

# Intermediate



2007

## Standing Orders Training Manual

Effective January 1, 2007

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# **Greater Miami Valley EMS Council**

## **Intermediate Standing Orders Training Manual**

**ADULT  
2007**

**(Patients Age 16 and Over)**

**Effective January 1, 2007**

### **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-Intermediate.
- 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 rapid 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<sub>2</sub> 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 here in without direct consultation with medical control. In all such cases, contact with medical control should be considered when logistically feasible.

### **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
  - Hemitorporectomy (body cut in half)
  - Rigor mortis, tissue decomposition, or severe dependent post-mortem 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
  - 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**

#### **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 With No Available Paramedic**

- ♦ When faced with a patient in Cardiac Arrest, no paramedics are 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.**

### **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.
  - Medical Emergencies, Head Trauma, Cardiac Problems (with stable BP): Use TKO rate.
- {Adult IO devices} only when less invasive means are not available or are ineffective (i.e. Glucagon IM, Naloxone MAD, etc.).
- ♦ 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: For patient with an insulin pump: take extra tubing and medication packet(s) to receiving facility with patient, if available.*

### AIRWAY MAINTENANCE

- O<sub>2</sub> 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<sub>2</sub>
- Ventilate patients who are symptomatic with an insufficient respiratory rate or depth
- Consider if airway compromise or insufficient ventilations are present.
- Intubate if apneic.
- Confirm correct placement of advanced airway with clinical assessment and devices.

#### 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, greatly reduces the chances of a right mainstem bronchus intubations. Don't confuse right mainstem intubation for a pneumothorax.

#### Confirmation Devices:

- {EtCO<sub>2</sub> Monitor}
- {EtCO<sub>2</sub> with waveform}
- {EtCO<sub>2</sub> Detector}
- {Esophageal Detection Device (EDD)}

### End Tidal CO<sub>2</sub> Detector (ETCO<sub>2</sub>) -- Colormetric

#### Limitations

- The patient must have adequate perfusion. If CO<sub>2</sub> is not transported to the lungs, the device will not register CO<sub>2</sub>. It can then appear that the tube is in the esophagus, when, in fact, it is correctly placed. Therefore, Colorimetric EtCO<sub>2</sub> Detectors are not recommended for patients in cardiac arrest.
- 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<sub>2</sub> 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<sub>2</sub> 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<sub>2</sub> (ETCO<sub>2</sub>) 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<sub>2</sub> monitors can be used on patient with or without adequate perfusion. Electronic monitors are more sensitive therefore changes can be seen in real-time.

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

**Indications for Various Intubation Confirmation Devices**

	<b>Oral ETT</b>	<b>Pulseless Pt.</b>	<b>Apneic Patient</b>
<b>Colormetric EtCO<sub>2</sub></b>	Useful	Contraindicated	Useful
<b>Electronic Waveform EtCO<sub>2</sub></b>	Useful	Useful	Useful
<b>EDD</b>	Useful	Useful	Useful
<b>Pulse-Ox</b>	Useful	Contraindicated	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), or a Laryngeal Mask Airway (LMA))}, are acceptable rescue airway devices. 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.
- Tension Pneumothorax Relief: If indications of Tension Pneumothorax are present, decompress the chest with a 14 gauge, 2½-inch angiocath placed in the second or third intercostal space in the mid-clavicular line.

**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.

### 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.*

## CARDIOVASCULAR EMERGENCIES

### 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.
- 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:”

#### “H’s”

Hypovolemia  
Hypoxia  
Hypo-/hyperkalemia  
Hydrogen Ion (Acidosis)  
Hypoglycemia  
Hypothermia

#### “T’s”

Toxins  
Tamponade, Cardiac  
Tension Pneumothorax  
Thrombosis (Coronary, Pulmonary)  
Trauma

- For pregnant patient in arrest consider need for manual uterine displacement and perform chest compressions slightly higher on the sternum than normal.

### 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
- Transport patient as appropriate
- Consider treatable causes

*NOTE: Current AEDs may not be programmed to the current AHA Guidelines. Utilize AED as it is programmed.*



### **CARDIAC ARREST: V-Fib/Pulseless V-Tach /Asystole/PEA**

- If unwitnessed arrest, initiate CPR for 2 minutes, Defibrillate 360 J (or biphasic equivalent)
- If witnessed arrest, Defibrillate 360 J (or biphasic equivalent)
- CPR for 2 minutes
- Defibrillate 360 J (or biphasic equivalent)
- CPR for 2 minutes
- Defibrillate 360 J (or biphasic equivalent)
- Continue CPR and repeat treatment as indicated
- Consider treatable causes

### **Suspected Cardiac Chest Pain**

- Ask male and female patients if they are taking Viagra, 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 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 administration, consider vascular access for patients who have not previously had nitroglycerin.
- Consider **Morphine, up to 5mg slow IVP**
  - If unable to obtain IV, give **Morphine 5 mg SQ**
  - After five minutes, may consider repeating **Morphine IV**
  - Repeat dose of **Morphine, 5 mg SQ** is indicated only if transport time is greater than 30 minutes
- All patients with evidence of an AMI should be transported to an appropriate interventional facility.
- Transport patient and complete the “EMS Checklist: Chest Pain Check List”
- **NS, up to 250 ml** may be administered to a patient with SBP <100 without pulmonary edema
- Consider repeat 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.*

## **CARDIAC DYSRHYTHMIAS**

### **Bradycardia**

- Transport immediately unless Paramedic intercept is < 5 minutes

### **Tachycardia**

- Transport immediately unless Paramedic intercept is < 5 minutes

## **Non-Traumatic Shock**

### **Without Pulmonary Edema**

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

- **NS, 500 ml IV bolus**
- ♦ Repeat **NS, 500 ml IV bolus**, if needed
- For persistent shock, establish additional vascular access.

### With Pulmonary Edema

(JVD, edema, or rales present)

- Treat arrhythmias as indicated.
- Consider NS, **250 ml IV bolus**

### Exsanguinating Hemorrhage

- Vascular access(es) NS to maintain SBP >100 en route to the hospital.

### **Stroke**

- Complete GMVEMSC Prehospital Suspected CVA/TIA Checklist.
- Be prepared to ventilate at a rate of 20 respirations per minute 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<sub>2</sub> (EtCO<sub>2</sub>) readings are available, ventilate at a rate to maintain EtCO<sub>2</sub> readings at approximately 30 mmHg (30 torr)}.
- Re-evaluate patient condition, contact Medical Control to advise you are en route with a stroke patient, and transport to hospital.
- If glucose <60, or there is strong suspicion of hypoglycemia despite glucometer readings
  - **D<sub>50</sub>, 25 grams IVP.**
  - **D<sub>50</sub>** may be repeated as appropriate.
  - If unable to establish vascular access, **Glucagon, 1 mg IM.**

### Symptoms 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:
  - Extrication
  - Airway Management
  - Stabilization of neck/back or obvious femur and pelvic fractures on a backboard
  - Exsanguinating Hemorrhage Control
- 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 largest tubing available, and 1,000 ml 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 IVP** (2-3 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 IVP (2-3 minutes) based on patient weight, provided SBP > 100.
- Repeat dose of **SQ Morphine 5 mg** is indicated when transport is greater than 30 minutes.

### **Exsanguinating Hemorrhage**

- Control external bleeding with direct pressure, elevation, pressure points, etc.
- Treat for hypovolemic shock as indicated.

### **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 # 937-641-6176
  - Level III Greene Memorial Hospital N/A Helicopter will take trauma Pt. to Level I or II.
  - Level III Middletown Regional Hosp. 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.

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- 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 Adult Triage**

- Utilize for persons 16 and above
- 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.

**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
- 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
- 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

<b>YES = To Trauma Center</b>	<b>NO – Assess Physiologic</b>
<b>Alert Trauma Team</b>	

**Physiological**

- 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

<b>YES = To Trauma Center</b>	<b>NO = Evaluate Mechanism of Injury if high energy impact</b>
<b>Alert Trauma Team</b>	

**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
- 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
- Unrestrained rollover

<b>YES = Consider Trauma Center</b>	<b>NO = Check Special Situations</b>

**Special Situations**

- Age > 55
- 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.

<b>YES = To Trauma Center</b>	<b>NO = To Local Hospital</b>

**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 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:
  - Blown or unequal pupil(s), bradycardia, posturing, and decreased mental status.
  - {Ventilate to maintain EtCO<sub>2</sub> readings of 30 mmHg (30 torr)}.

#### GLASGOW COMA SCALE

		<b>GCS</b>
<b>EYES</b>	<b>SPONTANEOUSLY</b>	<b>4</b>
	<b>TO VERBAL COMMAND</b>	<b>3</b>
	<b>TO PAIN</b>	<b>2</b>
	<b>NO RESPONSE</b>	<b>1</b>
<b>VERBAL</b>	<b>ORIENTED &amp; CONVERSES</b>	<b>5</b>
	<b>DISORIENTED &amp; CONVERSES</b>	<b>4</b>
	<b>INAPPROPRIATE WORDS</b>	<b>3</b>
	<b>INCOMPREHENSIBLE SOUNDS</b>	<b>2</b>
	<b>NO RESPONSE</b>	<b>1</b>
<b>MOTOR</b>	<b>OBEYS VERBAL COMMAND</b>	<b>6</b>
	<b>PURPOSEFUL MOVEMENT TO PAIN</b>	<b>5</b>
	<b>WITHDRAWAL</b>	<b>4</b>
	<b>FLEXION</b>	<b>3</b>
	<b>EXTENSION</b>	<b>2</b>
	<b>NO RESPONSE</b>	<b>1</b>

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) is indicated.

An increase in the level of CO<sub>2</sub> (hypoventilation) promotes cerebral vasodilation and increased swelling, while lowering the level of CO<sub>2</sub> (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 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 IVP (2-3 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 IVP, (2-3 minutes)** based on patient weight, provided SBP > 100.
- Repeat dose of **SQ Morphine 5 mg** is indicated only if transport time > 30 minutes.

### **Drowning and Near Drowning**

- Consider spinal immobilization.
- Consider hypothermia.
- 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 arrest:
  - 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<sub>2</sub>
  - 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 it is profound
  - 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.
- Establish 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 IVP** (2-3 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 IVP** (2-3 minutes) based on patient weight, provided SBP >100.
- Repeat dose of **SQ Morphine 5 mg** 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.
- 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 Hazmat situation
    - Consider contacting Haz-Mat team for assistance in contamination cases
  - Inhalation Burns:
    - Provide {humidified} **O<sub>2</sub>** with **Saline**.
    - If no humidifier is available, administer a **Saline Nebulizer, 3 ml**. Repeat PRN.
- Provide endotracheal intubation as indicated.
- 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 not vomiting or extremely nauseous provide oral fluids.
  - If hypotensive or mental status changes are present administer **NS, 1000 ml bolus.**
- Be prepared for seizures.
- Consider other medical conditions (i.e. overdose, hypoglycemia, CVA) and treat accordingly.
- Hypothermia patients should be transported to a trauma center.

### **Carbon Monoxide (CO) Poisoning**

- Provide high flow **O<sub>2</sub>** to all suspected CO poisonings.
- Pulse Oximeter will give false readings and should not be utilized.
- {CO monitor}
- 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
- Contact medical control to discuss transport considerations.

### **Eye Injuries**

- If possible, contact lenses should be removed. Transport contacts with patient.
- Nasal cannula and IV tubing for irrigation.
- Chemical Burns:
  - Irrigate immediately with **NS** or water for a minimum of 20 minutes
  - Determine chemical involved. Bring MSDS, if available
- Major Eye Trauma:
  - Do not irrigate 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°.

### **{Spinal Injury Clearance}**

Spinal injury clearance may be utilized, when authorized by the Medical Director and the patient is over 16. 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 are 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 **Simple Triage And Rapid 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.
- 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. 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.

### RESPIRATORY DISTRESS

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

### Pulmonary Edema

- Intubate if apneic.
- 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 patient has SBP > 100, **Nitroglycerin 0.4 mg SL up to X 3 every 5 minutes**. Maintain SBP >100.
- **Morphine up to 5 mg IVP over 2 minutes**. Maintain SBP >100.
- May repeat **Morphine up to 5 mg IVP over 2 minutes**. Maintain SBP >100.

### Asthma/Emphysema/COPD

- Consider **Albuterol 2.5 mg** and **Ipratropium 0.5 mg, nebulized** with O<sub>2</sub> 8-12 LPM.
- May repeat **Albuterol 2.5 mg nebulized X 2**.
- After {intubation} of an *apneic* 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.
- 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**.

### ALTERED LEVEL OF CONSCIOUSNESS: Diabetic or Unknown Cause

- If glucose <60, or there is strong suspicion of hypoglycemia despite glucometer readings
  - **D<sub>50</sub>, 25 grams IVP**.
  - **D<sub>50</sub>** may be repeated as appropriate.
  - 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.
- 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<sub>50</sub>**, administer **Naloxone, up to 4 mg, IVP**, varying rate according to patient severity titrate to respiratory rate and depth.
- **Naloxone, up to 4 mg slow IVP/IN** 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 >17 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, **Epi-Pen or Epi 1:1,000 0.3 mg SQ.**
- If applicable, apply {ice pack} and/or constricting band.
- If hypotensive, **NS, bolus to maintain SBP >100.**
- If patient deteriorating or unresponsive, consider early intubation, possibly with smaller than normal ET tube.
- If patient is wheezing: **Albuterol, 2.5 mg and Ipratropium, 0.5 mg in nebulizer with O<sub>2</sub> flowing at 8-12 LPM.**
- **Albuterol** may be repeated x 3.
- 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.**
- For patients unresponsive to **Epinephrine, Glucagon 2 mg, IV/IM.**

### SEIZURES

- BVM and nasopharyngeal airway *during* seizure as needed.
- If seizing, **Diazepam, 5 mg slow IV.**
- If still seizing, **Diazepam, 5 mg slow IV.**
- If glucose <60, or there is strong suspicion of hypoglycemia despite glucometer readings
  - **D<sub>50</sub>, 25 grams IVP**
  - **D<sub>50</sub>** may be repeated as appropriate
  - 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.*

### OVERDOSE

#### Narcotic Overdose

- Consider patient **restraint** before administration of **Naloxone**.
- **Naloxone, up to 4 mg IVP**, varying rate according to patient severity.
  - If patient has a pulse, **Naloxone** can be administered *before* inserting an ETT

- As an alternative to IV **Naloxone**, **Naloxone, 2 mg 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, **Ntg, 0.4 mg SL**, if SBP >100.
- **Diazepam, 5 mg, IV**, if SBP >100.

### **Calcium Channel Blocker Overdose**

- ♦ **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**

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

1. Remove contaminated clothing.
2. Thoroughly wash with {Dawn} paying special attention to skin folds and other areas where simple irrigation may not remove it.
3. Do not transport a patient until gross decontamination is completed.
4. Obtain permission from hospital personnel before entering hospital with a potentially contaminated patient and/or crew.
5. 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.

The Centers for Disease Control (CDC) has made recommendations about antidotes for Mass Casualty Incidents (MCIs), including the following:

- It is likely that a terrorist attack would utilize materials that could be stolen or purchased in the U.S., rather than importing weapons such as nerve gas. Improvised weapons could include cyanide stolen from industry, or organophosphates, which have essentially the same effect as Nerve Agents, yet can be purchased inexpensively. In spite of what is commonly believed, many people exposed to cyanide, organophosphates, or nerve gas are potentially salvageable.
- It is critically important that the antidotes be given as quickly as possible.
- Atropine is the most important drug to be given rapidly for organophosphate or nerve agent poisons, and often the patients need repeated doses of Atropine.
- Nitrites (the first two components of Cyanide Kits) provide increased effectiveness, but require careful and time-consuming monitoring, and have significant side effects. They may be impractical in a Mass Casualty Incident. Sodium Thiosulfate has fewer side effects and much lower risk, especially when the diagnosis is not certain, or when combinations of poisons (i.e., carbon monoxide) may be present. CDC recommends that suspected victims of cyanide poisoning in MCIs should be treated with Oxygen and Sodium Thiosulfate, skipping the use of both nitrites.
- EMS agencies in major cities should be prepared to deal with at least 500 - 1,000 casualties from either cyanide or organophosphates/Nerve Agents, and thus should deploy antidotes on prehospital apparatus.

### **Guidelines for Dealing With Exposure to Hazardous Drug**

#### **Hazardous Drug: Exposures and Spills**

*From the Oncology Nursing Society Chemotherapy and Biotherapy  
Guidelines and Recommendations for Practice (2ed) 2005*

What is the chance that EMS personnel would be exposed to a hazardous drug?

- Patients who have continuous IV chemotherapy at home (should have a homecare agency or physician's office providing daily check-up, spill kit, and disposal of contaminated items)
- 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 who are taking oral chemotherapy drugs
- Hazardous refers to drugs that require special handling because of potential health risks. These risks are a result of the inherent toxicities of the drugs (NIOSH, 2004.)
  - <http://www.cdc.gov/niosh/docs/2004-165/2004-165d.html> has a complete list of drugs.
  - Hazardous drugs meet one or more of the following criteria:
    - carcinogenicity – can cause cancer
    - teratogenicity – can cause birth defects
    - reproductive toxicity – such as infertility, spontaneous abortion
    - organ toxicity – skin rash, elevated liver enzymes, hair loss
    - genotoxicity – damage to genes (chromosomes)
    - drugs similar in structure or toxicity to hazardous drugs
- According to OSHA, 1995, safe levels of occupational exposure to hazardous agents cannot be determined, and no reliable method of monitoring exposure exists. Therefore, it is imperative that those who work with hazardous drugs adhere to practices designed to minimize occupational exposure. 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 (NIOSH, 2004)
- PPE (personal protective equipment) 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

**GMVEMSC Prehospital Intermediate Training Manual – Adult**  
**Version: January 1, 2007**

- 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 (NIOSH, 2004)
  - 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 patient’s physician (if it is the patient) or to Employee Health Clinic (if it is an employee) for examination and documentation.
- Accidental eye exposure: immediately flush eye with saline solution or water for at least 15 minutes. Report to patient’s physician (if it is the patient) or to Employee Health Clinic (if it is an employee) 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 cytotoxic 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 HazMat 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 HazMat team (or local HazMat 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. DON’T DELAY IRRIGATION/DECON! Continue to flush affected skin and eyes with copious amounts of water or **Saline** for at least 30 minutes.
- If ingested, do not induce vomiting. Dilute with water or milk.
- Intubate if apneic.

- Monitor for prolonged QT interval, and cardiac arrest.
- For pain relief consider **Morphine, up to 5mg slow IVP**
  - If unable to obtain IV, give **Morphine 5 mg SQ**
  - After five minutes, may consider repeating **Morphine IV**
  - Repeat dose of **Morphine, 5 mg SQ** is indicated only if transport time is greater than 30 minutes

#### HAZ MAT: Cyanide

- ◆ In any case of known or strongly suspected cyanide intoxication, Intermediates will utilize the following:
  - **Conscious Patients of Known or Strongly Suspected Cyanide Poisoning:**
    - It is critical to control any seizure activity, using **Diazepam**
  - **Unconscious Patients of Known or Strongly Suspected Cyanide Poisoning:**
    - Provide 100% O<sub>2</sub> by BVM, preferably via Endotracheal tube
    - CPR if indicated.
    - It is critical to control any seizure activity, using **Diazepam**.
  - **For pediatric patients, follow the orders above, using the doses below:**
    - Control any seizure activity, using **Diazepam**
  - **In MCIs with suspected cyanide poisoning:**
    - Control any seizure activity, using **Diazepam**
    - Contact 937-333-USAR and request additional cyanide antidotes

#### HAZ-MAT: Organophosphate or Nerve Gas Poisoning (MCI only)

- Any case of known or strong suspected organophosphate or carbamate (i.e., insecticides such as parathion or malathion); or nerve agent (i.e., Tabun, Sarin, Soman, VX, etc.) exposure, symptoms may include miosis (pinpoint pupils), rhinorrhea (runny nose), copious secretions, localized sweating, nausea, vomiting, weakness, seizures, dyspnea, loss of consciousness, apnea, diarrhea, flaccid paralysis and cardiac arrest.
- 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 by **Mark I** auto-injector.
  - Atropine is administered by the 2 mg Autoinjector, for adults and children weighing over 90 pounds.
  - Children weighing 40 - 90 pounds should be given the 1.0 mg Atropen autoinjector.
  - Children weighing less than 40 pounds should be given the 0.5 mg Atropen autoinjector.
- ◆ **Atropine** should be followed with 600 mg IM **Pralidoxime (2-PAM)**, which is **Mark I** autoinjector
- Treat seizures with **Diazepam** 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 Weapons of Mass Destruction such as 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 the Mark I kits. Auto-injectors can be quite expensive, but enough atropine in multi-dose vials for an initial dose of Atropine for between 200 and 400 patients, with syringes, needles and alcohol preps, for example, is very inexpensive}.



**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. Remove Mark I kit from protective pouch
2. Hold unit by plastic clip
3. Remove AtroPen from slot number 1 of the plastic clip. The yellow safety cap will remain in the clip and the AtroPen will now be armed. Do not hold unit by green tip. The needle ejects from the green tip
4. Grasp the unit and position the green tip of the AtroPen on victim's outer thigh
5. Push firmly until auto-injector fires
6. Hold in place for 10 seconds to ensure Atropine has been properly delivered
7. Remove 2-PAM Cl ComboPen from slot number 2 of the plastic clip. The gray safety cap will remain in the clip and the ComboPen will now be armed. Do not hold the unit by the black tip. The needle ejects from the black tip
8. Grasp the unit and position the black tip of the Combo Pen on victim's outer thigh.
9. Push firmly until auto-injector fires
10. Hold in place for 10 seconds to ensure Pralidoxime has been properly delivered
11. 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:



**Anterolateral Thigh**

### **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). Among those resources are **CHEMPACKS: containers with enough antidotes to treat roughly 500 victims**, placed by the Centers for Disease Control (CDC) in hospitals around the nation.

The Ohio Region 2 Regional Physician Advisory Board (**RPAB**), in concert with the Dayton Metropolitan Medical Response System (DMMRS), Greater Dayton Area Hospital Association Domestic Preparedness Committee, GMVEMSC, and others, has developed a “Deployment Protocol” for preparation, transport, training, and usage of CHEMPACKS in the West Central Ohio Region. This protocol has been revised to be compliant with the newly enacted State of Ohio CHEMPACK PLAN.

All EMS personnel must now know how to recognize the use of chemical agents, when to utilize antidotes, and how they are administered. Ohio Law and Region 2 EMS Standing Orders now permit EMT-Intermediates, EMT-Basics, and First Responders to utilize WMD autoinjectors in a Mass Casualty Incident. They must also understand the process for using the CHEMPACK agents. A training video on signs, symptoms, and the CHEMPACK protocol is being produced and distributed. **Personnel must further 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 convulsions that can contribute).

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. 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

The RPAB also developed a series of Job Aids, which will be distributed to all EMS agencies and hospitals in our region. “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.

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:

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- A large number (50 or more) of confirmed or potential adult or pediatric patients **AND**
- Either a Nerve agent/Organophosphate was identified **or** there are patients exhibiting signs or symptoms consistent with exposure to a nerve agent

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.

However, 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. More than that, EMS can access regional WMD Drug Caches for Mass Casualty Incidents by calling the “Regional Rescue Coordination Center” at **937-333-USAR**. 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.

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 Yellow dots for potential use at the Storing Hospital.

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

<b>Mnemonic for Signs &amp; Symptoms of Nerve Agents or Organophosphates: SLUDGEMM</b>	
Salivation	Gastrointestinal upset
Lacrimation	Emesis
Urination	Muscle twitching
Defecation	Miosis (abnormally constricted pupils)
<b>Initial Actions:</b>	
	<b>Personnel safety</b> (Distance, Uphill/Upwind, PPE, etc.)
	Call for additional resources (Medic Units, Engines for personnel/resources/Decon, <b>Haz-Mat</b> , Law Enforcement, etc.)
	Consider potential for secondary devices
<b>DECON!</b>	
<b>Antidotes in ALS Drug Bags and/or County Caches:</b>	
<ul style="list-style-type: none"> <li>• Mark I Kit</li> <li>• Atropine</li> <li>• Oxygen</li> </ul>	<ul style="list-style-type: none"> <li>• CANA for seizures (Diazepam Autoinjectors)</li> <li>• Diazepam for seizures</li> </ul>
<b>Note: First Responders, EMT-B's, and EMT-I's may only administer O2 and Autoinjector WMD Drugs</b>	
<b>Incident Is Appropriate for CHEMPACK Utilization IF BOTH of the following are present:</b>	
	<ul style="list-style-type: none"> <li>• A large number (50 or more) of confirmed or potential adult or pediatric patients <b>AND</b></li> <li>• Nerve agent/Organophosphate identified or Patients are exhibiting signs or symptoms consistent with an exposure to a nerve agent</li> </ul>
	<b>If so, immediately have your Dispatch contact Ohio State Patrol CENTRAL DISPATCH at 1-866-599-LERP, and request CHEMPACK deployment to the scene.</b>
<b>Contact Medical Control</b>	
	Provide the following information: <ul style="list-style-type: none"> <li>▪ Estimated number of confirmed or potential adult and pediatric patients</li> <li>▪ Signs and symptoms exhibited by the patients</li> <li>▪ Name and/or identification information of the nerve agent if known</li> <li>▪ Form of the released nerve agent (liquid, gas, etc.) if known</li> <li>▪ Routes of exposure of the patients (percutaneous, inhalation, ingestion, etc.) if known</li> <li>▪ Additional anticipated decontamination needs if necessary</li> </ul>
<b>Receive CHEMPACK from Transporting Law Enforcement Agency</b>	
	Sign the “CHEMPACK CONTROLLED SUBSTANCE TRANSFER FORM” and receive copy
	Obtain authorization <b>from Medical Control to administer CHEMPACK</b> antidotes.
	<b>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</b> <ul style="list-style-type: none"> <li>▪ Region 2 EMS personnel need authorization from a MCP (MCP) to administer cyanide antidotes.</li> <li>▪ Calling for separate orders for each individual patient is impractical.</li> <li>▪ 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.</li> </ul>

<b>Once Authorized, Administer Antidotes to Patients as Needed</b>	
	<p><b>Antidote dosing and administration of treatment (field, transport, and hospital):</b></p> <ul style="list-style-type: none"> <li>◆ Administer <b>1-2 mg. Atropine (Atropine Sulfate)</b> every 3 - 5 minutes, as available until lungs are clear to auscultation. <b>Atropine</b> may be given by <b>Mark I</b> auto-injector <ul style="list-style-type: none"> <li>➤ Atropine is administered by the 2 mg Autoinjector, for adults and children weighing over 90 pounds</li> <li>➤ Children weighing 40 - 90 pounds should be given the 1 mg Atropen autoinjector</li> <li>➤ Children weighing less than 40 pounds should be given the 0.5 mg Atropen autoinjector</li> </ul> </li> <li>◆ Follow Atropine with <b>2-PAM (Pralidoxime)</b>, 600 mg IM, <b>which is Mark I autoinjector Item 2 for older children and adults.</b></li> </ul> <p>Treat any seizures with <b>Diazepam</b>, or <b>{Diazepam Autoinjector}</b></p>
	<p><b>Rules of Thumb:</b></p> <ul style="list-style-type: none"> <li>• Mild to moderate cases should be treated with one or two doses of Atropine and 2-PAM</li> <li>• Severe doses will generally require repeating every 5 minutes up to 3 doses</li> <li>• Organophosphate poisonings will require more Atropine (&gt; 3 Mark I Kits) than Nerve Agent poisonings, but no more 2-PAM than the 3 Mark I's</li> <li>• Atropine in these circumstances is <b>not</b> for bradycardia, which may or may not be present</li> <li>• Primary endpoints for treatment are diminished airway secretions, hypoxia improves, airway resistance decreases, and dyspnea improves</li> </ul>
	Provide all needed Supportive Care (ventilation, eye/skin/oral care, etc.)
	Monitor all patients for delayed or recurring effects
<b>After Incident is Resolved</b>	
	Return all unused treatment supplies to the Hospital which supplied the CHEMPACK. Properly dispose of all Medical Waste
<b>MCPs:</b>	
	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.)

### **HAZMAT: BIOLOGICALS**

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### **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**

- 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 when the patient is conscious, alert, is not hypotensive, and is complaining of severe pain, consider **Morphine, up to 5mg slow IVP**
  - If unable to obtain IV, give **Morphine 5 mg SQ**
  - After five minutes, may consider repeating **Morphine up to 5mg slow IVP**.
  - Repeat dose of **Morphine, 5 mg SQ** 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 mmHG 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.*

### **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  $\geq$  20 weeks gestation should be taken to maternity department; < 20 weeks gestation should go to the emergency department.

### **Cardiac Arrest in Pregnant Female**

- 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.*

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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**

	0	1	2
Heart rate	Absent	Slow (< 100)	> 100
Resp. effort	Absent	Slow or Irregular	Good crying
Muscle tone	Limp	Some flexion of extremities	Active motion
Response to catheter in nostril	No response	Grimace	Cough or sneeze
Color	Blue or pale	Body pink; extremities blue	Completely pink

**Newborn Care & Resuscitation**

**General Considerations**

- As soon as the baby is born, dry, warm, maintain airway.
  - Place in the sniffing position (1" towel under shoulders).
  - Suction infant until all secretions are clear of airway.
- 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.
- 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 *before* taking other resuscitative steps.
- Mechanical suction may be used on infants, but only if the suction pressure does not exceed 100 mmHg or 136 cm H<sub>2</sub>O. Bulb suctioning is preferred.
- 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.
- 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.
- Use length / weight based resuscitation tape (i.e., Broselow Tape).

**Specific Care**

- After delivery of the infant, assess the airway and breathing while drying and positioning head down.
- If HR <100, BVM ventilation is necessary to increase heart rate.
  - Despite adequate ventilation, if HR <60 begin CPR.
  - Ventilation is also indicated for apnea and/or persistent central cyanosis.
  - Ventilate at 40-60/min.
  - Compress at 120/min. (Compression to Ventilation ratio of 3:1)
- If asystole or spontaneous HR <60 despite adequate ventilation and stimulation:
  - Compress at 120/min. (Compression to Ventilation ratio of 3:1)
- If hypovolemic, **NS, 10 ml/kg** over 5-10 minutes.
- Consider **Naloxone, 0.1 mg/kg, IV/IO/ETT** every 3 minutes until respirations improve.
- **Dextrose 12.5% 1 ml/kg (D<sub>25</sub>)** diluted with equal amounts of NS) if BS <40 mg/dl.

### Delivery Complications

- Place mother on O<sub>2</sub> by NRB.
- **Cord around baby's Neck:**
  - As baby's head passes out of the vaginal opening, feel for the cord.
  - Initially try to slip cord over baby's head.
  - If too tight, clamp cord in two places and cut between clamps.
- **Breech Delivery:**
  - When the appendage(s) or buttocks first become visible, transport patient *immediately* to the nearest facility.
  - If the head is caught, support the body and insert two fingers forming a "V" around the mouth and nose.
- **Excessive Bleeding:**
  - Treat for shock
  - 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.

### PSYCHIATRIC EMERGENCIES

- For violent or non-compliant patients, consider staging until police have assured scene safety
- Have patient searched for weapons
- Obtain previous mental health history:
  - Suicidal or violent 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.

### VIOLENT PATIENTS

- Determine patient incompetence. A patient is incompetent if they are:
  - Suicidal
  - Child under 18 with urgent need for medical care
  - Confused
  - Developmentally or mentally disabled and injured/ill
  - Intoxicated and injured/ill
  - Physically/verbally hostile
  - Unconscious
- Consider medical causes for patient's condition
- Consider staging until police have assured scene safety
- Have patient searched for weapons



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- 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
- Consider **Diazepam, 5 mg slow IVP or IM** as a chemical restraint

**ELDER ABUSE NEGLECT**

- EMS personnel must report any alleged abuse or neglect (including adults) to the appropriate agency, generally the police, rather than social services, if victim is either elderly or pediatric. *Simply giving your report to hospital staff does not meet your burden under the law.*
- Complete the Social Services Referral Form provided by GDAHA at the hospital.



# **Greater Miami Valley EMS Council**

## **Intermediate Standing Orders Training Manual**

### **PEDIATRIC 2007**

**(Patients Under 16 Years Old)**

**Effective January 1, 2007**

### INITIAL CARE

- Follow basic, advanced life support and airway algorithms as indicated.
- 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: Establish an IV/IO of **NS, bolus of 20 ml/kg** using regular or macro drip tubing. Titrate fluids to maintain perfusion.
  - Medical Emergencies, Head Trauma, Cardiac Problems (with stable BP): Use TKO rate.
  - Spend no more than 5 minutes at the scene on this procedure.
- IO devices: Use of manual or mechanically inserted IO devices should be limited to patient that are unresponsive and hemodynamically unstable and when less invasive means are not available or are ineffective (i.e. Glucagon IM, Narcan MAD, MAD, etc.).
- 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.
- *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 here in without direct consultation with medical control. In all such cases, contact with medical control should be considered when logistically feasible.

***NOTE:** For patient with a insulin pump: take extra tubing and medication packet(s) to receiving facility with patient, if available*

### AIRWAY MAINTENANCE

- **O<sub>2</sub>** as needed. Use the following rates as guidelines:
  - **2 LPM by NC** for patient with known congenital heart defects.
  - **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<sub>2</sub>**.

***NOTE:** Congenital heart defect patients in severe respiratory distress or with chest pain need the same O<sub>2</sub> devices and flow rates as any other patient in such condition. Be prepared to stimulate breathing and/or ventilate should the patient become apneic.*

- Consider if airway compromise or insufficient ventilations are present.
- Intubate if apneic.
- Confirm correct placement of advanced airway with clinical assessment and devices.

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

### **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.
- Proper depth placement of tracheal tube in the pediatric patient can be calculated by the following formula:  
Depth of Insertion (marking on tube) = tube size x 3.

### **Confirmation Devices:**

- {EtCO<sub>2</sub> Monitor}
- {EtCO<sub>2</sub> with waveform}
- {EtCO<sub>2</sub> Detector}
- {Esophageal Detection Device (EDD)}

### **End Tidal CO<sub>2</sub> Detector (ETCO<sub>2</sub>) - Colorimetric**

#### **Limitations**

- The patient must have adequate perfusion. If CO<sub>2</sub> is not transported to the lungs, the device will not register CO<sub>2</sub>. It can then appear that the tube is in the esophagus, when, in fact, it is correctly placed. Therefore, Colorimetric EtCO<sub>2</sub> Detectors are not recommended for patients in cardiac arrest.
- Secretions, emesis, etc., can ruin the device.
- A patient with large amounts of carbonated beverage (i.e., soda) in his stomach can give a false positive. The device may sense the CO<sub>2</sub> 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.
- Pediatric and adult colorimetric devices should be used for monitoring ETCO<sub>2</sub> based on the weight restrictions of the device recommended by the manufacturer.

### **Medication Issues:**

- If you administer medications via ETT, remove the EtCO<sub>2</sub> detector for several ventilations, until no medication returns through the tube during exhalation. Medications splashing up the tube can alter color change.

### **Electronic End Tidal CO<sub>2</sub> (ETCO<sub>2</sub>) 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<sub>2</sub> monitors can be used on patient with or without adequate perfusion. Electronic monitors are more sensitive therefore changes can be seen in real-time.

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

**Indications for Various Intubation Confirmation Devices**

	<b>Oral ETT</b>	<b>Pulseless Pt.</b>	<b>Apneic Patient</b>
<b>Colormetric EtCO<sub>2</sub></b>	Useful	Contraindicated	Useful
<b>Electronic Waveform EtCO<sub>2</sub></b>	Useful	Useful	Useful
<b>EDD</b>	Useful	Useful	Useful
<b>BAAM</b>	Contraindicated	Contraindicated	Contraindicated
<b>Pulse-Ox</b>	Useful	Contraindicated	Useful

*NOTE: Intubation is not permitted unless at least one of these 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 or Pharyngotracheal Lumen Airway (PtL), or a Laryngeal Mask Airway (LMA))}, are acceptable rescue airway devices. 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.
- Tension Pneumothorax Relief: If indications of Tension Pneumothorax are present, decompress the chest with a 14 gauge, 2½-inch angiocath placed in the second or third intercostal space in the mid-clavicular line.

**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.

**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.*

## CARDIOVASCULAR EMERGENCIES

### General Conditions

- CPR should not be interrupted for more than 10 seconds until spontaneous pulse is established.
- You are expected to provide initial resuscitative care at the scene.
- Any cardiac dysrhythmia that adversely affects the patient’s cardiac output and clinical stability are considered unstable.
- In all cardiac arrests, consider the ACLS “Treatable Causes:”

#### “H’s”

Hypovolemia  
Hypoxia  
Hypo-/hyperkalemia  
Hydrogen Ion (Acidosis)  
Hypoglycemia  
Hypothermia

#### “T’s”

Toxins  
Tamponade, Cardiac  
Tension Pneumothorax  
Thrombosis (Coronary, Pulmonary)  
Trauma

- For pregnant patient in arrest consider need for manual uterine displacement and perform chest compressions slightly higher on the sternum than normal.

### CARDIAC ARREST: Basic Life Support

- Assess patient for respiratory and cardiac arrest
- Initiate CPR and {AED/Defibrillator} using most current American Heart Association Guidelines
- Compressions should be at a rate of about 100 per minute
- Transport patient as appropriate
- Consider treatable causes

*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 patient over 1 year of age. If available, use AEDs or pads which are designed for pediatric use for children 1 – 8 years of age.*

### CARDIAC ARREST: V-Fib/Pulseless V-Tach / Asystole/PEA

- If unwitnessed arrest, initiate CPR for 2 minutes, Defibrillate 2 J/kg (or biphasic equivalent)
- If witnessed arrest, Defibrillate 2 J/kg(or biphasic equivalent)
- CPR for 2 minutes
- Defibrillate 4 J/kg (or biphasic equivalent)
- CPR for 2 minutes
- Defibrillate 4 J/kg (or biphasic equivalent)
- Continue CPR and repeat treatment as indicated
- Consider treatable causes

### **Suspected Cardiac Chest Pain**

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.

## **CARDIAC DYSRHYTHMIAS**

### **Bradycardia**

- For adequate perfusion, observe, monitor, and apply oxygen if needed.
- For poor perfusion,
  - Perform CPR if HR <60/min
- Transport immediately unless Paramedic intercept is < 5 minutes

### **Tachycardia**

- Transport immediately unless Paramedic intercept is < 5 minutes

## **Non-Traumatic Shock**

### **Without Pulmonary Edema**

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

- **NS, 20 ml/kg IV bolus**
- **◆ Repeat NS, 20 ml/kg IV bolus**, if needed
- For persistent shock, establish additional vascular access.

### **Exsanguinating Hemorrhage**

- Vascular access(es) **NS 20 ml/kg** to maintain adequate perfusion en route to the hospital.

## **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 Glasgow Coma Scale 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:
  - Extrication
  - Airway Management
  - Stabilization of neck/back or obvious femur and pelvic fractures on a backboard
  - Exsanguinating Hemorrhage Control
- 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 largest tubing available, and 20 ml/kg of **0.9% NS**. **IV** flow rates are as follows:
  - Keep open rate for major head trauma with adequate perfusion.

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- 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 adequate SBP.
- 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 0.1 mg/kg slow IVP** (2-3 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 year of age.
- ♦ May repeat **Morphine, 0.1 mg/kg, slow IVP** (2-3 minutes).
- ♦ Repeat dose of **SQ Morphine, 0.1 mg/kg SQ (Max dose 5 mg)** is indicated when transport is greater than 30 minutes.

**Exsanguinating Hemorrhage**

- Control external bleeding with direct pressure, elevation, pressure points, etc.
- Treat for hypovolemic shock as indicated.

**Triage and Transport Guidelines**

Please see the adult Triage and Transportation Guidelines.

**Head Injury**

Evaluate:

- Level of Consciousness
- Pupillary size and reaction
- Glasgow Coma Scale results

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<sub>2</sub> readings of 30 mmHg (30 torr)}.

**GLASGOW COMA SCALE**

	< 2 Years Old		> 2 Years Old	
<b>Eyes</b>	SPONTANEOUSLY	4	SPONTANEOUSLY	4
	TO VOICE	3	TO VOICE	3
	TO PAIN	2	TO PAIN	2
	NO RESPONSE	1	NO RESPONSE	1
<b>Verbal</b>	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
<b>Motor</b>	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 with high flow oxygen. Prophylactic hyperventilation for head injury is not recommended. Cerebral herniation syndrome is the only situation in which hyperventilation (ventilating at a rate of 10 faster than the normal rate) is indicated.

### **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, 0.1 mg/kg IVP** (2-3 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.
- ♦ May repeat **Morphine, 0.1 mg/kg, slow IVP** (2-3 minutes).
- ♦ Repeat dose of **SQ Morphine, 0.1 mg/kg** (Max dose 5 mg) is indicated when transport is greater than 30 minutes.

### **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 arrest:
  - 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<sub>2</sub>.
  - 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.
- Establish 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, 0.1 mg/kg IVP** (2-3 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.
- ♦ May repeat **Morphine, 0.1 mg/kg, slow IVP** (2-3 minutes).
- ♦ Repeat dose of **SQ Morphine, 0.1 mg/kg** (Max dose 5 mg) 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 >30 minutes.
- Patient 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 <10% burns 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.
- Keep patient warm.
- 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 Hazmat.
  - Consider contacting Haz-Mat team for assistance in contamination cases.
- Inhalation Burns:
  - Provide {humidified} **O<sub>2</sub>** using a {wall humidifier} 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!
- Consider Hyperbaric Oxygen Treatment for the following:
  - Underlying cardiovascular disease, or cardiovascular symptoms such as chest pain or shortness of breath.

- 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 not vomiting or extremely nauseous provide oral fluids.
  - If hypotensive or mental status changes are present administer **NS, 20 ml/kg bolus.**
- Be prepared for seizures.
- Consider other medical conditions (i.e. overdose, hypoglycemia)
- Hypothermia patients should be transported to a trauma center.

## **Carbon Monoxide (CO) Poisoning**

- Provide high flow **O<sub>2</sub>** to all suspected CO poisonings.
- Pulse Oximeter will give false readings and should not be utilized.
- {CO monitor}
- Consider Hyperbaric Oxygen Treatment for the following:
  - Underlying cardiovascular symptoms such as chest pain or shortness of breath.
  - 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.
- Nasal cannula and IV tubing for irrigation.
- Chemical Burns:
  - Irrigate immediately with **NS** or water for a minimum of 20 minutes.
  - Determine chemical involved. Bring MSDS if possible.
- Major Eye Trauma:
  - Do not irrigate 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°.

## JumpSTART Triage for (MCIs)

### Introduction

- Use the Jump Simple Triage And Rapid Treatment (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

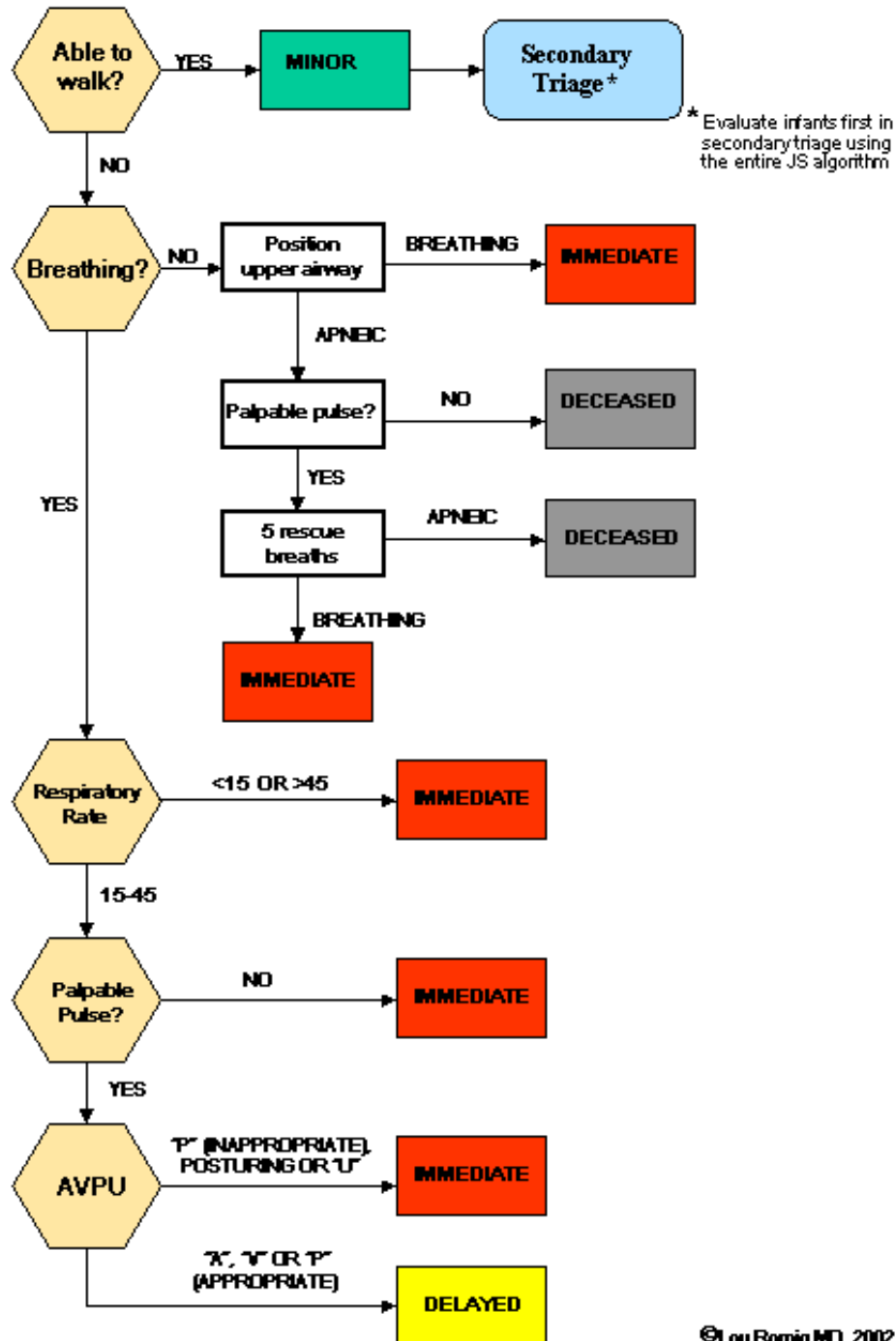
### Procedure

- 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)
- Independent decisions should be made for each victim. Do not base triage decisions on the perception that too many REDs, not enough GREENs, etc.
- If borderline decisions are encountered, always triage to the most urgent priority (i.e., GREEN/YELLOW patient, tag YELLOW). Move as quickly as possible.
- 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.
- 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, 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 no pulse, tag **BLACK**
    - If rescue breathes 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**
- Special Considerations
  - The **first** assessment that produces a **RED** tag stops further assessment.

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- 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®



### RESPIRATORY DISTRESS

- Evaluate breath sounds, and obtain {Pulse Oximeter and/or capnography} reading:
  - Clear: Treat cause (i.e. metabolic disturbance, hyperventilation, fever).
  - Wheezes: Treat cause (i.e. pulmonary edema, FBAO, asthma, allergic reaction).
  - Rales: Treat cause (i.e. pneumonia)
  - Diminished or absent:
    - Unilateral: Treat cause (i.e. asthma, pneumonia, FBAO, pneumothorax, hemothorax, pneumonia)
    - Bilateral: Treat cause (i.e. asthma, respiratory failure)
- Establish vascular access
- Cardiac monitor

### Asthma

- Consider **Albuterol 2.5 mg** and **Ipratropium 0.5 mg**, nebulized with **O<sub>2</sub> 8-12 LPM**.
- May repeat **Albuterol 2.5 mg nebulized X 2**.
- After intubation of an asthma patient, limit rate of ventilation to 10-15 BPM to avoid auto-PEEP and hypotension, provided that 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.

### ALTERED LEVEL OF CONSCIOUSNESS: Diabetic or Unknown Cause

- If glucose <60, or there is strong suspicion of hypoglycemia despite glucometer readings
  - **D<sub>50</sub>, 1 ml/kg IVP for children over 25 kg**
  - **D<sub>25</sub>, 2 ml/kg for children under 25 kg or 1 ml/kg of D<sub>50</sub> dilute with equal volume of saline.**
  - **For infants (< 1 year), D<sub>25</sub>, 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.
  - Unconscious diabetics are often hypothermic. Be prepared to treat hypothermia.
- 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<sub>50</sub>**, administer Naloxone, 0.1 mg/kg, IVP, (Max Dose 4 mg) varying rate according to patient severity titrate to respiratory rate and depth.

*Oral Glucose Administration: Oral glucose is indicated for any awake but disoriented patient with blood sugar reading less than 60 or strong suspicion of hypoglycemia despite blood sugar readings. Glucose paste 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.*

### ALLERGIC REACTION/ANAPHYLAXIS

- If severe allergic reaction, **Epi-Pen**
  - **Epi-Pen Jr – 0.15 mg for patients < 30 kg (< 66 pounds)**
  - **Adult Epi-Pen – 0.3 mg for patient > 30 kg (< 66 pounds)**
  - If applicable, apply {ice pack} and/or constricting band.
  - If hypotensive, NS, **20 ml/kg to maintain appropriate SBP.**
  - If patient deteriorating or unresponsive, consider early intubation, possibly with smaller than normal ET tube.
  - If patient is wheezing: **Albuterol, 2.5 mg and Ipratropium, 0.5 mg in nebulizer with O<sub>2</sub> flow at 8 - 12 LPM.**
  - **Albuterol** may be repeated x 3.

- 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 1 mg/kg, IM/IV (Max Dose 50 mg).**

### SEIZURES

- BVM and nasopharyngeal airway *during* seizure as needed.
- If seizing, **Diazepam, 0.2 mg/kg (Max Dose 5 mg) slow IVP.**
- If still seizing, **Diazepam, 5 mg slow IVP.**
- If BS <60, or suspicion of hypoglycemia despite glucometer readings give:
  - **D<sub>50</sub>, 1 ml/kg IVP for children over 25 kg**
  - **D<sub>25</sub>, 2 ml/kg for children under 25 kg or 1 ml/kg of D<sub>50</sub> dilute with equal volume of saline.**
  - **For infants (< 1 year), D<sub>25</sub>, 2 ml/kg diluted with equal volume of saline.**
  - **Dextrose** may be repeated in ten minutes if blood sugar remains < 60 mg/dl.
- If no 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 – especially head trauma, diabetes, *recent fever/illness, possible toxicological agents.*

### POISONING/OVERDOSE

Consider patient **restraint** before administration of **Naloxone**. If respiration is impaired, or there is a high index of suspicion of narcotic overdose, administer **Naloxone, 0.1 mg/kg (Max Dose 2 mg).** IVP, varying rate according to patient severity. If patient has a pulse, **Naloxone** should be administered before inserting an Endotracheal tube.

- As an alternative to IV **Naloxone**, Intermediates may administer **Naloxone, 0.1 mg/kg IN** via {Mucosal Atomization Device (MAD)}, if appropriately trained/tested with Medical Director approval. Give 1 mg in each nostril by briskly compressing the syringe. If no arousal occurs after three minutes, establish an IV and administer IV **Naloxone**.

#### Calcium Channel Blocker Overdose

- ♦ **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

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

- **Initiate field decontamination.**
  - Remove contaminated clothing.
  - Thoroughly wash with {Dawn} 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.

The Centers for Disease Control (CDC) has made recommendations about antidotes for MCIs, including the following:

- It is likely that a terrorist attack would utilize materials that could be stolen or purchased in the U.S., rather than importing weapons such as Nerve Gas. Improvised weapons could include cyanide stolen from industry, or organophosphates, which have essentially the same effect as Nerve Agents, yet can be purchased inexpensively. In spite of what is commonly believed, many people exposed to cyanide, organophosphates, or Nerve Gas are potentially salvageable.
- It is critically important that the antidotes be given as quickly as possible.
- Atropine is the most important drug to be given rapidly for organophosphate or nerve agent poisons, and often the patients need repeated doses of Atropine.
- CDC recommends that suspected victims of cyanide poisoning in MCIs should be treated with Oxygen and Sodium Thiosulfate.
- EMS agencies in major cities should be prepared to deal with at least 500 - 1,000 casualties from either cyanide or organophosphates/Nerve Agents, and thus should deploy antidotes on prehospital apparatus.

### HAZMAT: Cyanide

- ◆ In any case of known or strongly suspected cyanide intoxication:
  - **Conscious Patients of Known or Strongly Suspected Cyanide Poisoning.**
    - It is critical to control any seizure activity, using **Diazepam**.
  - **Unconscious Patients of Known or Strongly Suspected Cyanide Poisoning**
    - Provide 100% O<sub>2</sub> by BVM, preferably via Endotracheal tube.
    - CPR if indicated.
    - It is critical to control any seizure activity, using **Diazepam**.
- In Multiple Casualty Incidents with suspected cyanide poisoning:
  - Provide 100% O<sub>2</sub> by BVM, preferably via Endotracheal tube.
  - It is critical to control any seizure activity, using **Diazepam**.
- **In cases of smoke inhalation where cyanide is a likely component of the smoke (i.e., structure fires), cases where cyanide intoxication is uncertain, or cases where multiple toxins may be present:**
  - Provide 100% O<sub>2</sub> by BVM, preferably via Endotracheal tube.

- CPR if indicated. In cases of cardiac arrest associated with cyanide poisoning, the cyanide antidotes must have a very high priority. .
- It is critical to control any seizure activity, using **Diazepam**.

#### **HAZMAT: Organophosphate or Nerve Agent (MCI Only)**

- Any case of known or strong suspected organophosphate or carbamate (i.e., insecticides such as parathion or malathion); or nerve agent (i.e., Tabun, Sarin, Soman, VX, etc.) exposure, symptoms may include miosis (pinpoint pupils), rhinorrhea (runny nose), copious secretions, localized sweating, nausea, vomiting, weakness, seizures, dyspnea, loss of consciousness, apnea, diarrhea, flaccid paralysis and cardiac arrest.
- **Note well: Patients with severe poisoning may or *may not* be bradycardic.**
- **◆ 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 by **Mark I** auto-injector.
  - Atropine is administered as 1 - 2 mg by the 2 mg Autoinjector, for adults and children weighing over 90 pounds.
  - Children weighing 40 - 90 pounds should be given the 1.0 mg Atropen autoinjector.
  - Children weighing less than 40 pounds should be given the 0.5 mg Atropen autoinjector.
- **◆ If child is greater than 20 kg, Atropine should be followed with 2-PAM, 600 mg IM which is Mark I autoinjector.**
- Treat any seizures with **Diazepam**, or **Diazepam Autoinjector**.

#### **HAZ-MAT: PEPPER SPRAY**

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

#### **ABDOMINAL PAIN**

- Position of comfort
- Give nothing by mouth
- **IV of NS 20 ml/kg at TKO** rate if there is significant potential for hypotension.
- Assess for trauma, pregnancy, illness or potential ingestion.

#### **FEVER**

Transport all infants < 2months of age with a history or reported temperature of > 38.0<sup>C</sup> (100.4 <sup>F</sup>) or < 35.6<sup>C</sup> (96.0<sup>F</sup>).

#### **NEWBORN RESUSCITATION**

##### **General Considerations**

- As soon as the baby is born, dry, warm, maintain airway.
  - Place in the sniffing position (1" towel under shoulders).
  - Suction infant until all secretions are clear of airway.
- If the newborn delivers with meconium-stained amniotic fluid and is vigorous, with strong respirations, good muscle tone, and heart rate greater than 100 BPM, suction the mouth and nose in the same way as for infants with clear fluid.
- If the newborn delivers with meconium-stained amniotic fluid and is depressed, has poor respiratory effort, decreased muscle tone, or heart rate less than 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
- Mechanical suction may be used on infants, but only if the suction pressure does not exceed 100 mmHg or 136 cm H<sub>2</sub>O. Bulb suctioning is preferred.

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- 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.
- 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.
- Use length / weight based resuscitation tape (i.e., Broselow Tape).

**Specific Care**

- After delivery of the infant, assess the airway and breathing while drying and positioning head down.
- If HR <100, BVM ventilation is necessary to increase heart rate.
  - Despite adequate ventilation, if HR <60 begin CPR.
  - Ventilation is also indicated for apnea and persistent central cyanosis.
  - Ventilate at 40-60/min.
  - Compress at 120/min. (Compression to Ventilation ratio of 3:1)
- If asystole or spontaneous HR <60 despite adequate ventilation and stimulation:
  - Establish vascular access..
- If hypovolemic, **NS, 10 ml/kg** over 5-10 minutes.
- Consider **Naloxone, 0.1 mg/kg, IV/IO/ETT** every 3 minutes until respirations improve.
- **Dextrose 12.5% 1 ml/kg (D<sub>25</sub> diluted with equal amounts of NS)** if BS <40 mg/dl.

**Delivery Complications**

- Place mother on O<sub>2</sub> by NRB.
- **Cord around baby's Neck:**
  - As baby's head passes out of the vaginal opening, feel for the cord.
  - Initially try to slip cord over baby's head.
  - If too tight, clamp cord in two places and cut between clamps.
- **Breech Delivery:**
  - When the appendage(s) or buttocks first become visible, transport patient *immediately* to the nearest facility.
  - If the head is caught, support the body and insert two fingers forming a "V" around the mouth and nose.
- **Excessive Bleeding:**
  - Treat for shock
  - 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.

**PSYCHIATRIC EMERGENCIES**

- For violent or non-compliant patients, consider staging until police have assured scene safety
- Have patient searched for weapons
- Obtain previous mental health history:
  - Suicidal or violent 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.

### **VIOLENT PATIENTS**

- Determine patient incompetence. A patient is incompetent if they are:
  - Suicidal
  - Child under 18 with urgent need for medical care
  - Confused
  - Developmentally or mentally disabled and injured/ill
  - Intoxicated and injured/ill
  - Physically/verbally hostile
  - Unconscious
- Consider medical causes for patient's condition
- 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
- Consider **Diazepam, 0.1 mg/kg IV/IM (Maximum dose 10 mg)** as a chemical restraint

### **CHILD ABUSE/NEGLECT**

- 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.
- 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.

<b>Public Children Services Agency</b>		
<b>County</b>	<b>Phone</b>	<b>After Hours Phone</b>
Butler	(513) 887-4055	(513) 868-0888
Champaign	(937) 652-1022	
Clark	(937) 327-1748	(937) 324-8687
Darke	(937) 548-7129	(937) 548-8908
Greene	(937) 562-6600	(937) 372-4357
Miami	(937) 335-4103	
Montgomery	(937) 276-6121	
Preble	(937) 456-1135	
Shelby	(937) 498-7213	
Warren	(513) 695-1546	(513) 695-1600

### **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 3 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.

<b>A</b>	<b>A</b>
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

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assessment & plan	A&P or 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</b>	<b>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
<b>C</b>	<b>C</b>
Calcium	Ca <sup>++</sup>
Canceled	CANX
Cancer	CA
capillary refill time	CRT
carbon dioxide	CO <sub>2</sub>
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 <sup>-</sup>
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.
<b>D</b>	<b>D</b>
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
<b>E</b>	<b>E</b>
ear, nose, & throat	ENT
ectopic pregnancy	EP
electrocardiogram	ECG /

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	EKG
electroencephalogram	EEG
emergency department	ED / ER
emergency department physician	EDP
emergency medical services	EMS
endotracheal (tube)	ET(T)
epinephrine	EPI
equal	(=)
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
<b>F</b>	<b>F</b>
Fahrenheit	F
family history	FH
fetal heart rate	FHR
fever of unknown origin	FOU
flow restricted O <sub>2</sub> powered ventilation device	FRPVD
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
<b>G</b>	<b>G</b>
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
<b>H</b>	<b>H</b>
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
<b>I</b>	<b>I</b>
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
<b>J</b>	<b>J</b>
joule	J
jugular venous distension	JVD
junctional rhythm	JR
<b>K</b>	<b>K</b>
keep vein open	KVO
Kendrick extrication device	KED
Kendrick traction device	KTD

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kilogram	kg.
kilometer	km.
kilometers per hour	Kph
knee, above the	AK
knee, below the	BK
<b>L</b>	<b>L</b>
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	LB
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
<b>M</b>	<b>M</b>
magnesium	Mg.
magnetic resonance imaging	MRI
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
<b>N</b>	<b>N</b>
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
<b>O</b>	<b>O</b>
O2 % of arterial blood	SpO2
obstetrics	OB
of each	Aa
ointment	Ung
once a day	Od
operating room / suite	OR
orogastric (tube)	OG(T)
oropharyngeal airway	OPA



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ounce	oz.
over the counter	OTC
overdose	OD
oxygen	O <sub>2</sub>
<b>P</b>	<b>P</b>
packs per day	p/d
pain	pn.
pair	pr.
paroxysmal atrial tachycardia	PAT
paroxysmal nocturnal dyspnea	PND
paroxysmal SVT	PSVT
partial pressure of CO <sub>2</sub>	PCO <sub>2</sub>
partial pressure of O <sub>2</sub>	PO <sub>2</sub>
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 <sup>+</sup>
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 <sup>st</sup> degree	1°
prior to my arrival	PTA
pulmonary edema / embolism	PE
pulmonary function test	PFT

pulse	P=
pulse oximetry	POX/SPO <sub>2</sub>
pulse rate	PR
pulse, motor, sensation	PMS
pulseless electrical activity	PEA
pupils (=) & reactive to light	PERL
pupils (=) round reactive to light & accomodation	PERRLA
<b>Q</b>	<b>Q</b>
QRS complex	QRS
quart	Qt.
questionable / possible	?
<b>R</b>	<b>R</b>
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
<b>S</b>	<b>S</b>
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 <sup>+</sup>
sodium bicarbonate	NaHCO <sub>3</sub>
sodium chloride	NaCl
solution	soln.
spinal cord	sp.cd.
stable angina	SA

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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
<b>T</b>	<b>T</b>
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
<b>U</b>	<b>U</b>

ultra-high frequency	UHF
umbilical vein	UV
unconscious	unc.
unequal / not equal	
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
<b>V</b>	<b>V</b>
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
<b>W</b>	<b>W</b>
warm & dry	w/d
water	H <sub>2</sub> O
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
<b>X</b>	<b>X</b>
x-ray	XR
<b>Y</b>	<b>Y</b>
year	yr.
years old	y/o - y.o
<b>Z</b>	<b>Z</b>

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**Greater Miami Valley EMS Council & Ohio EMS Region 2**  
**EMS CHECKLIST: SUSPECTED CARDIAC ARREST CHEST PAIN OR EQUIVALENTS**

Patient Name: \_\_\_\_\_ EMS Agency/Unit: \_\_\_\_\_

Date: \_\_\_\_\_ Run # \_\_\_\_\_ Time of Pain Onset: \_\_\_\_\_

(Y)es or (N)o

- \_\_\_\_\_ 1. **HISTORY & PHYSICAL EXAM compatible with Acute MI? Pain Scale (1-10):** \_\_\_\_\_
- \_\_\_\_\_ 2. **INITIAL THERAPY per Standing Orders?**  
Oxygen, Aspirin, Nitro, IV, possibly Morphine. Check for Aspirin Allergy and Viagra use. Monitor cardiac rhythm.
- \_\_\_\_\_ 3. **12-LEAD EKG CHANGES compatible with Acute MI?**  
Use 12-Lead liberally in women, diabetics and the elderly. (N/A if no 12-Lead available).
- \_\_\_\_\_ 4. **TRANSPORT as rapidly as is possible and safe.**
- \_\_\_\_\_ 5. **If patient has 12-Lead EKG evidence of Acute MI, follow destination consideration regarding transport to an Interventional Facility, especially if patient has contraindication to thrombolytics, pulmonary edema or signs of shock.**

Presently, those facilities include DHH, GSH, GVH, KMH, MVH, Springfield Mercy & Springfield Community.

- \_\_\_\_\_ 6. **CONTRAINDICATIONS: Circle any Contraindications to Thrombolytic Therapy (i.e., tPA) that your patient has:**

<b>Absolute &amp; Relative Contraindications to Thrombolytic Therapy (Adapted from ACLS)</b>		
<b>Time Frame</b>	<b>Absolute Contraindications</b>	<b>Relative Contraindications</b>
<b>Right Now</b>	<input type="checkbox"/> Suspected aortic dissection <input type="checkbox"/> Known intracranial neoplasm <input type="checkbox"/> Pregnancy (certain lytic agents)	<input type="checkbox"/> Sever, uncontrolled hypertension (BP > 200/120) <input type="checkbox"/> Current anticoagulant use <input type="checkbox"/> Prolonged (>10 minutes) and potentially traumatic CPR
<b>Past 2 – 4 Weeks</b>	<input type="checkbox"/> Active internal bleeding (except menses)	<input type="checkbox"/> Trauma, especially head trauma <input type="checkbox"/> Major surgery <input type="checkbox"/> Noncompressible vascular punctures <input type="checkbox"/> Internal bleeding
<b>Past Year</b>	<input type="checkbox"/> Non-hemorrhagic stroke or TIA <input type="checkbox"/> Prior exposure to specific lytic agent	<input type="checkbox"/> Intracerebral pathology
<b>Ever</b>	<input type="checkbox"/> Hemorrhagic stroke <input type="checkbox"/> Prior allergic reaction to streptokinase	<input type="checkbox"/> Known bleeding disorder

- \_\_\_\_\_ 7. **NOTIFY the hospital of the transport of all possible MI patients, with or without 12-Lead EKG.**
- \_\_\_\_\_ a) Give verbal report
- \_\_\_\_\_ b) **Include evaluation of EKG.**  
(Label copy of EKG Strip/12-Lead EKG with patient name and leave at hospital)
- \_\_\_\_\_ c) **Complete this Checklist**
- \_\_\_\_\_ 8. **If patient has 12-Lead EKG evidence of Acute MI, follow destination considerations regarding**
- \_\_\_\_\_ a) **Complete Cardiac Arrest Checklist**
- \_\_\_\_\_ b) **Advise MCP ASAP that you are transporting a CARDIAC ALERT patient.**
- \_\_\_\_\_ c) **Attempt to limit scene time 10 minutes or less**
- \_\_\_\_\_ d) **Follow appropriate Treatment Considerations for Specific AMI types.**

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Greater Miami Valley EMS Council  
PREHOSPITAL SUSPECTED CVA/TIA CHECKLIST

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 WITHOUT DELAY to most appropriate hospital. NOTIFY hospital ASAP.

Contact MCP for advice on transport to facility offering thrombolytics for stroke *if* you can arrive within **two hours** of onset of symptoms. Consider air transport for Stroke patients with long transport times.

- \_\_\_\_\_ 6. CONTRAINDICATIONS to Thrombolytic Therapy (i.e. tPA)?

**ABSOLUTE** (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.

**Relative**

\_\_\_\_\_ a) Abnormal blood glucose (< 60 or > 400 mg/dl).

\_\_\_\_\_ b) Recent major surgery or trauma (< 2 months).

\_\_\_\_\_ c) BP > 200 / >120.

\_\_\_\_\_ d) Active peptic ulcer or guaiac positive stools (GI or GU bleeding).

\_\_\_\_\_ e) Recent prolonged or traumatic CPR.

\_\_\_\_\_ f) Hx of CVA, or brain tumor/injury/surgery.

\_\_\_\_\_ g) Current use of anticoagulants (i.e., Coumadin)

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Adult - Intermediate

<b>SPECIAL INFO</b>	<b>DRUG NAME</b>	<b>INDICATION</b>	<b>DOSAGE (ADULT)</b>	<b>REQUIRES MCP</b>
	Albuterol (Proventil) Metered Dose Inhaler	Asthma/Emphysema/COPD	2 puffs from Inhaler	No
	Albuterol (Proventil)	Bronchospasm in Asthma/COPD, Allergic Reaction with wheezing	2.5 mg (3 ml) with 8-10 l/min high flow O <sub>2</sub> by nebulizer. Combine Ipratropium with first Albuterol. May repeat Albuterol up to 3X.	No
	Aspirin (abbreviated as ASA)	Suspected Cardiac Chest Pain	325 mg 4 chewable 81 mg tablets – MUST CHEW	No
In Declared Emergency Only	Atropine	Organophosphate, or Nerve Agent Poisoning (regardless of cardiac rate)	<u>Organophosphate, or Nerve Gas Poisoning:</u> Mark 1 Item 1, 2 mg until lungs are clear to auscultation	Organophosphate, Nerve Agent Poisoning – Yes
	Dawn Soap	Decontamination of tenacious hazardous material on skin	Solution of Dawn soap & water	No
	Dextrose	Diabetic with mental status changes. Evidence of hypoglycemia in cardiac arrest.  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	50% solution, 25 gm IVP  In Non Arrest Pt: May repeat in 10 min. if pt. fails to respond or BS remains <60.	No

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SPECIAL INFO	DRUG NAME	INDICATION	DOSAGE (ADULT)	REQUIRES MCP
	Diazepam (Valium)	Seizures  As "chemical restraint" in violent patient  Recent Cocaine/Crack use with significant hypertension or hemodynamically significant tachycardia (HR>100 SBP <100)	<u>Seizures</u> 5 mg slow IVP over 2 minutes. May repeat dose once. If unable to start IV, consider Diazepam 5 mg. IM.  <u>Other</u> 5 mg slow IVP over 2 minutes. May repeat dose once. If unable to start IV, consider Diazepam 5 mg. IM.	No
In Declared Emergency Only	Diazepam (Valium) CANA	Seizures associated with Organophosphate or Nerve Agent MCI	10mg IM Autoinjector	Yes
	Diphenhydramine (Benadryl)	Allergic Reaction/Anaphylaxis: Wheezes Present In anaphylaxis pt. who goes into arrest if not already given	<u>Allergic Reaction/Anaphylaxis:</u> 1 mg/Kg (Max dose 50 mg) <b>IM or</b> slow IVP over 3 minutes	No
	EpiPen	Severe symptomatic allergic reaction	0.3 mg Auto injector	No

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SPECIAL INFO	DRUG NAME	INDICATION	DOSAGE (ADULT)	REQUIRES MCP
	Glucagon	<p>Hypoglycemia if no IV access.            Stroke, generalized hypothermia without arrest, altered level of consciousness of unknown cause, or seizures with BS &lt; 60, no BS monitor available, or strong suspicion of hypoglycemia despite BS reading, if no IV access.</p> <p>Calcium Channel Blocker or Beta Blocker OD.</p> <p>Allergic Reaction/Anaphylaxis unresponsive to Epinephrine.</p>	<p><u>Hypoglycemia:</u> 1 mg IM</p> <p><u>Ca. Channel Blocker or Beta Blocker OD:</u> 1 mg IVP/IM</p> <p><u>Allergic Reaction/Anaphylaxis unresponsive to Epinephrine:</u> 2 mg IVP or IM</p>	<p>Hypoglycemia – No</p> <p>Ca. Channel Blocker or Beta Blocker OD – Yes</p> <p>Allergic Reaction/Anaphylaxis – No</p>
	Ipratropium (Atrovent)	Bronchospasm in Asthma/COPD, Allergic Reaction with wheezing	0.5 mg combined w/first dose of Albuterol nebulized	No
	Morphine	Pain relief in AMI and other painful conditions	<p>1<sup>st</sup> dose - Up to 5 mg slow IVP (2-3 minutes) based on patient's weight, provided SBP&gt;100.</p> <p>Repeat Dose - May repeat up to 5 mg            If unable to establish IV, Morphine SQ 5 mg.</p> <p>Repeat SQ is indicated only if transport time is greater than 30 min.            SQ is NOT indicated for Pulmonary Edema</p>	No



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SPECIAL INFO	DRUG NAME	INDICATION	DOSAGE (ADULT)	REQUIRES MCP
	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.  Suspicion of drug abuse in cardiac arrest.	Up to 4 mg IVP varying rate according to pt. severity. IM or SQ if IV unsuccessful. OR 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.	No
	Nitroglycerine (abbreviated as NTG in the orders) (Nitrostat)	Chest pain or pulmonary edema with BP over 100 in pt. who is at least 25 yrs old or has prescribed Nitro.  Crack / Cocaine Overdose with Chest Pain and at least 25 yrs. Old.	0.4 mg SL q 5 min for continued chest pain up to a total of 3 tablets.	No
	Oral Glucose	Hypoglycemia if no IV access or available Glucagon. 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.	1 tube  May be repeated in 10 mins. If BS remains < 60.	No
In Declared Emergency Only	Pralidoxime (2-PAM)  (Mark I Auto-injector, Item 2) to be used following Atropine	To be used following Atropine in Organophosphate, or Nerve Gas Poisoning.  Both for protection of public safety personnel who walk into scene & become unexpectedly contaminated as well as for treatment of civilian patients at the scene.	600 mg IM AutoInjector	Yes

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<b>SPECIAL INFO</b>	<b>DRUG NAME</b>	<b>INDICATION</b>	<b>DOSAGE (ADULT)</b>	<b>REQUIRES MCP</b>
	Sudecon Wipes	Pepper Spray	Use as needed to assist with decontamination	No

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Pediatric - Intermediate

<b>SPECIAL INFO</b>	<b>DRUG NAME</b>	<b>INDICATION</b>	<b>DOSAGE (PEDI)</b>	<b>REQUIRES MCP</b>
	Albuterol (Proventil) Metered Dose Inhaler	Asthma/Emphysema/COPD	2 puffs from Inhaler	No
	Albuterol (Proventil)	Bronchospasm in Asthma/COPD, Allergic Reaction with wheezing	2.5 mg (3 ml) with 8-10 l/min high flow O <sub>2</sub> by nebulizer. Combine Ipratropium with first Albuterol. May repeat Albuterol up to 3X.	No
In Declared Emergency Only	Atropine	Organophosphate, or Nerve Agent Poisoning (regardless of cardiac rate)	<u>Organophosphate or Nerve Gas Poisoning</u> <40 lbs: 0.5 mg IVP/IO/IM or 0.5 mg Atropine Auto-injector >40 lbs: 1.0 mg IVP/IO/IM or 1.0 mg Atropine Auto-injector > 90 lbs: 2.0 mg IVP/IO/IM or 2.0 mg Atropine Auto-injector Atropine concentration in multiple-dose vial is 0.4 mg/ml.	Organophosphate, Nerve Agent Poisoning – Yes
	Dawn Soap	Decontamination of tenacious hazardous material on skin	Solution of Dawn soap & water	No

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<b>SPECIAL INFO</b>	<b>DRUG NAME</b>	<b>INDICATION</b>	<b>DOSAGE (PEDI)</b>	<b>REQUIRES MCP</b>
	Dextrose	Diabetic with mental status changes. Evidence of hypoglycemia in cardiac arrest.  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	Children < 25 kg – 25% solution IVP, 2 ml/kg OR 1 ml/kg 50% solution diluted with equal volume of saline IVP. Children > 25 kg – 1 ml/kg 50% solution IVP Infants < 1 year old – 25% solution 2 ml/kg diluted with equal volume of saline IVP.  In Non Arrest Pt: May repeat in 10 min. if pt. fails to respond or BS remains <60.	No
	Diazepam (Valium)	Seizures  As "chemical restraint" in violent patient	<u>Seizures</u> 0.2 mg/kg IVP slowly (1 mg/min) Maximum dose 5 mg. May repeat up to 5 mg slow IVP.	No
In Declared Emergency Only	Diazepam (Valium) CANA	Seizures associated with Organophosphate or Nerve Agent MCI	10mg IM Autoinjector	Yes
	Diphenhydramine (Benadryl)	Allergic Reaction/Anaphylaxis: Wheezes Present In anaphylaxis pt. who goes into arrest if not already given	<u>Allergic Reaction/Anaphylaxis:</u> 1 mg/Kg (Max dose 50 mg) <b>IM or</b> slow IVP over 3 minutes	No
	EpiPen	Severe symptomatic allergic reaction	Patients < 30 kg – 0.15 mg Auto injector Patients > 30 kg - 0.3 mg Auto injector	No

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<b>SPECIAL INFO</b>	<b>DRUG NAME</b>	<b>INDICATION</b>	<b>DOSAGE (PEDI)</b>	<b>REQUIRES MCP</b>
	Glucagon	<p>Hypoglycemia if no IV access.            Stroke, generalized hypothermia without arrest, altered level of consciousness of unknown cause, or seizures with BS &lt; 60, no BS monitor available, or strong suspicion of hypoglycemia despite BS reading, if no IV access.</p> <p>Calcium Channel Blocker or Beta Blocker OD.</p>	<p><u>Hypoglycemia:</u> 1 mg IM</p> <p><u>Ca. Channel Blocker or Beta Blocker OD:</u> 1 mg IVP/IM</p>	<p>Hypoglycemia – No</p> <p>Ca. Channel Blocker or Beta Blocker OD – Yes</p>
	Ipratropium (Atrovent)	Bronchospasm in Asthma/COPD, Allergic Reaction with wheezing	0.5 mg combined w/first dose of Albuterol nebulized	No
	Morphine	Pain relief in peds ≥ 2 years old	<p>1<sup>st</sup> dose – 0.1 mg/kg slow IVP (2-3 minutes) (max dose 5 mg) provided appropriate SBP.</p> <p>Repeat Dose - May repeat up to 5 mg            If unable to establish IV, Morphine SQ 5 mg.</p> <p>Repeat SQ is indicated only if transport time is greater than 30 min.</p>	<p>No</p> <p>Repeat Dose - Yes</p>

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SPECIAL INFO	DRUG NAME	INDICATION	DOSAGE (PEDI)	REQUIRES MCP
	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.  Suspicion of drug abuse in cardiac arrest.	0.1 mg/kg (max dose 4 mg) IVP varying rate according to pt. severity. OR 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
	Oral Glucose	Hypoglycemia if no IV access or available Glucagon. 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.	1 tube  May be repeated in 10 mins. If BS remains < 60.	No
In Declared Emergency	Pralidoxime (2-PAM)  (Mark I Auto-injector, Item 2) to be used following Atropine	To be used following Atropine in Organophosphate, or Nerve Gas Poisoning.  Both for protection of public safety personnel who walk into scene & become unexpectedly contaminated as well as for treatment of civilian patients at the scene.	Children > 20 kg: 600 mg IM AutoInjector	Yes
	Sudecon Wipes	Pepper Spray	Use as needed to assist with decontamination	No

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Intermediate - Therapeutic Actions, Contraindications, and Precautions

<b>DRUG NAME</b>	<b>THERAPEUTIC ACTION</b>	<b>CONTRAINDICATION</b>	<b>PRECAUTIONS/SIDE EFFECTS</b>
Albuterol (Proventil)	Bronchodilator	Prior hypersensitivity reaction to Albuterol, cardiac dysrhythmias associated with tachycardia.	Usually dose related, restlessness, apprehension, dizziness, palpitations, tachycardia, dysrhythmias.  May precipitate angina pectoris and dysrhythmias.
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.  Should be given as soon as possible to the patient with AMI.
Atropine  Mark 1 / AutoInjector	Anticholinergic as a result of WMD MCI	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.  Atropine causes papillary dilation rendering the pupils nonreactive. Pupil response may not be useful in monitoring CNS status.
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.

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<b>DRUG NAME</b>	<b>THERAPEUTIC ACTION</b>	<b>CONTRAINDICATION</b>	<b>PRECAUTIONS/SIDE EFFECTS</b>
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.  May cause local venous irritation.
Diphenhydramine (Benadryl)	Prevents the physiologic actions of histamine by blocking histamine receptors.	Patients taking monoamine 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.  Use cautiously in patients with CNS depression or lower respiratory diseases such as asthma.
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.  May increase myocardial oxygen demand.  Syncope has occurred following epinephrine administration to asthmatic children.
EpiPen	Causes bronchodilation	Same as Epinephrine	Same as Epinephrine at low doses
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.  Should not be considered a first line choice for hypoglycemia.
Ipratropium (Atrovent)	Causes bronchodilation by anticholinergic 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.



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<b>DRUG NAME</b>	<b>THERAPEUTIC ACTION</b>	<b>CONTRAINDICATION</b>	<b>PRECAUTIONS/SIDE EFFECTS</b>
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.  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).  May not reverse hypotension. Caution should be exercised when administering to narcotic addicts (may precipitate withdrawal with hypertension, tachycardia and violent 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.
Pralidoxime (2-PAM)  (Mark I Auto-injector, Item 2) to be used following Atropine	Reactivates cholinesterase after poisoning with anticholinesterase agents. (Organophosphate or Nerve Gas) Reverses muscle paralysis after organophosphate poisoning.	Hypersensitivity	Use with caution in myasthenia gravis, renal impairment, pregnancy, lactation or children.

2007 GMVEMSC Standing Orders  
EMT-Intermediate Pretest

**(Disclaimer:**

**The pretest is not inclusive of the questions and content of the post test. You as the provider are responsible for all material contained within the appropriate Standing Orders Training Manual. )**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Airway Management:**

1. Acceptable ET tube placement confirmation devices for a 55 kg, 14 year old pediatric patient in cardiac arrest are:
  - A. Correct adult nasotracheal placement is at the 22 cm. mark at the nose.
  - B. The BAAM is a confirmation device utilized with oral ETT placement.
  - C. Correct oral placement will be at the 22 cm. mark at the teeth
  - D. EDD and EtCO<sub>2</sub> detectors can identify placement in the mainstem bronchus.
  
3. You have just intubated an apneic and pulseless patient. Choose the single *best* answer that describes your options of tube confirmation.
  - A. Colormetric EtCO<sub>2</sub>
  - B. BAAM
  - C. Pulse Oximeter
  - D. EDD
  
4. The proper depth for an ETT placed in a pediatric patient can be calculated by tube size x \_\_\_\_ = mm @ front teeth or gum line.
  - A. 7
  - B. Patient age.
  - C. 3
  - D. 5

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5. An EDD may only be used on pediatric patients who are older than \_\_\_\_ years of age and weigh at least \_\_\_\_ pounds.
6. When deciding whether to intubate a patient, which of the following sets of criteria *best* describes the factors that should be considered:
- A. Abnormal breath sounds, cyanosis, patient's medication history
  - B. Inadequate chest expansion, respiratory effort, abnormal or absent breath sounds, accessory muscle use
  - C. Blood pressure, heart rate, temperature, pulse oximeter
  - D. Communicable diseases, smoking history, occupational history
7. Dual lumen airways, LMAs, and other rescue airways are appropriate devices when:
- A. They are approved by the Medical Director
  - B. Your Medical Director has not approved them for your use
  - C. The patient does not tolerate an oral airway
  - D. All of the above
8. You are presented with an adult patient in respiratory distress. There are no breath sounds on the right and the patient is hypotensive. Which intervention is correct for this patient?
- A. Decompress the chest with a 14 gauge, 2 ½ inch angiocath placed in the left 2<sup>nd</sup> intercostal space, midclavicular line
  - B. Decompress the chest with a 14 gauge, 2 ½ inch angiocath placed in the left 4<sup>th</sup> intercostal space, midclavicular line
  - C. Decompress the chest with a 14 gauge, 2 ¼ inch angiocath placed in the right 2<sup>nd</sup> intercostal space, midclavicular line
  - D. Decompress the chest with a 14 gauge, 2 ½ inch angiocath placed in the right 4<sup>th</sup> intercostal space, midclavicular line
9. When is it appropriate to attempt a "Rescue Airway" device?
10. What adjuncts/techniques are appropriate for maintaining proper endotracheal tube placement?

## Cardiovascular (MI and Stroke)

11. Conditions mimicking stroke include::

12. You are called for a 54 year old male with severe chest pain. His BP is 170/90, HR 88, R 20. He has no cardiac history. You are 5 minutes from a facility without 24 hour interventional capabilities, and 25 minutes from a facility with 24 hour interventional capabilities. What is your *best* transport plan:

- A. Transport to closest facility for stabilization
- B. Transport to the facility without interventional capabilities
- C. Transport to the facility with interventional capabilities
- D. None of the above

13. You arrive to find an 73 year old female patient sitting at the kitchen table, slumped to their right side. The spouse states that she became unresponsive while eating breakfast. The vitals are as follows: P 60, BP 180/104, RR 12. The patient has drooping to the right side of his face. Which of the following would be *inappropriate*?

- A. Contact Medical Control advising you are enroute with a possible MI patient
- B. Check for hypoglycemia
- C. Complete the GMVEMSC Prehospital CVA/TIA Checklist
- D. Place an Oral or Nasopharyngeal Airway

14. The patient you are treating is 20 year old complaining of a sudden onset of midsternal chest pain and mild SOB while mowing the yard. The patient has no allergies. The patient is a heavy smoker and has a family history of cardiac disease. Which of the following treatments are contraindicated?

- A. Administering 324mg of Aspirin
- B. Administering 0.4mg of Nitroglycerin
- C. Administering O<sub>2</sub>
- D. None of the above

15. List four of the absolute contraindications to the use of thrombolytics according to the Suspected Cardiac Chest Pain Checklist?

16. All of the following statements concerning aspirin administration are true except:
- A. Dose is 81 mg
  - B. May cause bronchial spasm in some asthma patients
  - C. Indicated for sudden onset of suspected cardiac chest pain
  - D. Must be chewed
17. Anticoagulant use is an absolute contraindication for thrombolytics according to the Chest Pain check list.
- A. True
  - B. False
18. You are called to a local business for a 63 year old male with severe chest pain. His BP is 168/90, HR 88, R 20. He has no cardiac history. You are 5 minutes from a facility without 24 hour interventional capabilities, and 25 minutes from a facility with 24 hour interventional capabilities. Which is your *best* transport destination:

### **Cardiac Emergencies and BLS Changes**

19. When being treated by EMS Personnel the un-witnessed pediatric cardiac arrest patients may have 5 cycles (2 minutes) of CPR prior to AED/Defibrillation
- A. True
  - B. False
20. Your patient currently holds an Ohio DNR Comfort Care-Arrest. She is having severe chest pain and S.O.B. Which of the following are permitted?
- A. Pain Control
  - B. Oxygen
  - C. Cardiac monitoring
  - D. All of the following are permitted
21. When being treated by EMS Personnel the Un-witnessed adult cardiac arrest patients may have 5 cycles (1 minute) of CPR prior to AED/Defibrillation
- A. True
  - B. False

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22. Under what condition(s) can an Intermediate call for orders to terminate a cardiac arrest?
23. Which statement(s) is correct regarding two-rescuer CPR for the healthcare provider?
- A. Rescuers should be changed after 5 cycles or about every 2 minutes.
  - B. Interruptions should be 10 seconds or less
  - C. Once advanced airway is in place, 1 breath should be given every 6 to 8 seconds without a pause in CPR to facilitate breath delivery.
  - D. All of the above are true.
24. AEDs are to be used for pediatric patients at what age?
- A. 3 months
  - B. > 1 year
  - C. < 10
  - D. > 8 years old
25. An AED should be used:
- A. According to the new AHA guidelines
  - B. As the machine is programmed
  - C. Never
  - D. Both A and B are correct

**Haz Mat & Environmental**

26. What injuries may occur if a patient soaked in diesel fuel is left lying on their fuel saturated clothing?
27. A ten year old child was helping his mother pump gas at the local gas and becomes saturated with gasoline. What is your course of action?
- A. Flush the child's eyes, lecture the mother on her reckless behavior and let her sign a refusal statement
  - B. Remove the child's contaminated clothing, thoroughly flush with water, contact the hospital, enter the hospital only after receiving permission
  - C. Rinse the child with water, protect the child's modesty by leaving their clothing intact, transport to the hospital, complete a Social Services Referral form
  - D. Instruct the mother to take the child home and bathe him

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28. Major Trauma patients may be decontaminated enroute to ED
- A. True
  - B. False
29. The patient you are treating has a laceration to the head and is bleeding profusely. The patient has a history of cancer and had chemotherapy via IV this morning. Knowing this you and your crew are at risk for exposure to hazardous materials and should use what PPE?
30. EMS personnel must provide which of the following information before obtaining the CHEMPAK?
- A. Estimated number of adult patients
  - B. Estimated number of pediatric patients
  - C. Identification of agent if known and route of exposure
  - D. All of the above
31. List the resources the EMT-B may use in the case of a spill of home chemotherapy medications:

**OB/GYN/Neonatal**

32. In administering CPR to a patient who is 8 months pregnant, appropriate care would be defined as:
33. You arrive on the scene of a reported “miscarriage”. You find a 16 year old female complaining of abdominal pain and she states she is passing large “clots.” Which statement is TRUE regarding your treatment?
- A. Encourage patient to follow up with her obstetrician, obtain a refusal signature and place unit in-service
  - B. Flush tissue down the toilet, estimate blood loss, treat for shock, psychological support, transport
  - C. Provide psychological support, treat for shock, and transport all expelled tissue
  - D. None of the above

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34. Which is true of OB Emergencies/ Child Delivery?
- A. Pregnant patient of any age > 20 weeks gestation should be taken to a maternity department; < 20 weeks gestation should go to the ED
  - B. An internal vaginal exam should always be done prior to transport
  - C. APGAR Scores should be obtained at 1 minute and 3 minutes
  - D. An OB patient demonstrating “normal” vital signs can not be suffering from hypovolemic shock
35. When faced with a prolapsed umbilical cord during a delivery, the paramedic should do all of the following except:
- A. Check the cord for a pulse
  - B. Apply a dry dressing around the exposed cord
  - C. Insert two fingers to prevent pressure on the cord
  - D. Do not attempt to re-insert the cord
36. The newborn you delivered has a heart rate of 50 with a respiratory rate of 10. The ratio of compressions to breaths should be:
- A. 5:1
  - B. 3:1
  - C. 30:2
  - D. 15:2
37. Upon delivering a newborn how often should you perform the APGAR scale?
38. What is the appropriate position of transport for a hypotensive patient, who is 7 months pregnant be transported?

**Trauma Emergencies**

39. List the Trauma Centers in the Region:



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40. Which of the following statements about cerebral herniation are correct?
- A) Ventilate @ a rate of 12 BPM
  - B) Hyperventilation will constrict the vessels in the brain
  - C) Hyperventilation will dilate the cerebral vessels
  - D) Signs include equal pupils, tachycardia, and posturing
41. A patient who is unconscious and unresponsive would have a GCS of:
42. Air medical transport is not appropriate for:
43. Regarding trauma patients, scene times should be limited to \_\_\_\_ minutes or less, except when there are extenuating circumstances.
44. A 28 year old maternity patient was a restrained passenger in a “T” type collision in a 40 mph zone at an intersection. There is intrusion into the passenger compartment and the patient complains of abdominal pain. Which facility is the most appropriate, if your transport time to all facilities is within 20 minutes?
- A. Any hospital with a maternity department
  - B. Children's Medical Center
  - C. Adult trauma Center
  - D. The closest hospital

**Medication Administration and Techniques**

45. EMT-I's may administer Atropine, 2-Pam, and Diazepam auto-injectors under what condition?
46. When there is a drug bag discrepancy, which one of the following is an appropriate action for the EMS provider who encounters the problem to take?
- A. Turn in the blue seal with the hospital sticker that was attached to the drug bag in question, along with a written description of the problem found to his or her EMS officer
  - B. Contact the medical director
  - C. Contact the State Pharmacy Board
  - D. Send a statement of what occurred to the GMVEMSC

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47. Which of the following statements is *true* concerning the EpiPen?
- A. EpiPen Jr. contains 0.15 mg
  - B. EpiPen Jr. is indicated for patients <33 pounds
  - C. Adult EpiPen is indicated for patients < 66 pounds
  - D. Adult EpiPen contains 0.15 mg
48. Which is *not true* regarding use of Morphine with Extremity Fractures, Dislocations, and Sprains?
- A. Morphine, up to 5 mg. slow IVP (2-3 minutes) based on patient weight, provided SBP > 100 for pain relief
  - B. If unable to obtain IV then 5 mg. of Morphine may be given SQ
  - C. IVP dose may be repeated
  - D. SQ dose may not be repeated
49. When administering Diphenhydramine to an adult patient with an allergic reaction, what is the correct dose?
50. You are about to administer Valium intravenously to a patient who is actively seizing. The concentration on hand is 10 mg/mL. You would be administering \_\_\_\_ mg in \_\_\_\_ml
51. Why are prescribed inhalers helpful for patients suffering from asthma, emphysema, or chronic bronchitis?
- A. Inhalers relax constricted bronchial tubes
  - B. Inhalers slow the patient's heart rate
  - C. Inhalers constrict dilated bronchial tubes
  - D. Inhalers reduce pain and slow breathing
52. Which of the following is the correct EpiPen dose for an Adult having an allergic reaction?
- A. EpiPen 0.15 mg
  - B. EpiPen 3.0 mg
  - C. EpiPen 1.5 mg
  - D. EpiPen 0.3 mg
53. In a pediatric patient with suspected anaphylaxis, which form of Epinephrine maybe administered?
- A. Epinephrine 1:1,000 SQ
  - B. EpiPen Jr.
  - C. Both A and B
  - D. Neither A nor B

54. Prior to administering Nitroglycerine, the EMT-B should ask the patient if they are taking what other medications?

**Miscellaneous**

55. It is permissible for an EMT-I to transport a patient that has a physician prescribed I.V. pump.  
A. True  
B. False

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**GREATER MIAMI VALLEY EMS COUNCIL**  
**YEAR 2007 INTERMEDIATE SKILL SHEETS**

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

**SKILLS TESTERS:** 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 Intermediate Mega Code sheets used for testing.

Manual External Defibrillator (covered in Mega Code)	
Orotracheal Intubation of Nontrauma Patient -----	86
Automated External Defibrillator -----	87

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

Orotracheal Intubation -----	88
Intraosseous Infusion -----	89
Use of Length / Weight Based Tape (covered in Mega Code)	

**IV and Medications**

Nebulizer with Bag-Valve Device -----	90
Medication Administration -----	91

**Trauma**

Inline Orotracheal Intubation of the Trauma Patient -----	94
Chest Decompression -----	95

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

NAME \_\_\_\_\_ DATE \_\_\_\_\_

LEVEL:    \_\_\_ Paramedic    \_\_\_ Intermediate    \_\_\_ Basic

<b>STEPS</b>	<b>1st Test</b>	<b>2nd Test</b>	<b>3rd Test</b>
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 CO2 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 under 5 yoa or 20 kg.			
P. Confirm tube placement with at least 3 other 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 | 6. Suction equipment                               | 10. Confirmation Device      |
| 2. Stylet                        | 7. Stethoscope                                     | 11. C-collar                 |
| 3. Laryngoscope Blade & handle   | 8. Gloves & Eye protection                         | 12. Adult Intubation Manikin |
| 4. Magill forceps                | 9. Commercial tube holder or proper taping method. |                              |
| 5. 10 ml. syringe                |  |                              |

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.

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

NAME \_\_\_\_\_ DATE \_\_\_\_\_

LEVEL:    \_\_\_ Paramedic    \_\_\_ Intermediate    \_\_\_ Basic    \_\_\_ First Responder

<b>STEPS</b>	<b>1st Test</b>	<b>2nd Test</b>	<b>3rd Test</b>
A. Perform an initial assessment of the patient.			
B. Begin CPR with 100% oxygen while preparing AED.			
a. If witnessed arrest and no defibrillator available, precordial thump.			
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

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

NAME \_\_\_\_\_ DATE \_\_\_\_\_

LEVEL:    \_\_\_Paramedic    \_\_\_ Intermediate    \_\_\_Basic

<b>STEPS</b>	<b>1st Test</b>	<b>2nd Test</b>	<b>3rd Test</b>
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 CO2 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 yoa or 20 kg.			
N. Confirm tube placement with at least 3 other 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 | 6. Stethoscope                                     | 10. C-collar or towel roll  |
| 2. Proper size Stylet            | 7. Gloves & Eye protection                         | 11. Pedi intubation manikin |
| 3. Laryngoscope Blade & handle   | 8. Commercial tube holder or proper taping method. |                             |
| 4. Magill forceps                | 9. Confirmation Device                             |                             |
| 5. Suction equipment             |  |                             |

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.

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

NAME \_\_\_\_\_ DATE \_\_\_\_\_

LEVEL:    \_\_\_Paramedic    \_\_\_Intermediate

<b>STEPS</b>	<b>1st Test</b>	<b>2nd Test</b>	<b>3rd Test</b>
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 medication, 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.



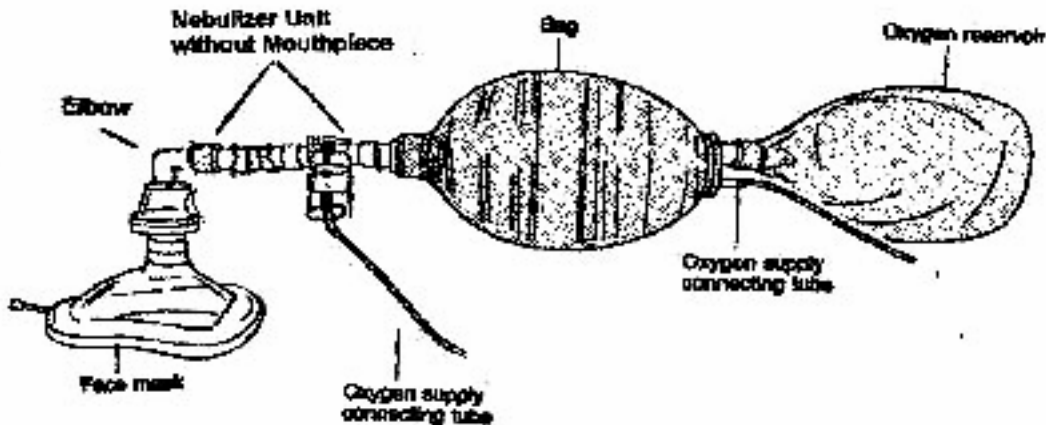
**ADULT PROTOCOL SKILL EVALUATION**  
**SUBJECT: USE OF NEBULIZER WITH BAG-VALVE DEVICE**

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 @ 8-12L/min. and 2 <sup>nd</sup> oxygen supply to bag-valve @ 12-15 L/min. (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.**

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**ADULT PROTOCOL SKILL EVALUATION**  
**SUBJECT: MEDICATION ADMINISTRATION**

NAME \_\_\_\_\_

DATE \_\_\_\_\_

LEVEL: \_\_\_\_\_ Intermediate

<b>STEPS</b>	<b>1st Test</b>	<b>2nd Test</b>	<b>3rd Test</b>
<b><u>ASPIRIN</u></b>			
A. List the indication for use			
B. Demonstrate or voice infection precautions.			
C. Indicate dose and administration Adult			
D. Check the medication for expiration date or discoloration.			
E. Discuss precautions and side effects			
<b><u>DEXTROSE 50% &amp; 25%</u></b>			
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)			
<b><u>DIAZEPAM</u></b>			
A. List the indication for use			
B. Demonstrate or voice infection precautions.			
B. Indicate dose and administration Adults/Peds			
C. Check the medication for expiration date and for cloudiness or discoloration.			
D. Discuss precautions and side effects			
<b><u>EPINEPHRINE 1:1,000 30 ml MULTI-DOSE VIAL</u></b>			
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: Remove cap Cleanse with alcohol prep 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.			

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<b>STEPS</b>	<b>1st Test</b>	<b>2nd Test</b>	<b>3rd Test</b>
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.			
<b><u>EPIPEN ADMINISTRATION</u></b>			
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			
<b><u>GLUCAGON</u></b>			
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			
<b><u>MARK I KITS</u></b>			
A. Don appropriate PPE. If pt. or public safety worker exhibits symptoms of nerve gas exposure, utilize Mark 1 Kit.			
B. Remove Mark 1 simulation kit from protective pouch.			
C. Hold unit by plastic clip.			
D. 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			
E. Grasp unit & position green tip of AtroPen Simulator on victim's outer thigh.			
F. Push firmly until auto-injector fires.			
G. Hold in place for 10 seconds to ensure Atropine has been fully delivered.			
H. 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.			

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<b>STEPS</b>	<b>1st Test</b>	<b>2nd Test</b>	<b>3rd Test</b>
I. Grasp unit and position black tip of the Combo Pen simulator on victim's thigh.			
J. Push firmly until auto-injector fires.			
K. Hold in place for 10 seconds to ensure 2-PAM has been properly delivered.			
L. If nerve agent symptoms are still present after 3 - 5 minutes, repeat injections. If symptoms still exist after an additional 3 - 5 minutes, repeat injection for a third time. <b>In MCI - If, after the third set of injections, symptoms remain, continue with Atropine, as available, until lungs are clear to auscultation.</b> <b>In non-MCI - If, after the third set of injections, symptoms remain, do not give any more antidotes. Seek medical help.</b>			
<b><u>MORPHINE</u></b>			
A. List the indication for use			
B. Demonstrate or voice infection precautions.			
C. Indicate adult dose and administration Adults/Peds			
D. Check the medication for expiration date and for cloudiness or discoloration.			
E. Discuss precautions and side effects			
<b><u>NALOXONE</u></b>			
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			
<b><u>NITROGLYCERIN</u></b>			
A. List the indication for use			
B. Demonstrate or voice infection precautions.			
B. Indicate dose and administration Adult			
C. Check the medication for expiration date or discoloration.			
D. Discuss precautions and side effects			

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

NAME \_\_\_\_\_ DATE \_\_\_\_\_

LEVEL:    \_\_\_ Paramedic    \_\_\_ Intermediate    \_\_\_ Basic

<b>STEPS</b>	<b>1st Test</b>	<b>2nd Test</b>	<b>3rd Test</b>
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 CO2 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 under 5 yoa or 20 kg.			
P. Confirm tube placement with at least 3 other 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 | 6. Suction equipment                               | 10. Confirmation Device      |
| 2. Stylet                        | 7. Stethoscope                                     | 11. C-collar                 |
| 3. Laryngoscope Blade & handle   | 8. Gloves & Eye protection                         | 12. Adult Intubation Manikin |
| 4. Magill forceps                | 9. Commercial tube holder or proper taping method. |                              |
| 5. 10 ml. syringe                |  |                              |

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: CHEST DECOMPRESSION**

NAME \_\_\_\_\_ DATE \_\_\_\_\_

LEVEL:    \_\_\_ Paramedic    \_\_\_ Intermediate

<b>STEPS</b>	<b>1st Test</b>	<b>2nd Test</b>	<b>3rd Test</b>
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 2 1/4" (or longer) catheter
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

**GMVEMS COUNCIL OPERATING GUIDELINES**  
**I. DRUG BOX EXCHANGE PROGRAM**  
**II. STANDING ORDERS**

Revised: November 1999; November 2000; May 2002; November 12, 2003; October 5, 2005

**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 BOX EXCHANGE COMMITTEE**

Co-Chairmen:           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

**MEETINGS**

Scheduled:            Two meetings per year: March and September  
Unscheduled:         As needed to discuss problem areas

**OPERATING GUIDELINES**

**GENERAL**

- There are two types of drug bags: *ALS/BLS* and *BLS* (fanny pack style).
- All drug bags, both ALS 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 bags.
- 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 boxes will be removed from all locations of said Fire/EMS/Private ambulance service.
  - The GMVEMS Council will distribute written notification that the said service is in violation of the operating policy of the Drug Box Exchange Program:
    - Medical Director
    - Regional Physician Advisory Board
    - OH State Pharmacy Board
    - OH Division of EMS
    - All hospitals participating in the drug box exchange program
- GMVEMS Council maintains an information database for all EMT personnel authorized to participate in the Drug Bag Exchange Program.

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- Rosters with expiration dates for EMT-P, EMT-B and ACLS certifications are distributed annually for review and updates.

**PARTICIPATION REQUIREMENTS**

- Active membership in the GMVEMS Council.
- Area hospital participation according to Council guidelines. (See Addendum C.)
- 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.
- Signed agreement to abide by the Operating Guidelines for the Drug Bag Exchange Program (see Addendum D).
- Agreement to complete an annual skills check and written test 1 January-30 April 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 ideal temperature span is 59-86 degrees F.
- In order to utilize an ALS 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 1<sup>st</sup>.*
    - *Submission of a copy of a current DEA license to GMVEMSC Council office. It is the responsibility of the Agency to keep the DEA license current and submit a renewed copy to Council.*

**LEVELS OF PARTICIPATION**

**Paramedic Level**

- Each drug bag consists of a navy, standard issue drug bag with a separate, red outside pouch sewn into it.
- The red pouch is used to carry the following medications: Albuterol *Inhaler*, Nitrostat, EpiPen, EpiPen Jr. and baby ASA. All other medications are carried in the standard issue drug bag.
- Each standard issue bag is labeled with a metal tag from 850 – up.
- Upon completion of a transport, the entire unit is exchanged at the receiving hospital *with the appropriate paperwork.*

**Intermediate Level**

**A side compartment labeled “intermediate” to carry the following medications ONLY: 50% Dextrose in Water, 25% Dextrose in Water, Diazepam, Diphenhydramine,**

*Epinephrine 1:1,000 multidose vial, Glucagon, Morphine Sulfate, Narcan*



### **Basic Life Support**

- A fanny-pack style bag used to carry the following medications ONLY: Albuterol *Inhaler*, Nitrostat, EpiPen, EpiPen Jr., and baby ASA.
- 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*.

### **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 combo-bags may be exchanged one-for-one with another ALS/BLS combo-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 sheets when exchanging a drug bag.

### **Documentation Drug Usage**

- Morphine, Midazolam and Valium are scheduled drugs, which means they must be tracked from the time they are dispensed into the drug bag up to the time of administration.
- There are two methods of documenting
- To insure the medications are properly accounted for, all Intermediate/Paramedics will document:
  1. The drug name
  2. The amount used
  3. The amount wasted
  4. The signature of the two witnesses if wastage (the person wasting the medication can also 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 medication sheet in addition to documentation on the run sheet.* This information shall be on both the original EMS department form and the hospital copy for reference if needed.

### **WASTED DRUG PROCEDURE**

- Morphine, Midazolam and Valium are scheduled drugs. If a medication is partially administered, any unused portion must also be accounted for. If a medication is drawn up in a syringe for administration, then the partially used syringe shall have the name of the drug put on the syringe by the person drawing the medication. That unused portion can be left with the nurse or physician who is caring for the patient, should they decide to use the remaining portions.
- If the unused portion is not going to be used and needs to be wasted, then the provider must have a nurse or physician present to witness the waste of the drug. A pharmacist can also be a witness if a nurse or physician is not available.
- To insure the medications are properly accounted for, all Paramedics and Intermediates will document:
  - The drug name
  - The amount used
  - The amount wasted

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The signature of the two witnesses

- One witness will be the 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 medication sheet in addition to documentation on the run sheet.*** 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 advisors will be notified that the annual 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 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 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, will be taken***
- If copy of drug license(s) is not received by due date, GMVEMS Council notifies EMS department medical advisor. GMVEMS Council reserves the right to initiate the non-compliance action process for any Fire/EMS/Private Ambulance service that cannot 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 advisor. GMVEMS Council reserves the right to initiate the non-compliance action process for any Fire/EMS/Private Ambulance service that cannot provide documentation for drug license(s) renewal.

**Drug Bag Discrepancies**

All discrepancies (missing meds, expired meds, wrong medication or dose, altered or tampered meds, drug box number discrepancy, etc.) that are found by any agency or department (EMS provider, pharmacist, and/or EMS Coordinator) shall be reported to the GMVEMSC and to the appropriate state agency as noted in the following. This information will be forwarded to the Drug Box Committee Chairperson.

**EMS Provider:**

- A. If, while on a call, an EMS provider encounters a discrepancy he/she will:
1. Log the ALS/BLS bag into the ED using the Drug Box check-in form (patient name, metal tag # of bag being checked in and metal # of bag being taken).
  2. Turn in the blue seal with hospital sticker that was attached to the drug bag in question, along with a written description of the problem noted to his/her EMS Officer. This written description shall include the Drug Bag # of the bag in question. The written description of the discrepancy shall be dated and signed by the EMS provider reporting the complaint.

**EMS Officer:**

The EMS Officer will:

1. Contact the EMS Coordinator of the hospital in which the bag originated (hospital name on Blue Seal).
2. Contact the State Pharmacy Office of the nature of the following discrepancies:
  - a. Missing medication
  - b. Wrong medication in drug bag
  - c. Missing or Stolen drug bag
  - d. Altered medications

The EMS Officer will report the following:

- e. Name of drug
- f. What occurred
- g. What hospital the bag originated from
- h. What EMS Agency was involved

*The State Pharmacy Board number is 614.466.4143. Advise them you want to report a drug bag discrepancy and they will connect you to the appropriate person.*

3. If the drug is a controlled drug (Valium, or Morphine), or the bag has been stolen or is missing, or any medication appears altered or tampered with, the EMS Agency will:
  - Make a police report to the department in which the discrepancy was found.
  - **Contact the DEA and submit** DEA Form 106 within 30 days of notification and send electronically ([http://www.deadiversion.usdoj.gov/21cfr\\_reports/theft/106/announce\\_106.htm](http://www.deadiversion.usdoj.gov/21cfr_reports/theft/106/announce_106.htm))
    - Original to the DEA
    - Copy to the State Pharmacy Board
    - copy to the Fire/EMS/Private Ambulance department
    - Maintain one copy for your records
4. A copy of the police report if bag was stolen lost, or controlled meds missing and or any medications altered.
5. Send the following to the Hospital EMS Coordinator from which the discrepancy occurred:
  - a. The blue seal with hospital name and tag number on drug bag to which seal was attached.
  - b. A statement of what occurred.
  - c. A statement indicating that the Pharmacy Board was contacted and to whom the report was given.
  - d. A copy of the police report, if requested by the Hospital Pharmacist.
6. Send the following to the GMVEMSC:
  - a. A statement of what occurred.
  - b. A statement indicating that the Pharmacy Board was contacted and to whom the report was given.
  - c. **A statement indicating that the DEA form 106 was submitted.**
  - d. A copy of the police report if the bag was stolen, lost, or controlled meds are missing and /or any medications altered.

**EMS Coordinators:**

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- A. When the EMS agency contacts you about a drug bag discrepancy that occurred that had a blue seal from your hospital pharmacy, you shall:
1. Insure that agency has completed the tasks listed in the EMS providers responsibilities listed in part A.
- B. If the EMS Coordinator discovers any discrepancies (missing meds, expired meds, wrong medication or dose, altered or tampered meds, drug box number discrepancy, etc.) the EMS Coordinator will:
1. Contact the EMS Coordinator of the hospital in which the discrepancy originated (hospital name on Blue Seal). The EMS Coordinator who discovers the discrepancy will also send the blue seal to that EMS Coordinator so he/she can follow up with the pharmacy that filled the bag.
  2. The EMS Coordinator who discovers the discrepancy will contact the State Pharmacy Office of the following discrepancies:
    - a. Missing medication
    - b. Wrong medication in drug bag
    - c. Missing or Stolen drug bag
    - d. Altered medicationThe EMS Coordinator who discovers this will also report to the pharmacist:
    - a. Name of drug
    - b. What occurred
    - c. What hospital the bag originated from
    - d. What EMS Agency was involved

*The State Pharmacy number is 614.466.4143. They shall be contacted immediately of any discrepancy. Advise them you want to report a drug bag discrepancy and they will connect you to the appropriate person.*

3. If the drug involved is a controlled medication (Valium, or Morphine), the bag has been stolen or is missing or any medication appears altered or tampered with, the EMS Coordinator will:
  - a. Contact his/her hospital pharmacist
  - b. A police report is made according to their hospital protocol
4. The EMS Coordinator discovering discrepancy will then send the following to the GMVEMSC:
  - a. A statement of what occurred
  - b. A statement indicating that the Pharmacy Board was contacted (if indicated i.e. controlled meds, lost or stolen bags) and whom the report was given.

***If the drug is a controlled drug (Valium, or Morphine), the bag has been stolen or is missing, or any medication appears altered or tampered with, the EMS Agency will make also contact the DEA and submit DEA Form 106 within 30 days of notification and send electronically ([http://www.deadiversion.usdoj.gov/21cfr\\_reports/theft/106/announce\\_106.htm](http://www.deadiversion.usdoj.gov/21cfr_reports/theft/106/announce_106.htm))***

- Original to the DEA
- Copy to the State Pharmacy Board
- Copy to the Fire/EMS/Private Ambulance department
- Maintain one copy

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5. A copy of the police report if bag was stolen lost, or controlled meds missing and or any medications altered.

**Pharmacy department personnel:**

When a discrepancy is noted, notify the EMS Coordinator of your facility and advise him/her of the discrepancy encountered and he/she will assist you with the steps outlined in the EMS Coordinator section.

**The GMVEMSC will:**

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

**The Drug Box Committee Chairperson will:**

- Will report all at the bi-annual Drug Box 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 Box 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).

**Red Seals:**

Red seals identify ALS/BLS boxes as being used. 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 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.
- Notify the following upon determination that a drug bag has been lost or stolen:
  1. "Responsible party" as listed on the drug license
  2. GMVEMS Council
  3. Assigned hospital pharmacy
  4. Assigned hospital EMS Coordinator
  5. Local police department
- Send copy of the police report to the assigned hospital pharmacy.  
ASSIGNED HOSPITAL PHARMACY WILL:
  1. Check hospital inventory to determine if appropriate number of bags are present and accounted for.
  2. Distribute a replacement drug bag to the Fire/EMS/Private Ambulance department.
  3. Contact hospital EMS Coordinator who in turn will contact the GMVEMS Council to obtain new bag for the hospital pharmacy inventory.
  4. Number new drug bag with the next sequential number per the numbering system.
  5. **Submit** DEA Form 106 within 30 days of notification and send electronically ([http://www.deadiversion.usdoj.gov/21cfr\\_reports/theft/106/announce\\_106.htm](http://www.deadiversion.usdoj.gov/21cfr_reports/theft/106/announce_106.htm))
    - Original to the DEA
    - Copy to the State Pharmacy Board
    - One copy to the Fire/EMS/Private Ambulance department
    - Maintain one copy

#### EMS COORDINATOR WILL:

- Contact other hospitals to determine if the drug bag is in another hospital's inventory. This can be checked through the pre-assigned numbering system, or by counting the number of drug bags at the hospital.

**ADDENDUM B**

**Hospital Participation Policy**

APPROVED: 29 November 2001

**GENERAL PURPOSE:**

- To assure uniformity of hospital pharmacy participation in the DBEP.

**THE HOSPITAL SHALL:**

- Purchase (at cost), fill, and maintain a supply of bags sufficient to meeting the needs of an average day, plus a few extra to meet peak demands for bag replacement.
- Accept responsibility for filling new bags for departments or vehicles as assigned by Council, at hospital expense.
- Assign one licensed pharmacist and an EMS coordinator to attend and participate in the Standing Orders and Drug Bag Exchange Program Committees.
- Agree to pay annual dues and any fees assessed by Council that are approved by the DBEP Committee and the GMVEMSC Council that pertain to the DBEP.

**GMVEMSC SHALL:**

- Maintain a current State & DEA drug license for all participants in the DBEP.
- Furnish hospital pharmacy with a current listing of all departmental personnel authorized to access the GMVEMSC drug boxes and copy of the protocol.
- Assign departments to hospitals in both a geographic and otherwise equitable fashion.

**ADDENDUM C**  
**AGREEMENT LETTER**

*Please type or print legibly*

*DEPARTMENT/SERVICE:* \_\_\_\_\_

*CONTACT PERSON:* \_\_\_\_\_

*TELEPHONE:* \_\_\_\_\_

*FAX:* \_\_\_\_\_

*This department/service agrees to abide by the GMVEMS Council Drug Box Exchange Program and Standing Orders operating guidelines.*

*SIGNATURE:* \_\_\_\_\_

Fire Chief, EMS Administrator, or Private Ambulance Administrator.

*DATE:* \_\_\_\_\_

**Return to:**

GMVEMSC

PO Box 2307

Dayton OH 45401-2307

Phone: 937.586.3703

Fax: 937.586.3699



**ADDENDUM D**

**New Member Policy requiring Drug (ALS/BLS) bag for licensure of their ALS/BLS unit**

Those Agencies who have applied for membership and require a GMVEMSC drug bag to license their units may request a GMVEMSC drug Bag to be available 24 hours prior to the Ohio Ambulance Licensing Board (OALB) inspection date providing they have done the following:

1. Have applied for a GMVEMSC membership
2. They have provided a copy of their State Pharmacy License
3. They have provided a copy of their DEA license or proof of submission for a DEA license if agency is an intermediate or ALS agency .
4. Have been given a provisional membership by the GMVEMSC Executive Committee if the inspection is before regularly scheduled Council meeting.
5. Personnel must be checked off on Standing Orders and data entered on GMVEMSC data base.

The agency has 72 hours to show proof of a temporary permit from the date of inspection to the GMVEMSC Council office. If they cannot demonstrate an OALB permit in that time the Drug bag must be returned to the Hospital to which the agency is assigned or the hospital that provided the drug bag.

## **II. STANDING ORDERS/PROTOCOLS**

### **PURPOSE**

To develop and approve Standing Orders Protocols (Adult and Pediatric) for the Greater Miami Valley EMS Council.

### **STANDING ORDERS COMMITTEE**

Co-Chairmen:           1 EMS squad representative  
                              1 Hospital EMS Physician representative

Members:               EMS Coordinator representatives from participating hospitals  
                              1 Squad representative from each participating county  
                              1 Physician representative from each participating county  
                              Any interested GMVEMS Council member

### **OPERATING GUIDELINES**

#### **GENERAL**

- Standing Orders/Protocols (Adult and Pediatric) are submitted to each participating department in the Drug Box Exchange Program for approval.
- Approval of the Guidelines Standing Orders includes a signed and notarized letter from the department medical director to the Ohio State Board of Pharmacy. Copies of the letters are kept on file at GMVEMS Council.
- The Standing Orders Committee develops a training package for the Standing Orders.
- Participation in the Drug Bag Exchange Program requires that all EMT-P, EMT-B and EMT-I personnel from each participating department complete an annual skills check and written test between 1 January-30 April unless otherwise scheduled by Council.

#### **REVIEW/APPROVAL PROCESS**

- Department and hospital representatives cooperate to review the Standing Orders as needed. The schedule for the review process is four years.
  - Year One: Evaluation of field operations for any changes made in that year.
  - Year Two: Review and evaluation of field operation; discussion of new medications or clinical procedures.
  - Year Three: Review, evaluation, and field trials of proposed changes to the operating protocols.
  - Year Four: Months 1-3: The Standing Orders Committee requests information from all DBEP participants, medical advisors, hospital EMS coordinators, hospital Emergency Department directors, hospital EMS physician representatives and educational representatives on the efficiency of the Standing Orders, proposed changes, and new procedures or medications to be reviewed for inclusion in the Standing Orders and the Drug Bag Exchange Program.
  - Month Four: Standing Orders Committee compiles the information for Committee review. The review process includes: a review of all submitted information and discussions as necessary to clarify any item. If new procedures or medications are recommended, each request is assigned to a subcommittee for a literature review, evaluation and recommendation.
  - May 1st: A draft of the Standing Orders is prepared. It is distributed for review to: DBEP participants, medical advisors, hospital Emergency Department directors, hospital EMS coordinators and education representatives. Comments and/or revisions to the draft must be submitted in writing.
  - The draft/review process is repeated as many times as necessary to achieve consensus of all interest groups involved.
  - The Standing Orders are submitted to participating departments for approvals for approval.
  - Revised Standing Orders/Protocols and new medical lists are distributed to each participating department to correspond with the annual drug license renewal period.

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- Revised Standing Orders/Protocols may be implemented by a participating department upon completion of these requirements.
  - Completion of the annual training exercise
  - Completion of the scheduled drug bag updates

**INTERIM CHANGES TO THE STANDING ORDERS**

Each proposed revision will be evaluated by the Standing Orders Committee and the Drug Bag Committee. The Ohio State Board of Pharmacy will be notified. General guidelines to be followed are:

- All interest groups are notified and requested to respond to the proposed revision. The Standing Orders Committee and the Drug Bag Committee convene as many times as necessary to achieve a consensus among the interest groups.
- The proposed revision is submitted to participating department medical directors for approval. Approval consists of a signed, notarized letter from each department medical director. GMVEMS Council collects the letters and submits them to the Ohio State Board of Pharmacy with a revised drug list for the Drug Bag Exchange Program. GMVEMS Council maintains copies of the letters in a master file. The Standing Orders are revised and distributed to DBEP participants.

EM42.01/42.06

**2004 EMS Standing Orders Synopsis of the Greater Dayton Hospital Association/Greater Miami Valley EMS Council Policy on Emergency Department Re-routing Due to Overcrowding**

To avoid misunderstanding, all parties are cautioned to use the word “**rerouting**” never “closed.” Patients are never rerouted for patient’s economic considerations.

Major changes from the last synopsis of the Reroute Policy are marked with an asterisk (\*).

When conditions exist that may hinder the timely treatment of additional emergency cases the designated hospital official declares, “rerouting of emergency patients to be in effect.” The intent is to provide for best patient care at the rerouted institution and throughout the EMS system.

Rerouting Does **Not** Apply (DNA) to:

- |                                      |                              |  |
|--------------------------------------|------------------------------|--|
| 1. <b>Respiratory/Cardiac Arrest</b> | 4. <b>Maternity</b>          | 8. <b>Air Medical Transport</b>                    |
| 2. <b>*Major Trauma</b>              | 5. <b>High Risk Neonatal</b> | 9. <b>*Recently Discharged Patients (48 Hours)</b> |
| 3. <b>Serious Burns</b>              | 6. <b>*Dialysis Patient</b>  |  |
|                                      | 7. <b>Hyperbaric needs</b>   |  |

\*Psychiatric was deleted from the DNA List, and Recently Discharged Patients was added. Trauma and Dialysis Patients should NOT be rerouted. They should be taken to the hospital where they are normally treated.

When conditions exist the Designated Hospital Official will:

- |  |  |
|--|--|
| 1. <b>Update GDAHA Reroute web page</b>                                  | 3. <b>Notify appropriate EMS organizations</b> |
| 2. <b>Notify Dayton FD Dispatch or their appropriate county dispatch</b> | 4. <b>Notify other hospitals</b>               |

**Important:** hospitals must always show correct designation on website:

- |   |   |
|---|---|
| • <b>“Normal Operation”</b>                       | • <b>“Reroute Emergency”</b>                          |
| • <b>“Reroute all Emergency Patients”</b>         | • <b>Lockdown</b>                                     |
| • <b>“Reroute all but Major Trauma”</b>           | • <b>Special Situation: See website Notes or Call</b> |
| • <b>“Reroute ICU &amp;/or CCU patients Only”</b> |   |
| • <b>“Forced Open”</b>                            |   |

Reroute status for any hospital must be reviewed after not more than four hours. The rerouting hospital is responsible for cancellation and will update GDAHA Reroute Web Page, notify Dayton Fire Department Dispatch, and follow the same notification protocols used to initiate the reroute.

**Rerouting Categories Defined**

- **“Reroute All Emergency Patients”**
  - No patients brought to the rerouted hospital ED, with two groups of exceptions:
    - Permission of the MCP (MCP)
    - Patient is in one of the “DNA” categories
- **“Reroute All But Major Trauma”**
  - Used only by Trauma Centers. No patients brought to the rerouted hospital ED, with three groups of exceptions:
    - Permission of the MCP
    - Patient is in one of the “DNA” categories
    - Significant trauma
  - Intent is to permit patients needing ‘immediate surgical intervention’ to go to Trauma Centers
- **“Reroute Intensive and/or Coronary Care Patients Only”**
  - No patients who require monitoring or ICU are brought to rerouted hospital ED, unless:
    - Permission of MCP

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- Patient is in one of the “DNA” categories
- **Informational Categories**
  - Hospital not able to handle a limited category of patients
  - Examples
    - Stroke or head trauma patients due to CT Scan down
    - Haz-Mat patients
    - Absence of a physician specialty
  - Duration of reroute could be brief or extended
  - Shown on the web page as “Special Situation.” Hospitals diverting these categories of patients are **not** rerouted.
  - These categories **do not** trigger “Tie-Breaker” actions
- **Lockdown**
  - Hospital has activated its disaster plan because of an internal emergency, bomb threat, or other situation rendering it unable to accept patients. “Home Base Hospital” and “Does Not Apply” list are both not applicable in these situations.

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 the MCP in the emergency department of the rerouted hospital and his/her decision will be binding.

If EMS transports to rerouted hospital, the patient will be attended to. Any discussion concerning the transport decision should be private, and after patient care has been initiated.

Emergency medical service personnel should use their BLS radios, cellular phone or dispatcher to notify the rerouting hospital in unusual circumstances (critical illness or injury, multi-victim incidents, etc.). If a patient is to be transported to a rerouted hospital, EMS personnel must contact the receiving facility by radio or telephone.

**“Tie-Breakers”**

If a three hospitals in a “geographic area” attempt to reroute, all hospitals in that area will terminate rerouting for a minimum of two hours, and each of the three hospitals enters “Forced Open” on the web page. Hospitals have agreed to educate the staff and use Forced Open first, before Reroute Emergency. This is not a change in the policy, but a change in the hospital procedures. Affected hospitals should re-notify EMS of “Forced Open” status.

EMS personnel should realize a “Forced Open” hospital would be rerouted if other hospitals were not. EMS personnel may want to **consider other destinations** when appropriate for patient care.

Following are the geographical areas and the hospitals in each area:

<u>Metro</u>	<u>East</u>	<u>North</u>	<u>South</u>	<u>West</u>
<b>Good Samaritan Hospital</b>	<b>Greene Memorial and any other two:</b>	<b>UVMC and any other two:</b>	<b>Any three:</b>	<b>All three:</b>
<b>Grandview Hospital</b>	<b>Miami Valley</b>	<b>Good Samaritan</b>	<b>Middletown</b>	<b>Wayne Hospital</b>
<b>Kettering Memorial Hospital</b>	<b>Kettering</b>	<b>Grandview</b>	<b>Southview</b>	<b>Good Samaritan</b>
<b>Miami Valley Hospital</b>	<b>Grandview</b>	<b>Miami Valley</b>	<b>Sycamore</b>	
<b>Hospital</b>	<b>Southview</b>	<b>Wilson Hospital in Sidney</b>	<b>Kettering</b>	<b>Grandview</b>

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It is the responsibility of the third rerouting hospital to check the website, and initiate communication with other rerouted hospitals. If one or more hospitals stop rerouting before changes to website are made, "Tie-Breaker" rules are not initiated.

**"Rerouting Emergency"**

If none of the three hospitals in a geographic area can stop rerouting, then a "rerouting emergency" will be declared. During "Reroute Emergency," all squads will transport primarily to their "Home Base Hospitals," except for patients with one of the DNA categories. If responding on a mutual aid call, EMS personnel will use the aided community's "Home Base Hospital" as much as possible.

Hospitals which are not considered "Home Bases" (i.e., VA, WP, CMC, DHH) are not affected by Emergency Rerouting rules. Children's Medical Center, will accept patients up to 21 years of age (no maternity patients). Also, EMS personnel should consider transports to outlying hospitals not affected by the "Reroute Emergency" when practical. Consider the patient's needs, departmental needs (EMS out of service times), hospital situations, and patient delays.

EMS systems and their "Home Base Hospitals are as follows:

Good Samaritan Hospital	Grandview	Kettering	Miami Valley	Southview
<b>Brookville Clayton Englewood Union Dayton FD Co.'s 16 &amp; 14 Harrison Twp. - Main St. New Lebanon Lewisburg Trotwood West Alexandria North Central Phillipsburg</b>	<b>Butler Twp. DFD Co.'s 8 &amp; 13 Harrison Twp. - I75 &amp; Needmore Huber Heights Vandalia</b>	<b>DFD Co.'s 15 &amp; 18 Kettering FD (4 units) Miami Twp. # 48 Moraine (4 units)</b>	<b>DFD Co. 11 Fairborn Jefferson Twp. Oakwood Riverside U.D. Public Safety</b>	<b>Bellbrook Clearcreek Twp. Miami Twp. # 50 Sugarcreek (2 units) Washington Twp. Wayne Twp.</b>
Sycamore	Greene Memorial	Middletown	Community Hospital	Mercy Medical Cntr.
<b>Farmersville Miamisburg (2 units) Miami Twp. # 49 West Carrollton Germantown JEMS</b>	<b>Beavercreek Cedarville Twp. Cedarville University Central State University Fairborn Jefferson Twp. Miami Twp. New Jasper Twp. Silvercreek Twp. Xenia Xenia Twp.</b>	<b>Gratis Lebanon Mason Turtlecreek</b>	<b>Hustead EMS Madison Twp. Harmony Twp. Springfield Twp. Stations 1 &amp; 2 Pleasant Twp. SFRD Medic 3, 6, 8</b>	<b>German Twp. New Carlisle Pike Twp. Bethel Twp. Springfield Twp. Station 3 Mad River Twp. Moorefield Twp. SFRD Medic 2, 7, 10</b>

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<b>U.V.M.C.</b>	<b>Wayne</b>	<b>Wilson</b>		
<b>Miami County Squads</b>	<b>Darke County Squads</b>	<b>Shelby County Squads</b>		
<b>Reid</b>	<b>Clinton</b>	<b>McCullough</b>		
<b>Eaton NW Fire - New Paris</b>	<b>Massie Twp</b>	<b>Camden</b>		

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**Hospitals Capabilities List**

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

<b>Hospital</b>	<b>Adult Trauma Center &amp; Level</b>	<b>Pedi Trauma Center &amp; Level</b>	<b>Inpt. Burn Servc</b>	<b>Interventional Cath Lab 24/7</b>	<b>If Cath Lab, Cardiac Alert Program</b>	<b>If No Cath Lab, Thrombolytics for AMI</b>	<b>Labor &amp; Delivery Srvcs</b>	<b>24 hr Neuro Coverage</b>	<b>Stroke Protocol with Thrombolytics</b>	<b>Other (see below)</b>
<b>Children's</b>		Level 2	YES					YES		
<b>Community</b>				YES			YES	YES	YES	
<b>Dayton Heart</b>				YES	YES					
<b>Good Sam</b>				YES	YES		YES	YES	YES	
<b>Grandview</b>				YES	YES			YES	YES	*
<b>Greene Memorial</b>	Level 3					YES	YES	YES	YES	
<b>Kettering</b>				YES	YES		YES	YES	YES	*
<b>Mercy (Sprfld)</b>				YES					YES	
<b>Mercy (Urbana)</b>						YES			YES	
<b>Miami Valley</b>	Level 1	Level 1	YES	YES	YES		YES	YES	YES	**
<b>Middletown</b>	Level 3									
<b>Southview</b>						YES	YES	YES	YES	* #
<b>Sycamore</b>						YES	YES	YES	YES	* #
<b>Upper Valley</b>						YES	YES	YES		
<b>Wayne</b>						YES	YES			***
<b>WPAFB</b>						YES	YES			

\* Accredited Chest Pain Eval Center

\*\* Sexual Assault Nurse Examiners 24/7

\*\*\* Treats superficial/minor burns. Thrombolytics for stroke pts at receiving hosp. direction

# Has a "cardiac alert program" but no cath lab on site



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

Updated 6-06 (Data subject to change-check periodically to ensure most current)

Step	9-04 Childrens	Community 6-06	DHH 6-06	9-04 GSH	9-04 GVH/SVH	GMH 6-06	9-04 KMH/SYC	MMC & MMH 6-06	MVH	MRH	Wayne 6-06
Wash Area	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Notify Supervisor	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
Hospital Contact	NICU Charge Nurse	ED Staff -> EMS Coord	ED Staff -> EMS Coord.	ED Staff, or Infection Control	ED Staff -> EMS Coord.	Infection Control	ED Staff -> Infection Control	ED Staff -> EMS Coord	Security -> AOC	ED Charge Nurse	Infection Control
Complete "Request for Information Form for HCWs"	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Type into ED	If desired	Y	Y	If desired	Y	Y	If desired	Y	If desired	Encouraged	Y
Have <b>your</b> lab drawn	If source is high risk (not routine)	If indicated	Y	If indicated	Y	Y	If desired	If indicated	If desired	If Desired	If indicated
Have <b>source</b> lab drawn (HIV, Hep B, Hep C)	Y	(Rapid HIV avail.)	(Rapid HIV avail.)	Y (Rapid HIV avail.)	Y (Rapid HIV avail.)	Y	Y	Y	Y (Rapid HIV avail.)	Y (Rapid HIV Available)	Y
Follow-up: Consult <b>YOUR</b> <b>Fire/EMS/Police</b> Dept policies/procedures as well	Follow dept policy	Infection Control	EMS Coord. or designee & Follow dept policy	Infection Control	EMS Coord. or designee & Follow dept policy	WorkPlus Dept	Infection Control & Follow dept policy	Infection Control	Infection Control or Admin Officer	Follow Dept. Policy	Director of Administrative Services
Comments	Infection Control Doc available 24/7 for RN contact if needed	Give form to EMS Coord, who forwards to Infection Control for follow up	EMS Coord. is to be paged 24/7 by ED or Prehospital provider	Form placed in locked box in EMS room for Infection Control	EMS Coord. is to be paged 24/7 by ED or Prehospital provider		Infection Control to be paged 24/7 by ED	Give form to EMS Coord who forwards to Infection Control for follow up	Security page Infection Control Mon- Fri 8-4. Admin Officer to be paged at all other times including holidays	Exposure packets located by EMS radio. Anti Viral meds available in ER if needed.	Give form to Dir Admin Srvc, ED Manager or House Supervisor

Prepared by Lisa Faulkner, Infection Control Chair, GMVEMSC after consult with hospitals' EMS Coordinators and Infection Control Officers

This Training Manual has been produced as a result of countless hours of work by a diverse cross section of the EMS community in the Region. The members of the Standing Orders and Continuing Education Committees, and the RPAB have poured input in this document. The new AHA Guidelines have been incorporated and there has been a philosophical change with orders this year requiring more critical thinking.

There are companion documents and additional resources that are available for you to either view online / download for further explanation on the Training / Testing process for 2007. The first of those is the "2007 Implementation Guide". It addresses the new philosophy, CEUs, and other important information regarding the testing. The other is the Ohio Public Safety "Scope of Practice" document. We hope to have additional supplemental material posted on the websites soon.

The Training Manuals and processes would not have been possible without the strong foundation left by the past chairpersons of the Continuing Education Committee, Anne Boyd and Standing Orders, David Gerstner. Thank you both. We would also like to thank the members of the two committees that made this possible:

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Continuing Education

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Standing Orders

Tony Alexander  
 Tom Baltes  
 Karen Basso  
 Jeff Bruggeman  
 Gerald Bowerman II  
 Dave Evans  
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Sincerely,

***Steve M. Stein***

Continuing Education Chair



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