber, terminal distributor of dangerous drugs, or wholesale distributor of dangerous drugs:

(1) The state board of pharmacy, by telephone immediately upon discovery of the theft or significant loss;

(2) If a controlled substance, the drug enforcement administration (DEA) pursuant to section 1301.76(b), Code of Federal Regulations;

(3) Law enforcement authorities pursuant to section 2921.22 of the Revised Code.

(B) Controlled substance thefts must also be reported by using the federal DEA report form whether or not the controlled substances are subsequently recovered and/or the responsible parties are identified and action taken against them. A copy of the federal form regarding such theft or loss shall be filed with the state board of pharmacy within thirty days following the discovery of such theft or loss.

(1) An exemption may be obtained upon sufficient cause if the federal form cannot be filed within thirty days.

(2) A request for a waiver of the thirty-day limit must be requested in writing.

(C) Each prescriber, terminal distributor of dangerous drugs or wholesale distributor of dangerous drugs immediately upon discovery of any theft or loss of:

(1) Uncompleted prescription blank(s) used for writing a prescription, written prescription order(s) not yet dispensed, and original prescription order(s) that have been dispensed, shall notify the state board of pharmacy and law enforcement authorities.

(2) Official written order form(s) as defined in division (Q) of section 3719.01 of the Revised Code shall notify the state board of pharmacy and law enforcement authorities, and the drug enforcement administration (DEA) pursuant to section 1305.12(b), Code of Federal Regulations.

**ADDENDUM D**
**OAC 4729-33-03 Security and storage of dangerous drugs**

(A) Overall supervision and control of dangerous drugs is the responsibility of the responsible person. The responsible person may delegate the day-to-day tasks to the emergency medical service (EMS) organization personnel who hold appropriate certification to access the dangerous drugs for which they are responsible.

(B) All dangerous drugs must be secured in a tamper-evident setting with access limited to EMS personnel based on their certification status except for sealed, Tamper-evident solutions labeled for irrigation use. All registrants shall provide effective and approved controls and procedures to deter and detect theft and diversion of dangerous drugs.

(C) Only emergency medical technician-paramedics, emergency medical technician-intermediates, registered nurses, physicians, and pharmacists who are associated with that EMS organization may have access to any controlled substances maintained by the EMS organization. Other persons employed by the EMS organization may have access to controlled substances only under the direct and immediate supervision of an emergency medical technician-paramedic, an emergency medical technician-intermediate as defined in rules 4765-16-01 and 4765-16-02 of the Administrative Code, a registered nurse, or a physician in emergency situations.

(D) Administration of dangerous drugs by EMS personnel is limited to the scope of practice, as determined by the state board of emergency medical services, for the individual's certification level and the protocols as established by the medical director or when the individual is acting within their certification level pursuant to direct prescriber's orders received over an active communication link.

(E) All dangerous drugs will be maintained in a clean and temperature-controlled environment.

(F) Any dangerous drug that reaches its expiration date is considered adulterated and must be separated from the active stock to prevent possible administration to patients.

(G) Any non-controlled dangerous drug that is outdated may be returned to the supplier where the drug was obtained or may be disposed of in the proper manner.

(I) Destruction of outdated controlled substances may only be done by a state board of pharmacy agent or by prior written permission from the state board of pharmacy office.

(J) Destruction of partially used controlled substances can be accomplished, with the appropriate documentation, by two licensed health care personnel, one of which must have at least an emergency medical technician-intermediate, as defined in rules 4765-16-01 and 4765-16-02 of the Administrative Code, level of training.

(K) Any loss or theft of dangerous drugs must be reported upon discovery, by telephone, to the state board of pharmacy, local law enforcement and, if controlled substances are involved, to the drug enforcement administration. A report must be filed with the state board of pharmacy of any loss or theft of the vehicle or storage cabinets containing dangerous drugs used by the EMS organization.

(L) Any dangerous drug showing evidence of damage or tampering shall be removed from stock and replaced immediately.

# GREATER DAYTON AREA HOSPITAL ASSOCIATION

GREATER MIAMI VALLEY EMERGENCY MEDICAL SERVICES COUNCIL

**GREATER MONTGOMERY COUNTY FIRE CHIEFS' ASSOCIATION**

## POLICY STATEMENT FOR TEMPORARY REROUTING OF EMERGENCY PATIENTS

To avoid misunderstanding, all parties are cautioned to use the word **"rerouting," never "closed."**

Patients are never rerouted for patient's economic considerations.

The following patients are NOT rerouted:

**RESPIRATORY AND/OR CARDIAC ARREST**
**CARDIAC & STROKE ALERT CRITERIA PATIENTS**
**MAJOR TRAUMA**
**MATERNITY**
**SERIOUS BURNS**
**HIGH RISK NEONATAL**
**DIALYSIS PATIENT**
**AIR MEDICAL TRANSPORT**
**HYPERBARIC**
**RECENTLY DISCHARGED PATIENTS (48 hours)**

When conditions exist that may hinder the timely treatment of additional emergency cases, the Designated Hospital Official will declare the "Rerouting of Emergency Patients to be in Effect." The hospital will update the "GDAHA SurgeNet Web Page." The Hospital will notify their appropriate dispatch center, identify the hospital, name and title of caller, as needed. The hospital will then notify (by prior agreement, this can be via the SurgeNet Web Page) at least the following organizations:

1. The emergency department of each metropolitan hospital:
   a. The Children's Medical Center
   b. Good Samaritan Hospital
   c. Grandview Medical Center
   d. Kettering Medical Center
   e. Miami Valley Hospital
   f. Miami Valley Hospital South
   g. Southview Medical Center
   h. Sycamore Medical Center

2. The appropriate emergency medical services – refer to individual hospital call list

3. The emergency department of non-metropolitan hospitals:
    a. Wayne Hospital, Greenville
    b. Atrium Medical Center, Middletown
    c. Wilson Memorial Hospital, Sidney
    d. Springfield Regional Medical Center – High Street Campus (Community)
    e. Springfield Regional Medical Center - Fountain Boulevard Campus (Mercy)
    f. Mercy Memorial Hospital, Urbana
    g. Upper Valley Medical Center, Troy
    h. Greene Memorial Hospital, Xenia
    i. Department of Veterans Affairs - Medical Center
    j. 88th Medical Center, WPAFB

Communicate the following information:

Rerouting of emergency patients is requested by ___name_____ hospital due to overcrowding. One of the following categories of rerouting may be requested. Hospitals MUST specify what category is being rerouted using the following options:

**Reroute all Emergency Patients**
**Reroute all but major trauma (Trauma Centers Only)**
**Reroute Intensive and/or Coronary Care Patients Only.**

***After two (2) hours hospitals will be notified by page and/or email to review their reroute status.***

It will be the responsibility of the **rerouting hospital to cancel their rerouting status and:**

1. Update the GDAHA SurgeNet Web Page
2. Use the same notification protocols used to initiate the rerouting procedure as appropriate

**LOCKDOWN:** the hospital has activated its disaster plan because of an internal emergency, bomb threat, or other situation rendering it unable to accept patients.

**INFORMATIONAL CATEGORIES:**

On occasion, hospitals will not be able to handle a certain category of patients. For example:

- CAT Scan is not available; stroke or head trauma patients should be diverted;
- Haz-Mat patients should be diverted;
- A physician specialty is not available;

The hospital that is diverting this certain category of patients will not be considered rerouting in these circumstances. This will be shown on the web page as SPECIAL SITUATION – see Notes/Call.

**THREE HOSPITALS NEED TO REROUTE**

In the event that overcrowding and rerouting exists at the same time at two (2) hospitals in close geographic proximity (Addendum A) and the third hospital in the same geographic area needs to reroute, by prior agreement, all hospitals will terminate their rerouting **for a minimum of two hours (Forced Open)**. It will be the responsibility of the third hospital to initiate communication with the other rerouting hospitals' individuals responsible for reroute to review the situation. If any of the rerouted hospitals can stop rerouting they will do so, to avoid all hospitals having to stop rerouting.

**REROUTING EMERGENCY**

**If none of the three hospitals can stop rerouting, then a "rerouting emergency" will be declared and the following procedures will be followed.**

1. Update the GDAHA SurgeNet Web Page
2. All three hospitals will call previously notified agencies and inform them that rerouting emergency has been declared.
3. When a rerouting emergency is declared, Children's Medical Center will remain available to accept patients up to 21 years of age *(no maternity patients*).
4. Squads should transport patients to their assigned reroute emergency "home base" hospital(s) (See Addendum B).

***Note: During mutual aid or out of district transport as aided agency/district.***

When emergency medical service personnel respond to an emergency call and the patient and/or physician requests him to proceed to a hospital which is rerouted, the emergency medical services personnel will have the responsibility of advising the patient and/or physician that "due to overcrowding of the hospital patient care may be jeopardized." **If the patient and/or physician still requests to be transported to the rerouted hospital, the emergency medical services personnel will contact and consult with a Medical Control physician in the emergency department of the rerouted hospital.**

**All concerned parties should acknowledge the situation in which emergency medical services personnel (in the absence of a physician's judgment) may determine the victim to be in critical need of immediate medical care and decide to transport the victim to the nearest hospital, even though overcrowded conditions exist in the hospital. Any discussion concerning the decision of the emergency medical services personnel should be done privately and after the patient care has been initiated.**

Emergency medical service personnel should use their radios, cellular phone or dispatcher to notify the rerouting hospital in unusual circumstances (critical illness or injury, multi-victim incidents, etc.).

**GREATER DAYTON AREA HOSPITAL ASSOCIATION**

**POLICY STATEMENT FOR**
**TEMPORARY REROUTING OF EMERGENCY PATIENTS**

**ADDENDUM A**

**Geographic Areas:**

1. In the event that overcrowding and rerouting exists at the same time at two (2) hospitals in the list below and a third hospital in the list below needs to reroute, by prior agreement no hospitals will reroute for two (2) hours.
    a. Good Samaritan Hospital
    b. Grandview Medical Center
    c. Kettering Medical Center
    d. Miami Valley Hospital

2. In the event that overcrowding and rerouting exists at the same time at two (2) hospitals in the geographic groups below and a third hospital needs to reroute, by prior agreement no hospitals will reroute for two (2) hours.

    a. Greene Memorial and two (2) of the following: Miami Valley, Kettering, Grandview, Southview or Miami Valley Hospital South.
    b. Upper Valley Medical Center and two (2) of the following: Good Samaritan, Grandview, Miami Valley, or Wilson Memorial Hospital in Sidney.
    c. Any three (3) of the following: Atrium Medical Center, Southview, Sycamore, Kettering and Miami Valley South.
    d. Wayne Hospital, Good Samaritan and Grandview.

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8-24-09

# Addendum B
# GREATER DAYTON AREA HOSPITAL ASSOCIATION

## REROUTE EMERGENCY
## EMS – HOSPITAL PROPOSED PAIRING

Reroute Emergency is declared when three or more hospitals in the same geographic area are extremely overcrowded and none of the three hospitals feel that they can stop rerouting. When a rerouting emergency is declared the following procedures will be followed.

1. The third rerouting hospital will coordinate communications with the designated administrative person in charge, at the other rerouting hospitals.
2. **Each GDAHA hospital** will notify the home base EMS agencies assigned to them, as well as other squads that they normally notify out of the GDAHA service area, and inform them that a **Rerouting Emergency** has been declared. Squads should transport patient to their assigned "*home base*" hospital. Only Good Samaritan Hospital will notify Harrison Township. Only Miami Valley Hospital will notify Dayton Fire Department. Only Sycamore Hospital will notify Miami Township.
3. Following notification of EMS, hospitals able to maintain Normal Operation should not change their status on the web page to Reroute Emergency, until conditions warrant that change.
4. Squads should CONSIDER utilizing outlying hospitals or other hospitals in normal status*
5. Children's Medical Center will remain available to accept patients up to 21 years of age. *(No maternity patients.)*
6. Rerouting Emergency **DOES NOT** apply to the following categories of patients: respiratory and/or cardiac arrest; Trauma*, maternity, serious burns, high risk neonatal, dialysis patient, air medical transport, hyperbaric, **cardiac or stroke** alert patients, or recently discharged patients (48 hours).*
7. **After a maximum of two (2) hours all hospitals in Reroute Emergency must reevaluate their status.**
8. ***Squads should transport patients to their assigned reroute emergency "home base" hospital(s) as follows:***
   ***Note: During mutual aid or out of district transport as aided agency/district.***

Good Samaritan Hospital
Brookville
Clayton, Englewood, Union
Dayton Fire Department #16
Dayton Fire Department #14
Harrison – Turner Road
New Lebanon
Lewisburg
Trotwood
West Alexandria
North Central
Phillipsburg

Grandview Medical Center
Butler Township
Dayton Fire Department #8
Dayton Fire Department #13
Harrison – I-75 & Needmore
Huber Heights
Vandalia

Kettering Medical Center
Dayton Fire Department #15
Dayton Fire Department #18
Kettering (4 units)
Miami Township #48
Moraine (4 units)

Miami Valley Hospital
Dayton Fire Department #11
Dayton Fire Department #10
Fairborn
Jefferson Township
Oakwood
Riverside
University of Dayton Public Safety

Miami Valley Hospital South*
Beavercreek 4
Bellbrook
Kettering #36
Sugarcreek (2 units)
Washington Township #44
Wayne Township

Southview Medical Center
Clearcreek Township
Miami Township – #50
Washington Township #41, 42, 43, 45

Sycamore Medical Center
Farmersville
Miamisburg (2units)
Miami Township - #49
Miami Township- #47
West Carrollton
Germantown
JEMS

Greene Memorial Hospital
Beavercreek (except #4)
Cedarville Twp.
Cedarville University
Central State University
Fairborn
Jefferson Twp.
Miami Twp.
New Jasper Twp.
Silvercreek Twp.
Spring Valley *
Xenia
Xenia Twp.

Springfield Reg. Med Ctr–High St. (CH)
Hustead EMS
Madison Twp.
Harmony Twp.
Springfield Twp. Station 1 & 2
Pleasant Twp.
SFRD Medic 3, 6, 8

Springfield Reg. Med Ctr–Fountain B (Mercy)
German Twp.
New Carlisle
Pike Twp.
Bethel Twp.
Springfield Twp. Station 3
Mad River Twp.
Moorefield Twp.
SFRB Medic 2, 7, 10

Upper Valley Medical Center
Miami County Squads

Wayne Hospital
Darke County Squads

Wilson Memorial Hospital
Shelby County Squads

Atrium Medical Center
Gratis
Lebanon
Mason
Turtlecreek
Middletown

Clinton Memorial Hospital – Wilmington
Massie Township

McCullough Hyde Hospital - Oxford
Camden

Reid Hospital – Richmond, Indiana
Eaton
NW Fire – New Paris

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8-24-09

## Addendum C

## GREATER DAYTON AREA HOSPITAL ASSOCIATION
## EMS REROUTE PAGER

A summary of the hospital reroute status is sent every 15 minutes. The following is an explanation of the abbreviations used

### HOSPITAL NAME ABBREVIATIONS

**CMC –** Children's Medical Center
**SHS –** Springfield Regional Medical Center – High Street Campus (Community)
**GSH** – Good Samaritan Hospital
**GVH –** Grandview Medical Center
**GMH** – Greene Memorial Hospital
**KMC –** Kettering Medical Center
**SFB –** Springfield Regional Medical Center – Fountain Boulevard Campus (Mercy)
**MVH** – Miami Valley Hospital
**MVS** – Miami Valley Hospital South*
**AMC** – Atrium Medical Center, Franklin
**SVH** – Southview Medical Center
**SYC** – Sycamore Medical Center
**UV** – Upper Valley Medical Center
**VA** – Department of Veterans Affairs Medical Center
**WAY** – Wayne Hospital, Greenville
**WMH** – Wilson Memorial Hospital
**WP** – 88th Medical Center, WPAFB

### HOSPITAL STATUS ABBREVIATIONS

**NORM** – Normal Operations
**ALL** – Reroute all Emergency Patients
**MTO** – Reroute all but major trauma (Major Trauma Only)
**ICOR** - Reroute Intensive and/or Coronary Care Patients Only
**FO** – Forced Open
**EMR** – Emergency Reroute
**CALL** – Special Situation Call the ED
**LOCK** – Internal Emergency ED is Closed

PKB/pbt
**8-24-09**

## Hospitals Capabilities List

Below is a list of hospitals, and the specialty capabilities of each (Stroke, PCI, Trauma, etc.).

| Hospital | Adult Trauma Center & Level | Pedi Trauma Center & Level | Inpt. Burn Servc | Interventional Cath Lab 24/7 | If Cath Lab, Cardiac Alert Program | Labor & Delivery Srvcs | Stroke Protocol with Throm-bolytics | Other (see below) |
|---|---|---|---|---|---|---|---|---|
| **Atrium** | Level 3 | | | YES | YES | YES | YES | ** *** |
| **Children's** | | Level 2 | YES | | | | | ** |
| **Community** | | | | YES | | YES | YES | |
| **Good Sam** | | | | YES | YES | YES | YES | ** *** |
| **Grandview** | | | | YES | YES | | YES | * ** *** |
| **Greene Memorial** | Level 3 | | | | | YES | YES | * ** *** |
| **Kettering** | | | | YES | YES | YES | YES | * |
| **Springfield Regional Medical Center** | | | | YES | YES | | YES | |
| **Miami Valley** | Level 1 & | | YES | YES | YES | YES | YES | ** |
| **Miami Valley Hospital South** | | | | | | | YES | ** Ø |
| **Southview** | | | | | | YES | YES | * # *** |
| **Sycamore** | | | | | | | YES | * # |
| **Upper Valley** | | | | | | YES | YES | *** |
| **Wayne** | | | | | | YES | | *** |
| **Wilson** | | | | | | YES | YES | |
| **WPAFB** | | | | | | YES | | ** |

*** Accredited Chest Pain Eval Center**
**** Sexual Assault Nurse Examiners 24/7**
***** Treats superficial/minor burns.**
**& Pediatric Capability**
**Ø No Alerts to MVHS**
**# Has a "cardiac alert program" but no cath lab on site**

**Hospitals' Guide for Public Safety Workers' (PSW) Exposures**

Updated 7-7-09 (Data subject to change – check periodically to ensure most current)

| Step | Atrium | CMC | DHVH | GSH | GVH/SVH | GMH | KMH/SYC | MVH | MVH South | UVMC | SRMC -High St | SRMC Fountain & MMH | Wayne | Wilson |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Updated | May-09 | Sep-04 | Jun-06 | Sep-07 | Sep-07 | Sep-07 | Sep-07 | | | | Sep-07 | Sep-07 | Sep-07 | Jul-09 |
| Wash Area | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Notify EMS Supervisor | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Report to hospital | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Hospital Contact | ED Charge Nurse > EMS Coordinator | NICU Charge Nurse | ED Staff | ED staff or Infection Control | ED Staff -> EMS Coord. | ED Staff -> EMS Coord. | ED Staff -> Infection Control | Security -> AOC | Charge Nurse | Resource Supervisor | Infection Control | Infection Control | Infection Control | ED Staff |
| Complete "Request for Information Form for HCWs" | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Register w/ ED | Encouraged | If desired | If desired | If desired | Y | Y | If desired | If desired | If desired | Y | Y | Y | Y | Y |
| Have your lab drawn | If Desired | If source is high risk (not routine) | If desired | If indicated | Y | Y | If desired | If desired | If desired | If desired | If Indicated | If indicated | If indicated | If indicated |
| Have source lab drawn (HIV, Hep B, Hep C) | Y (Rapid HIV Available | Y | Y | Y (Rapid HIV avail.) | Y (Rapid HIV avail.) | Y | Y | Y (Rapid HIV avail) | Y (Rapid HIV avail) | Y (Rapid HIV avail.) | Y (Rapid HIV avail.) | Y | Y | Y (Rapid HIV available) |
| Follow-up Consult ***YOUR Fire/EMS*** Dept policies/procedures | EMS Coordinator | Follow dept policy | Follow dept policy | Infection Control | EMS Coord. or designee & Follow dept policy | Work Plus Dept | Infection Control & Follow dept policy | Infection Control or Admin Officer | Infection Control or Admin Officer | Occupa-tional Health | Infection Control | Infection Control | Infection Control | Follow EMS policy |
| Comments | Have request for information forwarded to EMS Coordinator Anti-Viral medication available in ER if indicated | Infection Control Doc available 24/7 for RN contact if needed | Infection Control is to be paged 24/7 by ED or Prehospital provider | Infection Control is notified of Exposure Incident by EMS coordinator | EMS Coord. is to be paged 24/7 by ED or Prehospital care provider | Give form to EMS Coord. Who forwards to Infection Control for follow up | Infection Control to 24/7 by ED | Security page Infection Control Mon-Fri 8-4. Admin Officer to be paged at all other times including holidays | Charge Nurse to page Infection Control M-F 8-4 Admin officer to be paged at all other times inlcuding holidays | Place form in locked box in EMS Room for EMS Managr to forward to Occupa-tional Health | Give form to EMS Coord who forwards to Infection Control for follow up | Give form to EMS Coord who forwards to Infection Control for follow up | Give form to Infection Control, ED Manager or House Supervisor | Hosp ED sends white copy of "Request for Info by EMS Worker" to Inf. Preventionist. Yellow copy to EMS coordinator. Inf. Preventionist oversees communication of results & related documentation has been completed per policy. |

## 2009 CHANGES

EMT-P Manual

1. EDD or Waveform $EtCO_2$ is preferred confirmation devices for intubation of cardiac arrest patients, but Colorimetric $EtCO_2$ may be utilized if color changes occur.
2. The addition of Midazolam 4mg. IM as an additional route for treatment of the seizure patient and violent patient.
3. The removal of the number of 50 or more to obtain CHEMPACKs – changed to a MCI where antidotes are greater than available resources.
4. Change the Midazolam pediatric IN dose from 0.1 mk./kg. to 0.2 mg./kg.
5. Change the PR dose of Diazepam for the pediatric patient from 0.1 mg./kg. to 0.5 mg./kg. (Maximum dose 5 mg.)

EMT-I Manual

1. EDD or Waveform $EtCO_2$ is preferred confirmation devices for intubation of cardiac arrest patients, but Colorimetric $EtCO_2$ may be utilized if color changes occur.
2. The addition of a section to allow 12 lead EKG acquisition and transmission****updated in 2010 changes.
3. The removal of the number of 50 or more to obtain CHEMPACKs –changed to a MCI where antidotes are greater than available resources.
4. Removal of IM route of for Diazepam administration for the chemical restraint patient.

EMT-B Manual

1. EDD or Waveform $EtCO_2$ is preferred confirmation devices for intubation of cardiac arrest patients, but Colorimetric $EtCO_2$ may be utilized if color changes occur.
2. The addition of a section to allow 12 lead EKG acquisition and transmission****updated in 2010 changes.
3. The removal of the number of 50 or more to obtain CHEMPACKs –changed to a MCI where antidotes are greater than available resources.
4. The addition of {CPAP} for the Asthma/Emphysema/COPD patient to meet the scope of practice change.

## ***2010 MAJOR CHANGES***

EMT-P Manual

1. Deletion of drug overdose as indication not to initiate field termination
2. PEA rate equal to or greater than 40 should be given additional consideration before field termination is initiated as patient may not be in true cardiac arrest, but not have palpable pulses due to not being hemodynamically stable.
3. Increase fluid challenge to 500 cc's (was 250 cc's) for the hypovolemic cardiac patient without pulmonary edema. (Consistent with remainder of protocol)
4. Clarification of Defibrillation for Monophasic devices at 360 joules/biphasic units should follow manufacture suggested guidelines.
5. {12 lead EKG Transmission}
    1. EMT-P has discretion to transmit 12 lead EKG but is encouraged to transmit any 12 lead that meets Cardiac Alert Criteria or that is questionable. If EMT-P transmits an EKG the medical control physician shall be contacted after the EKG is transmitted, just as is presently done with Cardiac Alert candidates.
6. Added verbiage to stroke section (stroke alert) to indicate that select patients may benefit from thrombolytic therapy up to 6 hours from last time patient seen normal, but maximum benefit derived within 2 hours.
7. Trauma section updated to reflect adoptions made by state with geriatric trauma criteria added.
8. Eye flushing will be changed to 30 minutes or until medical destination is reached to ensure consistency.
9. Encourage use of { CPAP/Bipap} devices for initial treatment of Pulmonary Edema rather than drug therapy.
10. Addition of IV Pediatric Ondansetron (Zofran) for persistent and retractable vomiting.
11. Adoption of "Just in Time" orders for MCI events lasting several days.
12. Change criteria in abdominal pain section to allow for pain relief administration for patient suffering from unilateral flank pain.
13. Violent patient protocol heading changed to "Combative" patient to allow for sedation for either medical or trauma patient. (Pediatric Combative Patient to be call for order prior to administration)
14. Increase number of days from 3 to 30 to meet the Safe Harbor Law that was recently adopted.
15. Notation is chest decompression skills sheet to indicate 2 ¼ " catheter may not be long enough for decompression of certain patients.
16. The administration of Diphenhydramine (Benadryl) for Extra-pyramidal Reactions (call for order)
17. Medical Control approval not necessary for administration of Sodium Thiosulfate for patients in cardiac arrest due to suspected smoke inhalation or Cyanide poisoning.
18. Allow EMT-P to administer auto-injector for single incidents of Organophosphate Poisoning rather than having to utilize for only WMD/MCI Incidents. (Change to OAC). This is a call for order regardless.
19. Scope of Practice Changes for EMT-I will require re-location of Midazolam to the EMT-I controlled drug pouch.
20. All slow IV drug administration would be over 2 minutes.(This includes Sodium Thiosulfate and Sodium Nitrate.)
21. Training Manual to have combined Adult/Pediatric Orders. Quick Reference Guide to remain unchanged

EMT-I Manual

1. Increase fluid challenge to 500 cc's (was 250 cc's) for the hypovolemic cardiac patient without pulmonary edema. (Consistent with remainder of protocol.)
2. Clarification of Defibrillation for Monophasic devices at 360 joules/biphasic units should follow manufacture suggested guidelines.
3. EMT-I must transmit any EKG obtained. Medical Control must be contacted to determine medical facility destination based on pt. condition and 12 lead EKG obtained.
4. Added verbiage to stroke section (stroke alert) to indicate that select patients may benefit from thrombolytic therapy up to 6 hours from last time patient seen normal, but maximum benefit derived within 2 hours.
5. Trauma section updated to reflect adoptions made by state with geriatric trauma criteria added.
6. Eye flushing will be changed to 30 minutes or until medical destination is reached to ensure consistency.
7. Encourage use of { CPAP/Bipap} devices for initial treatment of Pulmonary Edema rather than drug therapy.
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9. Change criteria in abdominal pain section to allow for pain relief administration for patient suffering from unilateral flank pain.
10. Violent patient protocol heading changed to "Combative" patient to allow for sedation for either medical or trauma patient. (Pediatric Combative Patient to be call for order prior to administration)
11. Increase number of days from 3 to 30 to meet the Safe Harbor Law that was recently adopted.
12. Allow EMT-I to administer auto-injector for single incidents of Organophosphate Poisoning rather than having to utilize for only WMD/MCI Incidents. (Change to OAC). This is a call for order regardless.
13. Amend Benzo administration to allow EMT-I and EMT-P administration to be the same (scope of practice changes)
    1. Will require drug bag changeover to take place for drug re-location
    2. Con. Ed. Committee will be tasked with educating EMT-I in drug administration routes.
14. Training Manual to have combined Adult/Pediatric Orders. Quick Reference Guide to remain unchanged.

EMT-B Manual

1. EMT-B must transmit any EKG obtained. Medical Control must be contacted to determine medical facility destination based on pt. condition and 12 lead EKG obtained.
2. Added verbiage to stroke section (stroke alert) to indicate that select patients may benefit from thrombolytic therapy up to 6 hours from last time patient seen normal, but maximum benefit derived within 2 hours.
3. Trauma section updated to reflect adoptions made by state with geriatric trauma criteria added.
4. Eye flushing will be changed to 30 minutes or until medical destination is reached to ensure consistency.
5. Adoption of "Just in Time" orders for MCI events lasting several days.
6. Increase number of days from 3 to 30 to meet the Safe Harbor Law that was recently adopted.
7. Allow EMT-B/First Responder to administer auto-injector for single incidents of Organophosphate Poisoning rather than having to utilize for only WMD/MCI Incidents. (Change to OAC). This is a call for order regardless
8. Training Manual to have combined Adult/Pediatric Orders. Quick Reference Guide to remain unchanged.

## 2010 CALL FOR ORDER DRUGS: PARAMEDIC

| DRUG | INDICATION | ADULT/PEDIATRIC |
|---|---|---|
| Atropine | Organophosphate/Nerve Agent Poisoning | Adult/Pediatric |
| Calcium Chloride 10% | Calcium Channel Blocker OD | Adult/Pediatric |
| | Hydrofluoric Acid Exposure (prophylaxis) | Adult/Pediatric |
| Ciprofloxacin | Prophylaxis against Anthrax, Cholera, Plaque | Adult/Pediatric |
| Cyanide Kit | Conscious pt. w/suspected cyanide poisoning | Adult/Pediatric |
| | Smoke inhalation W/suspected cyanide | Adult/Pediatric |
| Diphenhydramine | Extrapyrmidal Reactions | Adult only |
| Doxycycline | Prophylaxis against Anthrax, Cholera, Plaque | Adult only |
| Duodote | Organophosphate/Nerve Agent Poisoning | Adult/Pediatric |
| Epinephrine | Repeat dose in Asthma | Adult/Pediatric |
| Glucagon | Calcium Channel/Beta Blocker OD | Adult/Pediatric |
| Hydroxocobalamin | Strongly suspected cyanide intoxication | Adult |
| | Smoke inhalation w/ suspected cyanide | Adult |
| Midazolam | Chemical restraint | Pediatric |
| Morphine | Repeat sub Q dose | Adult |
| Morphine | Ant repeat dose | Pediatric |
| Pralidoxime(2 Pam) | Organophosphate/Nerve Agent Poisoning | Adult/Pediatric |
| Sodium Bicarb | Tricyclic OD | Adult/Pediatric |

# NOTES

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