



**Greater Miami Valley
Emergency Medical Services Council, Inc.**

and

Ohio EMS Region 2

**First Responder / Basic EMT
Standing Orders
Training Manual**

**Pre-hospital Protocols
2004**

For First Responders / EMT-Basics

**Version 12/16/03
Effective: 4 February 2004**

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Adult

**Pre-hospital Protocols
2004**

For First Responders / EMT-Basics

(Patients Age 16 and Over)

Version 12/16/03

Effective: 4 February 2004

PROTOCOL MANUAL
GMVEMSC Adult Protocol - 1ST RESPONDER & EMT-B

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1.0 - STIPULATIONS

1. 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 Ohio EMS Region 2, and certified by the State of Ohio as a:
 - First Responder
 - EMT-Basic
2. 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 transported to their facility.
3. 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.
4. 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 Advisor for the local department or agency. **Items enclosed in braces ({} are at the option of the Department, and its Medical Director.**
5. EMS personnel of any level are not authorized to intubate, unless they have and can use appropriate secondary confirmation devices (EtCO₂ Detectors, and/or Esophageal Detection Devices).
6. First Responders, by design, respond with minimal equipment and supplies. In this protocol, their use of **any** equipment, including such items as {oxygen}, {AEDs}, or {splints} shall be on an as available basis.
7. EMT-Basic protocols are a continuation of the First Responder protocol; EMT-Bs are expected to perform all of the First Responder protocol as well as the EMT-B protocol.
8. Bring the patient's medications, or a list of the medications, with the patient to the hospital. When supplying hospitals with documentation of patient meds, be certain to include the proper dose, and the frequency of administration.



Identify yourself and Level of Certification as well as the person receiving the message at the medical facility.

2.0 - INITIAL CARE

FIRST RESPONDER

1. Institute Basic Life Support as indicated:
 - Establish unresponsiveness.
 - Stabilize neck and immobilize if history of trauma.
 - Open airway and assess breathing.
2. If not breathing, institute artificial ventilation {using mouth-to-mask, bag mask, and adjuncts such as oropharyngeal and nasopharyngeal airways}.
3. Administer {Oxygen (O₂}.

BASIC

4. {When indicated, endotracheal intubation should be performed. EMT-Bs may only intubate using the oral route, patients in respiratory *and* cardiac arrest, and only if their Department and Medical Director specifically approves them to do so.}
5. Check pulse. If absent, CPR continuously until {AED} arrives.
6. {Dual Lumen Airways} and the {LMA} may only be used for apneic patients with no gag reflex.

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{Dual Lumen Airways} and the {LMA} may only be used for apneic patients with no gag reflex.



It is very important for Crews to realize that the section of the Drug Box that was used for a Supply Pouch will no longer be available for that purpose. All the supplies (syringes, alcohol preps, saline locks, needles, and IV tubing) that used to be carried in that pocket must now be stocked on your Medic.

2.1 - PATIENT ASSESSMENT

1. Airway (Assess, establish, and maintain as needed)
2. Breathing
3. Circulation (Skin - warm, cool, dry, or moist; capillary refill; peripheral pulses)
4. Present Complaint
5. Vital Signs
6. Signs & Symptoms (90 second survey)
7. Allergies
8. Medications-Current
9. Past Medical History
10. Last oral intake
11. Events leading up to illness/injury
12. Approximate Age/Weight.



May use {Doppler Stethoscope} to assist in obtaining accurate BP, or to verify effectiveness of treatment.

2.2 - AIRWAY MAINTENANCE

FIRST RESPONDER

1. Administer {O₂} to all patients with respiratory distress, or whenever your impression indicates that it is appropriate. Use the following rates as guidelines:
 - A. Two (2) liters per minute per nasal cannula for patients with a history of Chronic Obstructive Pulmonary Disease (COPD).

NOTE: COPD patients in severe respiratory distress or with Chest Pain need the same oxygen devices and flow rates as any other patient in such condition. Be prepared to stimulate breathing and/or ventilate should the patient become apneic.
 - B. Four to six (4-6) liters per minute by nasal cannula for other patients.
 - C. 100% by a non-rebreather mask (NRM) (12-15 liters per minute) for severe trauma patients, very distressed cardiac patients, and other patients who appear to need high flow {O₂}.

BASIC

- D. If patient becomes apneic and is in cardiac arrest, {intubate}.
2. {Dual Lumen Airways (e.g., {Combitube}, {Pharyngotracheal Lumen Airway (PtL)}) or a {Laryngeal Mask Airway (LMA)} are acceptable rescue airway devices) for the properly trained and tested basic EMT with the approval of their Medical Director, and may be used after two failed attempts to intubate}.
 3. If endotracheal intubation is **not** an approved procedure by your department or Medical Advisor, but

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the EMT-Basic is permitted to use the {Dual Luman Airways or LMA's} and has been properly trained and tested, then they may use these devices to secure the airway on a apneic and pulseless patient.

4. Ventilate patients who are symptomatic with an insufficient respiratory rate and/or depth.
 - A. **EMS personnel are *required* to use both a Primary and at least one appropriate Secondary Method of tube placement confirmation** (as defined below) **on every intubation**. These include:
 - Primary Methods:
 - ❖ Physical Assessment including auscultation of the epigastrium, anterior chest, midaxillary areas, and then the epigastrium again.
 - ❖ Repeat visualization of the tube between the cords
 - ❖ Condensation in the tube
 - ❖ {Pulse Oximeter}
 - Secondary Methods:
 - **End Tidal Carbon Dioxide Detector** (colorimetric EtCO₂ is limited to patients with pulses)
 - **{Esophageal Detection Device (EDD)}** (may be used with any intubation, though EtCO₂ is preferable for patients who are still breathing)
 - **Unless at least one of these secondary devices is available and used to verify tube placement, EMS personnel are not authorized to intubate.**
 - B. **Always secure the ET tube in place as effectively as possible, preferably with a {commercial tube-securing device}.**
 - C. **Re-assess tube placement EVERY TIME THE PATIENT IS MOVED.**

If routine ventilation procedures are unsuccessful, try to visualize obstruction with laryngoscope. If foreign body is seen, attempt to remove it using **suction**, if possible.

- ★ EtCO₂ with Waveform is the most accurate method of airway confirmation.
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Definition - Rescue Airway, use of an alternative device such as a Dual Lumen Airway or LMA after attempts to use endotracheal intubation have failed.



End Tidal CO₂ Detector (EtCO₂): an inline detector for intubated patients that senses the presence of carbon dioxide (CO₂) in expired air. If CO₂ is detected, correct tube placement is confirmed. If no CO₂ is detected, placement is suspect. One disposable EtCO₂ Detector is the “Nellcor Easy Cap.”

The Easy Cap can be used continuously after the patient is intubated.

Limitations:

1. The patient must have adequate perfusion. If CO₂ is not transported to the lungs, the device will not register CO₂. It can then appear that the tube is in the esophagus, when, in fact, it is

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correctly placed. Therefore, Easy Cap EtCO₂ Detectors are **not recommended** for patients in cardiac arrest. (Please note that electronic EtCO₂ Detectors with waveform readings are useful in cardiac arrest patients, although they are significantly more expensive, and are not available to many departments at this time.)

2. Secretions, emesis, etc. can ruin the device.
3. A patient with large amounts of carbonated beverage (e.g., beer) in his stomach can give a false positive. The device may sense the CO₂ given off by that beverage and indicate that the tube is in the trachea, when it is in the esophagus.
4. Use the device for no more than two hours.
5. **Do not use the device on children weighing less than 45 kg, due to the dead space within the detectors.**
6. Medication issues:
 - If you administer epinephrine or other medications via the ETT, remove the EtCO₂ Detector for several ventilations, until no medication returns through the tube during exhalation. If you do not, medications splashing up the tube onto the EtCO₂ can ruin the ability of the device to show color changes.
 - Be aware that if you give intravenous sodium bicarbonate, more carbon dioxide will be produced. The yellow color on the Easy Cap may be enhanced.



End Tidal CO₂ (EtCO₂) Monitors: These are electronic devices that 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 sample the ventilations more remotely from the patient. Sidestream sensors can be used with patients who are not intubated. Electronic EtCO₂ Monitors can provide only a numeric readout, or can include a “waveform.” EtCO₂s with waveform graphically and constantly display the changes in exhaled carbon dioxide, thus providing a moment by moment assessment of the patient.

Limitations and Benefits of Electronic EtCO₂ Monitors:

1. Electronic EtCO₂ monitors have all the benefits of EtCO₂ Detectors (see above), plus EtCO₂ Monitors with Waveform can even be used in patients with poor perfusion, such as cardiac arrest patients. That is partly because the Electronic Monitors are more sensitive, but mostly because watching the changes in the waveform lets you see changes, just as you see changes in an EKG. By knowing how EtCO₂ waveforms appear in different situations, you can determine tube placement even during cardiac arrest.
2. Can be used to assess the patient’s chances for survival.
3. Sidestream monitoring can be useful to help guide treatment in asthma or COPD patients even before they are intubated.
4. The biggest limitation of electronic EtCO₂ Monitors with waveform readings is that they are significantly more expensive.
5. You are much less likely to be misled by readings from a patient with large amounts of carbonated beverage (e.g., beer) in his stomach when using the waveform. Even though the device may sense the CO₂ given off by that beverage, the paramedic will be able to determine by the pattern of the waveform whether the CO₂ is respiratory or not.
6. Electronic EtCO₂ Monitors can be used in all situations described for EtCO₂ Detectors. Additionally, if the Monitor includes a waveform, it can be used with cardiac arrest patients.



Esophageal Detector Device (EDD): a device to confirm tube placement mechanically. It is based on the principle that the esophagus is a collapsible tube, while the trachea, on the other hand, is rigid.

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An EDD looks something like a bulb syringe. Collapse the bulb, and place the device on the end of the ETT. 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. That prevents air movement up the tube and into the bulb. So 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, which is rigid, there is nothing to occlude the movement of air into the tube. The bulb will rapidly refill, indicating that the ETT is properly placed.

Limitations:

1. A large amount of gastric air can give a false positive finding (tube seems to be in the trachea, but is not).
2. 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.)
3. EDD cannot be used continuously. It must be removed after confirmation, though you may reuse it after patient movement.
4. EDDs may only be used on pediatric patients who are older than 5 years of age, and weigh at least 20 Kg/44 pounds.
5. Pregnancy is a relative contraindication to use of the EDD.



Indications for Various Devices

	Oral ETT	Pulseless Pt.	Apneic Patient
<u>Colorimetric EtCO₂</u>	<u>Useful</u>	<u>Contraindicated</u>	<u>Useful</u>
<u>EDD</u>	<u>Useful</u>	<u>Useful</u>	<u>Useful</u>



To prevent endotracheal tube dislodgement, secure the tube in place as effectively as possible and prevent patient's head from moving. Cervical immobilization is effective in maintaining patient's head in a neutral position.

3.0 - CARDIOVASCULAR EMERGENCIES

3.1 - CARDIAC ARREST

GENERAL CONSIDERATIONS

1. First Responders: call for help immediately.
2. When using BVM ventilation, cricoid pressure should be applied to occlude the esophagus and prevent gastric distention
3. CPR should not be interrupted for more than 30 seconds until spontaneous pulse is established.
4. EMT-Bs: transport as soon as practical, unless ALS will be available within 5 minutes.

3.1.1 - CARDIAC ARREST: PULSELESS APNEIC PATIENT ({AED} PROTOCOL)

FIRST RESPONDER

1. Evaluate ABCs.
2. Provide ventilations during CPR with a {Bag-Valve-Mask (BVM) or Positive Pressure Ventilation (PPV) with 100% {O₂}.
3. CPR continuously until {AED} is attached to patient. Press to analyze. If no shock advised, continue CPR.
4. Press to analyze. If no shock advised, continue CPR.

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5. If shock advised, provide set of three stacked shocks.
6. CPR continuously for one minute, if no pulse, then press to analyze. If shock advised, repeat set of three (3) stacked shocks.
7. If no shock advised by {AED} at any point, transport as soon as possible
8. CPR continuously.

BASIC

9. {Intubate patient if authorized by your Department and Medical Director.}
10. Approximately every five minutes stop vehicle and re-analyze patient as long as shock advised. Never shock or analyze in a moving vehicle



AED Use: If your AED has recording capabilities, start verbal documentation at the time you attach AED to patient. On monophasic AEDs, the manufacturer's recommended energy settings for the first three stacked shocks is 200 J., 200 - 300 J. , 360 J., with all subsequent shocks @ 360 J.. Departments who have purchased one of the new biphasic AEDs will have equivalent energy settings.

Costs/Benefits of Stopping to Analyze on Long Transports: As stated in section 3.1.6 A of this protocol, when faced with a patient in cardiac arrest and no advanced life support capabilities at the scene, time to the receiving medical facility is critical. Stopping to analyze on long transports will increase that time. A good rule of thumb: If AED is recommending you shock, stop for analysis; if no shock is advised, make less stops for analysis.



FROPVD are only appropriate for adult patients.

3.1.5- NON-INITIATION OF CPR

1. No resuscitation will be attempted in cardiac arrest patients with the following:
 - A. Burned beyond recognition
 - B. Decapitation
 - C. Deep, penetrating, cranial injuries or massive truncal wounds
 - D. DNR Order - present and valid
 - E. Frozen body (so severe that chest compression is impossible, or the nose and mouth are blocked with ice)
 - F. Hemitorporectomy (body cut in half)
 - G. Rigor mortis, tissue decomposition, or severe dependent post-mortem lividity (any one or more)
 - H. Scene Safety - Situations where the danger to rescuers is excessive
 - I. Triage
2. If CPR has been started on a patient with any condition listed in # 1 of this Section, EMS may discontinue the resuscitation efforts.
3. EMS will **not** initiate resuscitation on victims of **blunt trauma** who are **found in cardiac arrest upon EMS arrival**, or who **arrest before** being placed in the EMS vehicle, unless one or more of the following conditions are present:
 - A. Patient can be **delivered** to an Emergency Department within **5 minutes** of the time patient is found to be in arrest; **or**

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- B. You suspect that the arrest may have been caused by a medical condition (e.g., AMI) or a focused blunt trauma to the chest (e.g., baseball to the chest).
 - If you suspect that the arrest resulted from medical conditions or focused trauma, follow all normal cardiac arrest procedures.
4. EMS will **not** initiate resuscitation on victims of **penetrating trauma** who are in cardiac arrest upon EMS arrival, **unless** the patient can be delivered to an Emergency Department within **15 minutes**.
 - A. Resuscitation **will** be attempted on victims of penetrating trauma who arrest after they are in EMS care.
5. Once enroute, continue care even if the above time limits cannot be met.



Risks and Benefits of Departments accepting DNR Orders that are not on Comfort Care forms:

Some EMS agencies do accept formal DNR orders that are not on State of Ohio forms, as long as you are comfortable with the identification of the patient. There are several reasons why this may be beneficial to your patients:

- There are still physicians who are unfamiliar with the Comfort Care Law, and who are writing older style DNR orders.
- A terminal patient from another state may be visiting Ohio. Obviously, a person coming from out of the state to visit their relatives for one last time, is going to have a DNR Order from their home state, and would want it to be honored.
- As a result of a quirk in the law, DNR Comfort Care does not apply to children. As such, any DNR Orders for pediatric patients will be a format other than the Comfort Care style.

See Appendix for more complete information on Ohio DNR.

3.1.5.A – DNR COMFORT CARE SYNOPSIS

1. Two Comfort Care trigger points:
 - A. DNR **Comfort Care** means “**comfort care only**.”
 - In effect when order is written. Allows any medical treatment to diminish pain or discomfort that is not used to postpone the patient’s death.
 - B. DNR **Comfort Care-Arrest** means care is limited to comfort care **only** after the patient goes into cardiac or respiratory arrest.
 - Until arrest, patient receives all usual medical care.
2. **The following treatments are prohibited for a apneic or pulseless patients with DNR COMFORT CARE - ARREST orders and for DNR COMFORT CARE patients at any time**
 - A. Artificial airways (oral airways, nasal airways, or endotracheal tubes)
 - B. Cardiac monitoring
 - C. Chest compressions
 - D. Defibrillation with an AED
 - E. Respiratory assistance
3. **The following treatments are always permissible, regardless of a patient’s DNR status:**
 - A. Clearing the airway, other than as an attempt at resuscitation
 - B. Contacting medical control or your supervisor
 - C. Controlling bleeding
 - D. Oxygen
 - E. Pain management

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- F. Position for comfort
 - G. Providing emotional support
 - H. Splinting or immobilizing suspected fractures
4. If a person holds Durable Power of Attorney for **Healthcare** (DPA-HC), they can request CPR for the patient if:
- A. The Durable Power of Attorney is for **Healthcare**, and the DNR Comfort Care form does **NOT** have the box for “living Will and Qualifying Condition” checked under “Certification of DNR Comfort Care Status (to be completed by the physician).”
 - B. **If the Living Will box (second box) is checked**, the DNR Comfort Care protocol applies, regardless of wishes of the DPA-HC.

3.1.6 - FIELD TERMINATION OF RESUSCITATION EFFORTS
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3.1.6.A - FIELD TERMINATION OF RESUSCITATION EFFORTS WITH NO AVAILABLE ADVANCED LIFE SUPPORT (ALS)

EMT-B

1. ♦ When EMS providers (**not** including First Responders) are faced with a patient in Cardiac Arrest, no ALS equipment is available at the scene, and Transport time to a medical facility will exceed 30 minutes, they may consider contacting a Medical Control Physician for orders to terminate the resuscitation.
2. ♦ Medical control must be contacted and the physician must speak directly with the EMS provider, and must give consent for the resuscitation effort to cease.
3. ♦ This section does not normally apply to Paramedics; it may **only** be used when no Paramedics are available, **or** when Paramedics are present, but ALS equipment is not available.
4. The intent of this section is to avoid the risks of emergency transport of patients who are almost certainly non-viable.
5. **Ensure that the EMS Coordinator of the hospital that authorized the Field Termination receives a copy of the runsheet for his/her records.**

3.2 - SUSPECTED CARDIAC CHEST PAIN

FIRST RESPONDER

1. Secure and maintain airway, administer {O₂} at 4 - 6 l/m via Nasal Cannula}. Increase {oxygen} delivery as needed for respiratory distress
2. Obtain vital signs.
3. Complete patient assessment, including Pain Scale (1-10), and pain radiation.

BASIC

4. Ask patient about allergies.
5. Ask both male and female patients if they are taking Viagra or similar medication. **Nitroglycerin must not be given** to patients who have taken Viagra within the last 24 hours.
6. If patient is having symptoms consistent with an Acute Coronary Syndrome (ACS), assist patient with administering 325 mg. of **Aspirin**. If baby **Aspirin** is available, use four (4) baby aspirin. Patient **MUST CHEW** the aspirin
7. ♦ **If** no ASA available contact Medical Control Physician and obtain permission to administer 325 mg. of **Aspirin** baby **Aspirin** is available, use four (4) baby aspirin from the BLS compartment.
8. Apply {Pulse Oximetry}.

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9. If SBP > 100, assist patient with prescribed **Nitrostat (Nitroglycerin)** (1) 1/150 gm. (0.4 mg.) **SL**. First Responders and EMT-Bs may **not** administer **Nitroglycerin** to a patient for whom it is not currently prescribed.
10. ♦ Repeat **Nitroglycerin** tablets with orders from a Medical Control Physician. Repeat up to a total of not more than three tablets. Recheck vital signs and reassess pain with the Pain Scale after each **Nitroglycerin** tablet.
11. Notify hospital of the transport of a possible MI patient, if patient is displaying high-risk signs/symptoms.
12. ♦ If patient is currently prescribed nitroglycerin but has outdated, damaged, or contaminated medication on hand, or does not have their own medication with them at the time of the emergency, the EMT-Basic may access the **BLS Drug Bag** for nitroglycerin only under the direction of a physician.
10. If no ALS available within 5 minutes transport as rapidly as is possible and safe. While en route, if time permits, obtain further patient history regarding possible eligibility for thrombolytics, completing the “PREHOSPITAL CHEST PAIN CHECKLIST”. The following is a list of contraindications to thrombolytics:

Absolute and Relative Contraindications to Thrombolytic Therapy (Adapted from ACLS)		
Time Frame	Absolute Contraindications	Relative Contraindications
Right Now	Suspected aortic dissection Known intracranial neoplasm Pregnancy (certain lytic agents)	Severe, uncontrolled hypertension (BP > 180/110) Current anticoagulant use Prolonged (> 10 minutes) and potentially traumatic CPR
Past 2 – 4 Weeks	Active internal bleeding (except menses)	Trauma, especially head trauma Major surgery Noncompressible vascular punctures Internal bleeding
Past Year	Non-hemorrhagic stroke or TIA Prior exposure to specific lytic agent	Intracerebral pathology
Ever	Hemorrhagic stroke Prior allergic reaction to streptokinase	Known bleeding disorder



Monitoring of BP with Nitro Administration: All levels of EMS Personnel are required to monitor and document the patient's BP reading before and after each administration of Nitroglycerin (Nitro)

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3.3 - ARRHYTHMIAS

FIRST RESPONDER

1. Open and maintain the airway. Administer {O₂}. Increase rate as needed for respiratory distress.

BASIC

2. Establish communications with Medical Control and advice of patient condition. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.

3.3.1 - BRADYCARDIAS

Definition: Pulse < 60 and patient is symptomatic (dizzy, short of breath, hypotensive).

FIRST RESPONDER

1. Administer {O₂} – Increase flow rate as needed for respiratory distress.

BASIC

2. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.

3.3.2 – TACHYCARDIA

Definition: Pulse >120 and patient is symptomatic (dizzy, short of breath, hypotensive).

FIRST RESPONDER

If Pulse > 120 and patient is symptomatic (dizzy, short of breath, hypotensive)

1. Administer {O₂}. Increase flow rate as needed for respiratory distress.

BASIC

2. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.

3.4 - SHOCK

FIRST RESPONDER

1. Administer 100% {O₂}.
2. Keep Patient warm. Hypothermia is a significant, and frequent, problem in Shock or Major Trauma patients. Do all that you can to maintain patients' body temperature.

BASIC

3. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.

3.4.1 - NON-TRAUMATIC SHOCK WITHOUT PULMONARY EDEMA

This section intentionally left blank.

3.4.2 – NON-TRAUMATIC SHOCK WITH PULMONARY EDEMA

This section intentionally left blank.

3.4.3 – EXSANGUINATING HEMORRHAGE

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FIRST RESPONDER

1. Establish and control airway
2. Control Bleeding.
3. Place patient on {100% O₂} with NRB regardless of {pulse ox readings}.
4. Control Bleeding.

BASIC

3. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene

3.5 - STROKE

GENERAL CONSIDERATIONS

1. The patient needs to be transported without delay to the most appropriate hospital.
2. NOTIFY HOSPITAL AS SOON AS POSSIBLE.
3. Time of onset of signs and symptoms must always be obtained, documented and relayed to the receiving facility.
4. Nitro should not be used unless chest pain is present.
5. **Time of onset of signs and symptoms must always be obtained, documented and relayed to the receiving facility**
6. Evaluate the patient using the “PREHOSPITAL CVA CHECKLIST,” including the three tests of the Cincinnati Prehospital Stroke Scale:
 - A. Facial Droop (pt. shows teeth or smiles):
 - Normal – both sides of face move equally
 - Abnormal – one side of face does not move as well as other side
 - B. Arm Drift (pt. closes eyes and holds both arms straight out for 10 seconds):
 - Normal – both arms move the same, or both arms do not move at all (other findings, such as pronator grip, may be helpful)
 - Abnormal – one arm does not move, or one arm drifts down compared with the other
 - C. Abnormal Speech (have pt. say “you can’t teach an old dog new tricks”):
 - Normal – pt. uses correct words with no slurring
 - Abnormal – pt. slurs words, uses wrong words, or is unable to speak
7. Assessment should also include Glasgow Coma Score with components. Patients with scores of 8 or less have poor prognosis and need ALS as soon as possible.
8. **Consider transporting acute CVA/TIA patients to a facility offering thrombolytics for stroke *if you will be able to arrive within two hours from the time of onset of symptoms.* Contact Medical Control for advice.**

FIRST RESPONDER

1. Provide {oxygen} by {nasal cannula} at 4 lpm, and increase as needed with respiratory distress.
2. Be prepared to hyperventilate at a rate of 24 respirations per minute and/or assist ventilations with {oral or nasal airway} and {BVM or FROPVD.}

BASIC

3. Apply {Pulse Oximeter}, and evaluate relevant history of condition, and Cincinnati Stroke Scale. Maintain >92% SpO₂.
4. **{Determine blood sugar level.}**
 - A. Blood sugar less than 60, administer 1 tube of **Oral Glucose**.
 - B. May be repeated in 10 minutes if blood sugar remains below 60.

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- C. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, administer 1 tube of **Oral Glucose**.
5. Evaluate the patient using the “**PREHOSPITAL CVA CHECKLIST**,” including the three tests of the Cincinnati Prehospital Stroke Scale.
6. Transport **IMMEDIATELY**, and notify hospital as early as possible of need to alert the Stroke Team.



Symptoms Mimicking Stroke

- Unrecognized seizures
- Subdural hematoma
- Brain tumor
- Confusional states
- Syncope
- Toxic or metabolic disorders (eg, hypoglycemia)

4.0 - TRAUMA EMERGENCIES

4.0.1 – GENERAL CONSIDERATIONS

1. **Minor Trauma** patients may be transported to non-trauma Centers. Vital Signs should be recorded, all necessary splinting and bandaging completed as needed.
2. Administer **{O2}** at 12-15 liters/minute by NRB mask to all significant trauma patients.
3. **Major Trauma** patients are to be transported as soon as possible to the nearest appropriate facility, per destination protocols.
 - A. 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.
 - B. Limit on-scene time to 10 minutes or less whenever feasible.
 - C. The Glasgow Coma Scale can be completed in seconds, and the component scores relayed to Medical Control. Communicate and document components, rather than overall score.
 - D. Hypothermia is a significant and frequent problem in Major Trauma patients. Do all that you can to maintain patient's body temperature.
 - E. Contact receiving hospital and provide Medical Control with **MIVT and ETA**:
 - Mechanism of Injury
 - Injuries
 - Vitals
 - Treatment
4. The **ONLY** procedures that should take precedence to transport are:
 - A. **Extrication**
 - B. **Airway Management**
 - C. **Stabilization of neck, back, femur and pelvic fractures on a backboard**
 - D. **Exsanguinating hemorrhage Control.**



Mnemonic: EASE.

4.0.2 TRIAGE AND TRANSPORTATION GUIDELINES

4.0.2.1 - CONCEPTS

1. After the trauma patient's extrication, the on-scene time should be limited to **TEN MINUTES** or less, except when there are extenuating circumstances.
2. Trauma Patients, as identified in this document, should be transported to “**THE NEAREST**”

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APPROPRIATE TRAUMA CENTER”.

3. 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.
4. **PRE-ARRIVAL NOTIFICATION OF THE RECEIVING FACILITY IS ESSENTIAL!** Give Mechanism of Injury, Injuries, Vital Signs, Treatment (MVIT) and ETA.
5. List in the EMS Run Report which of the State Trauma Triage Criteria was met by the patient.

4.0.2.2 - TRAUMA CENTER/FACILITY CAPABILITIES

1. Level I and II Trauma Centers can care for the same trauma patients.
 - A. Level III Trauma Centers offer services, based on individual hospital resources that provide for initial assessment, resuscitation, stabilization, and treatment for the trauma patient.
 - B. 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.
 - C. In areas where the trauma patient is in close proximity to a Level III trauma center and a Level I or 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 and treatment at the proximate Level III trauma center or from direct transport by EMS Provider to the Level I or II trauma center.
 - D. Regional Adult Trauma Centers
 - Level I – Miami Valley Hospital
 - Level II – Good Samaritan Hospital
 - Level III – Greene Memorial Hospital
 - E. Regional Pediatric Trauma Centers
 - Pediatric: Children’s Medical Center
 - Adult and Pediatric: Miami Valley Hospital
3. 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 critically injured trauma patients. EMS provider may arrange for air medical transport from the scene.
4. 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 nearest acute care hospital for stabilization and transfer. EMS provider may arrange for air medical transport from the scene.
5. **All pregnant trauma patients should be transported to the NEAREST ADULT Trauma Center, unless transport time > 30 minutes.**

4.0.2.3 - AIR MEDICAL TRANSPORTATION

PRE-ARRIVAL NOTIFICATION OF THE RECEIVING FACILITY IS ESSENTIAL.

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

4.0.2.4 - USE OF GUIDELINES

EXCEPTIONS:

- A. 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;
- B. 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;
- C. Transporting the victim to an adult or pediatric trauma center would cause a shortage of local

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emergency medical services resources.

- D. No appropriate trauma center is able to receive and provide trauma care to the victim without undue delay;
- E. 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, such a request is made by an adult member of the patient's family or legal representative of the patient.

4.0.3 - PREHOSPITAL FIELD ADULT TRAUMA TRIAGE GUIDELINES

1. Utilize for persons 16 and above
2. 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

1. All penetrating trauma to head, neck, torso, and extremities proximal to elbow and knee
2. Abdominal injury with tenderness, distention, or seat belt sign
3. Chest injury: Flail chest and/or tension pneumothorax
4. Two or more proximal long bone fractures
5. Evidence of pelvic fracture (exception: isolated hip fracture)
6. Spinal cord injury with signs and symptoms of paralysis
7. Burns greater than 10% Total BSA or other significant burns involving the face, feet, hands, genitalia, or airway
8. Amputation proximal to wrist and/or ankle
9. Evidence of serious injury of 2 or more body systems
10. Crush injury to head, neck, torso, or extremities proximal to knee or elbow

YES = To Trauma Center	NO = Assess Physiologic
Alert Trauma Team	

PHYSIOLOGIC

1. GCS =/ \leq 13 (See Section 4.3.1) loss of consciousness at anytime greater than 5 minutes or alteration in level of consciousness with evidence of head injury at time of exam or thereafter, or fails to localize pain
2. Respirations less than 10 or greater than 29 or intubation or relief tension pneumothorax
3. Pulse greater than 120 in combination with any other physiologic criteria
4. SBP < 90 or absent radial pulse with carotid pulse present

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

MECHANISM OF INJURY

1. Auto-pedestrian/auto-bicycle injury with significant (> 5 mph) impact
2. Death in same passenger compartment

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3. Ejection from motor vehicle
4. Extrication time >20 minutes
5. Fall > 20 feet
6. High Speed auto crash
 - C. Initial speed > 40 mph
 - C. Intrusion into passenger compartment > 12 inches
 - C. Major auto deformity > 20 inches
7. Open motor vehicle crash >20 mph or with separation of rider from vehicle
8. Pedestrian thrown or run over
9. Unrestrained rollover

YES = Consider Trauma Center	NO = Check Special Situations

SPECIAL SITUATIONS

1. Age >55
2. Preexisting cardiac and/or respiratory disease
3. Insulin dependent diabetes, cirrhosis, morbid obesity, seizure
4. Patient with bleeding disorder or on anticoagulants
5. Immunosuppressed patients (renal dialysis, transplant, cancer, HIV)
6. All pregnant trauma patients should go to nearest adult trauma center, if within 30 minutes transport time.

YES = To Trauma Center	NO = To Local Hospital

4.1 - MULTIPLE TRAUMA

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

FIRST RESPONDER

1. Establish airway, breathing and circulation. Maintain C-spine immobilization. Use the modified jaw-thrust if airway needs to be opened.
2. Assess patient and initiate 100% {O₂} therapy via NRB mask
3. If snoring is heard or patient unconscious: insert an {oral or nasopharyngeal airway}, and assist ventilations with 100% {O₂}.
4. If gurgling heard or secretions/blood/vomitus present {suction} airway.
5. Assure adequate ventilation. If breathing is slow (less than 10 breaths per minute), or shallow and rapid (greater than 29 breaths per minute), assist breathing using bag-valve mask with 100% {O₂} and reservoir.
6. Control hemorrhage by appropriate method, and splint/immobilize as indicated.

BASIC

7. If patient resuscitation is appropriate according to **Section 3.1.5, “Non-Initiation of CPR,”** perform {endotracheal intubation} using in-line immobilization technique. Confirm tube placement using **Primary and Secondary Methods**, and secure tube.
8. Manage any injury that may compromise breathing.
9. Place/maintain the patient in correct position to maintain the airway.
10. Apply {Pulse Oximeter}.

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- Open pneumothorax: cover with an occlusive dressing, tape three sides down.
- Tension pneumothorax:
 - lift one side of any occlusive dressing;
 - if patient has signs and symptoms of tension pneumothorax, perform needle decompression on the affected side;
 - if patient with torso trauma has rapidly and profoundly dropping or non-palpable BP, perform bilateral needle chest decompression.
- After chest decompression, provide positive pressure ventilation.
- Flail chest: immobilize with a bulky dressing or towels taped to the chest.

11. TRANSPORT immediately!



During transportation:

- A. Continue to evaluate patient.
- B. Splint individual fractures.
- C. Check pulses distal to the fracture site.
- D. Check distal skin color, temperature, neurologic status.
- E. Obtain relevant history.

4.2 - TRAUMATIC FULL ARREST AFTER INITIATION OF CARE

FIRST RESPONDER

1. Open, assess, and maintain the airway, using the modified jaw-thrust, always assume C-spine injury.
2. Ventilate with 100% {O₂} using bag-valve-mask. Ventilate at a rate of 24/minute with severe head injury.
3. Check carotid pulse, if no pulse; begin CPR unless patient meets **Non-Initiation of CPR in Section 3.1.5.**
4. Provide ventilations during CPR with a {Bag-Valve-Mask (BVM) or Positive Pressure Ventilation (PPV) with 100% {oxygen}}.
5. CPR continuously until {AED} is attached to patient. Press to analyze. If no shock advised, continue CPR.
6. If shock advised, provide set of three stacked shocks.
7. CPR continuously for one minute, if no pulse, then press to analyze. If shock advised, repeat set of three (3) stacked shocks.
8. If no shock advised by {AED} at any point, transport as soon as possible
9. CPR continuously.
10. Stop external bleeding.

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BASIC

11. Contact Medical Control and advise of patient's condition, while continuing CPR and rapid transport to appropriate facility by ground, if appropriate.
12. If patient resuscitation is appropriate according to **Section 3.1.5: Non-Initiation of CPR**, perform {endotracheal intubation} using in-line immobilization technique. Confirm tube placement using **Primary and Secondary Methods**, and secure tube.
13. Approximately every five minutes stop vehicle and re-analyze patient as long as shock advised. Never shock or analyze in a moving vehicle

4.3 - HEAD INJURY

GENERAL CONSIDERATIONS

1. Evaluate patient condition:
 - A. Level of Consciousness
 - B. Pupil size and reaction
 - C. Glasgow Coma Scale results
2. {Orotracheal intubation}, if patient arrests, should be accomplished gently with in-line C-spine immobilization. Confirm tube placement using **Primary and Secondary Methods**, and secure tube
3. Do not hesitate to take control of airway.
4. Ventilate at a rate of 24 per minute when there are the following signs of cerebral herniation:
 - A. Blown pupils, bradycardia, posturing, and decreased Level of Consciousness.
 - B. {quantitative (i.e., numeric) End Tidal CO₂} (EtCO₂), ventilate at a rate to maintain EtCO₂ readings at approximately 30 mmHg (30 torr).}
5. Notify hospital for all patients with serious signs and symptoms of Head Injury; advise of all three components of GCS.

4.3.1 - GLASGOW COMA SCALE

To be completed on all patients

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

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Hyperventilation and EtCO₂ Levels: Maintain good ventilation at rate of about one breath every 4 – 5 seconds with high flow oxygen. Prophylactic hyperventilation for head injury is no longer recommended. Cerebral herniation syndrome is the only situation in which hyperventilation (rate of 24 per minute) is still indicated.

An increase in the level of CO₂ (hypoventilation) promotes cerebral vasodilation and increased swelling, while lowering the level of CO₂ (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 when 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, 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.

4.4 - EXTREMITY FRACTURES, DISLOCATIONS, SPRAINS

FIRST RESPONDER/BASIC

1. ABC's with C-spine control as indicated.
2. Control bleeding by direct pressure.
3. Assess extremity distal to the injury for color, pulses, sensation, temperature and movement.
4. Apply appropriate splinting device.
5. Re-assess color, pulses, sensation and movement after splinting and during transport.
6. Elevate extremity applying {ice/cold pack} to site.
7. For open fractures, control bleeding with direct pressure and cover with dry, sterile dressing.



Rules of Splinting

1. Adequately visualize the injured part.
 - Check and record distal sensation and circulation before and after splinting. Check movement distal to the fracture if possible (ask conscious patient to wiggle fingers or observe motion of the unconscious patient when a painful stimulus is applied)
 - If the extremity is severely angulated and pulses are absent, apply gentle traction in an attempt to straighten it. This traction should never exceed 10 pounds of pressure. If resistance is encountered, splint the extremity in the angulated position. When attempting to straighten an extremity, it is very important to be honest with yourself with regard to resistance. It takes very little force to lacerate the wall of a vessel or to interrupt the blood supply to a large nerve. If the trauma center is near, always splint in the position found.
 - Open wounds should be covered with a sterile dressing before you apply the splint. Splints should always be applied on the side of the extremity away from open wounds to prevent pressure necrosis.
 - Use the splint that will immobilize one joint above and below the injury.
 - Pad the splint well.

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- Do not attempt to push bone ends back under the skin. If applying traction and the bone end retracts back into the wound, do not increase the amount of traction. Do not use your hands or any tools to try to pull the bone ends back out, but be sure to notify the receiving physician. Bone ends should be carefully padded by bandages before pneumatic splints are applied to the lower extremities. The healing of bone is improved if the bone ends are kept moist when transport time is prolonged.
- In a life-threatening situation, injuries may be splinted while the patient is being transported. When the patient is stable, splint all injuries before moving the patient.
- If in doubt, splint a possible injury.

Reference: BTLS

Note: The person who requires a load and go approach can be adequately immobilized by careful packaging on the long spineboard. Additional splinting in the vehicle en route to the hospital as time and the patient's condition permits.



Management of Specific Orthopedic Injuries

** PASG, Sager or other Traction splints are Basic EMT procedures only*

SITE	INJURY	SUGGESTED IMMOBILIZATION
Clavicle	Fracture	Sling and swath
Shoulder	Dislocation	Splint in position found with pillow, sling and swath
Humerus	Fracture	Short board splint & sling and swath
Elbow	Fracture	Splint in position found
Elbow	Dislocation	Splint in position found
Forearm	Fracture	Rigid splint and sling
Wrist	Fracture	Splint in position found
Hand	Fracture	Splint in position of function
Finger	Fracture	Malleable padded splint in position of function
Pelvis	Fracture	*PASG & long board
Hip	Fracture	Blanket between legs & secure injured leg to uninjured leg, backboard
Hip	Dislocation	*Sager Splint, Long board with leg supported with pillow
Femur	Fracture	*Sager Splint, other Traction splint, PASG
Knee	Fracture	Splint in position found
Knee	Dislocation	Splint in position found unless instructed to reduce.
Tibia/fibula	Fracture	Air splint, padded board splint, or *PASG
Ankle	Fracture	Pillow splint or air splint
Ankle	Dislocation	Pillow splint or air splint
Foot	Fracture	Pillow splint or air splint
Toe	Fracture	Tape to adjacent toe

4.5 - DROWNING AND NEAR DROWNING

FIRST RESPONDER/BASIC

1. Maintain personal safety at all times.
2. Assure ABCs, starting in the water if necessary.
3. Consider spinal immobilization and deliver 100% {O2}.

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4. If patient arrests, or is found in arrest, attempt to evaluate for the presence of hypothermia. If severe hypothermia is strongly suspected, limit shock attempts to no more than three.
5. Check pulse, assure ABCs, intubate apneic pulseless patient and continue CPR.
6. Apply AED and check. Follow cardiac arrest guidelines.
7. Evaluate neurological status including level of consciousness (AVPU), pupillary response, and movement.
8. Remove wet clothing, dry the patient, wrap in warm blankets, and try to maintain the body temperature.
9. If feasible for patient condition, Near Drowning patients should be transported to a Trauma Center.

4.6 - HYPOTHERMIA/FROSTBITE

GENERAL CONSIDERATIONS

1. Secure airway, and consider cervical spine immobilization.
2. Administer {warmed, humidified} 100% {O₂}, by NRB mask and or BVM.
3. Attempt to evaluate the severity of hypothermia, if means are available.
4. Evaluate neurological status including level of consciousness (AVPU) and pupillary response.
5. Notify hospital immediately.
6. Move patient to warm environment, remove all wet clothing and cover with blankets.
7. Take great care to avoid any rough movement, since that can precipitate VFib. It may be beneficial to immobilize the victim on a backboard.
8. Assess vital signs, mental status, temperature of patient and environment, and evidence of local injury. It may be necessary to assess pulse and respirations for up to 30 seconds or more to confirm arrest in the profoundly hypothermic patient.
9. Diabetics are highly susceptible to cold illnesses. Consider the possibility of hypoglycemia, and treat accordingly.
10. If patient condition warrants, Hypothermia patients should be transported to a Trauma Center. Patients with severe frostbite should be transported to a Burn Center.

4.6.1 -HYPOTHERMIA WITH ARREST

FIRST RESPONDER

1. CPR continuously.
2. Consider spinal immobilization. Evaluate for other traumatic injuries.
3. Apply {AED} and activate device. Check rhythm and shock if indicated. Maximum of three (3) shocks: 200j, 300j, and 360j.
4. If “no shock advised”, begin CPR.
5. {Use a hypothermia thermometer.} If body temperature is < 30 degrees centigrade (86 degrees Fahrenheit), or severe hypothermia is strongly suspected, limit defibrillation attempts to no more than three.
6. If body temperature is > 30 degrees centigrade (86 degrees Fahrenheit), follow normal arrest protocols.
7. If “No Shock Advised”, begin CPR.

BASIC

7. {Intubate and oxygenate the patient with 100% O₂ that is {warmed and humidified.} Confirm tube placement using **Primary and Secondary Methods**, and secure tube.
8. Transport IMMEDIATELY after ABC's and appropriate defibrillations (as above), unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.

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9. Diabetics are highly susceptible to cold illnesses. Consider the possibility of hypoglycemia.
10. Continue resuscitative efforts for longer than normal, even if there is no response while in transit.
11. Contact Medical Control.



AED Usage: If AED has recording capabilities, start verbal documentation when AED is applied.

4.6.2 - HYPOTHERMIA WITHOUT ARREST

FIRST RESPONDER

1. Do not initiate CPR if there is any pulse present, no matter how slow.
2. Consider spinal immobilization; evaluate for other trauma.
3. Use {**O2**}, high flow. Do not hyperventilate. Do not use adjunctive airway equipment unless necessary. If necessary, use least intrusive measures that will adequately assure airway and ventilation.
4. Ventilate if necessary, and oxygenate with 100% {warmed/humidified}.**O2**.
5. Avoid rough handling and unnecessary stimulation.
6. Do not allow conscious patients to ambulate, exercise or move about.
Diabetics are highly susceptible to cold illnesses. Consider the possibility of hypoglycemia.

BASIC

7. {Determine blood sugar level.}
 - A. Blood sugar less than 60, administer 1 tube of **Oral Glucose**.
 - B. May be repeated in 10 minutes if blood sugar remains below 60.
 - C. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, administer 1 tube of **oral glucose**
8. If feasible for patient condition, hypothermia and frostbite patients should be transported to a Trauma Center.
- 9.
10. May be repeated in 10 minutes if blood sugar remains below 60.
11. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, administer 1 tube of **Oral Glucose**.
7. If patient condition warrants, Hypothermia patients should be transported to a Trauma Center and Frostbite patients should be transported to a Burn Center.

4.6.3 - FROSTBITE

FIRST RESPONDER

1. Protect injured areas from pressure, trauma, and friction. Remove all covering, including jewelry, from injured parts. Do not rub. Do not break blisters.
2. Do not attempt to thaw injured part with local heat.
3. Do not allow limb to thaw if there is a chance that limb may refreeze before evacuation is complete.
4. Maintain core temperature by keeping patient warm with blankets, warm fluids, etc.

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BASIC

5. Severe frostbite injuries should be transported to a Burn Center.
6. Transport and Contact Medical Control.

4.7 - BURNS/SMOKE INHALATION

1. GENERAL CONSIDERATION

Burn Referral Centers:

- A. Transport patients under 16 years of age with severe burns to the pediatric regional burn center, at the Children's Medical Center, unless > 30 minute transport time.
- B. Transport patients 16 years of age and older with severe burns to the adult regional burn center at Miami Valley Hospital, unless > 30 minute transport time.
2. The first priority is to assure scene safety and then remove the patient from the heat and/or flame, electrical or chemical exposure.
 - A. When dealing with contaminated environments, EMTs must have appropriate protective clothing. If not available, contact appropriate Haz Mat service for such equipment.
3. Airway, Breathing, and Circulation must be stabilized before addressing the burn. Establish and maintain C-spine control if indication of neck/head trauma.
4. Patient with extensive burns must be monitored for hypothermia. Avoid use of ice and/or prolonged cold compresses. When in doubt, cover with dry dressing. Cover burn areas with clean, dry sheets or dressings after cooling first. Remove all rings, watches, and jewelry. Superficial and partial thickness burns of less than 10% may have wet dressings applied. Do not remove items which have adhered to the skin.
5. In caring for the burn, the EMT should:
 - A. Stop the Burning
 - B. Reduce the pain
 - C. Prevent contamination
6. Major burns should be transported directly to a Burn Center when possible, as above. Inhalation injuries with unsecured airway should be transported to the nearest facility. For patients with major burns, and long transports, you may contact Medical Control for destination:
 - A. Closest Hospital or
 - B. Burn Center
7. For chemical burns, gross decontamination **must be done at the scene. Always include removal of all involved clothing.** Advise receiving facility, and be prepared to transport to decontamination area. See **Section 6.6 – Haz-Mat.**
8. Keep patient warm – turn off air conditioner if appropriate.
9. The burn patient should be managed as any other trauma victim. The burn itself has a low priority over other associated injuries for which the patient must be completely evaluated. Vital signs may be taken over damaged tissue if no other area is accessible.

FIRST RESPONDER

1. Assess for respiratory distress, stridor, hoarseness, sooty sputum, singed eyebrows and nares or burns of the face or airway. Suspect airway injury and request ALS if available. Assess neuro status.
2. Administer 100% {O₂} by {NRB Mask or BVM}.
3. Determine types of burn and treat as follows:
 - A. Thermal (dry and moist):

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1. Stop burning process: i.e., remove patient from heat source, cool skin by applying water if burn area is less than 10% body surface area; remove clothing.
 2. If patient starts to shiver or skin is cool, stop cooling process
 3. Avoid wet dressings if burn area is greater than 10% body surface area (BSA).
- B. Radiation Burns:
1. Treat as thermal burns except when burn is contaminated with radioactive source, then treat as chemical burn.
 2. Contact HAZ-MAT TEAM for assistance in contamination cases
- C. Chemical Burns:
1. Wear appropriate protective clothing and respirators
 2. Remove patient from contaminated area to decontamination site (NOT AMBULANCE).
 3. Determine chemicals involved; contact appropriate agency for chemical information.
 4. If any possibility of continuing contamination, notify hospital promptly.
 5. Remove patient's clothing and flush skin.
 6. Leave contaminated clothes at scene. Cover patient completely before loading into squad.
 7. Personnel not involved in decontamination process should transport patient.
 8. See **Section 6.6 - Haz-Mat**, for some specific treatments.
 9. For Chemical Burns, notify hospital as early as possible! It is imperative that the hospital be notified prior to your arrival.
- D. Electrical Burns
1. Shut down electrical source; do not attempt to remove patient until electricity is confirmed to be shut off.
 2. If no pulse, apply {AED} and follow 3.1.1.
 3. Assess for visible entrance and exit wounds and treat as thermal burns.
 4. Assess for internal injury, i.e., vascular damage, tissue damage, fractures, and treat.
- E. Inhalation Burns:
1. Provide {O₂} therapy.

BASIC

1. Determine the severity of the burn, contact Medical Control and transport.
2. For Inhalation Burns, Thermal Burns, and Smoke Inhalation: provide {humidified} O₂ using a {wall humidifier} with saline. Be prepared to Provide Endotracheal Intubation in case of ARREST.

4.8 - HEAT EXPOSURE

GENERAL CONSIDERATIONS

1. Geriatric patients, pediatric patients, and patients with a history of spinal injury or diabetes mellitus are the ones most likely to suffer heat-related illness. Other contributory factors may include heart medications, diuretics, cold medications and/ or psychiatric medications.
2. Heat exposure can occur either due to increased environmental temperatures, prolonged exercise or a combination of both. Environments with temperature above 90 degrees Fahrenheit and humidity over 60% present the most risk.
3. When altered mental status is present consider other causes such as hypoglycemia, stroke and/ or shock.

FIRST RESPONDER

1. Secure and maintain airway, and consider cervical spine injury.
2. Administer {O₂}, use BVM if needed.
3. Move patient to cool environment.
4. Be prepared for seizures.

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BASIC

5. Assess mental status, temperature of patient and of environment. Assess vital signs at least every 15 minutes.
6. Strip the patient of clothing, cool the patient, and apply water to the skin. Provide oral fluids if patient is conscious, and not vomiting or extremely nauseous.
7. Maintain {SpO₂} to at least 95%
8. Intubate the apneic/pulsless patient, if indicated, and oxygenate with 100% O₂.
9. If feasible for patient condition, significant Heat Exposure patients should be transported to a Trauma Center.



Heat Stroke: Most serious type of exposure illness, usually due to prolonged exposure to heat, inadequate fluid replacement and deficient thermoregulatory function. Patient often experiences inadequate perspiration with body temperatures reaching 105 degrees F or greater. Skin is usually hot and dry and there may be an altered LOC and/or coma. Seizures may occur. Cardiovascular collapse is the usual cause of death.

Heat Exhaustion: More moderate form of heat exposure associated with dehydration combined with overexertion. Skin is cooler and the core temperature is below 105 degrees F. The patient may experience syncope with orthostatic hypotension.

Heat Cramps: the mildest form of heat exposure caused by dehydration, overexertion, and electrolyte abnormalities. the skin is moist with muscle cramps, usually affecting large muscle groups.

Altered Mental Status: When altered mental status is present, consider other causes such as hypoglycemia, stroke and/or shock.

4.9 – SYMPTOMATIC CARBON MONOXIDE POISONING

FIRST RESPONDER

1. Remove the victim from the contaminated area.
2. Airway with c-spine control as indicated.
3. Provide high flow {O₂} to all suspected CO poisonings.
4. Evaluate for associated injuries.

BASIC

5. Provide humidified O₂ using a {wall humidifier} with saline. **Pulse Oximetry will give false readings: Do not use it.**
6. If CO is suspected, and any of the following High Risk Factors are present, strongly consider Hyperbaric Oxygen (HBO) Treatment. Contact the closest hospital, and discuss where the patient should be transported.
 - E.. Underlying cardiovascular disease, or cardiovascular symptoms such as chest pain or shortness of breath.
 - E.. > 60 years of age.
 - E.. Obvious neuro-psychological symptoms, such as ANY interval of unconsciousness, loss of time, inability to perform simple motor tasks, or loss of memory.
 - E.. Smoke inhalation victims.
 - E.. Pregnancy.

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4.10 - EYE INJURY

GENERAL CONSIDERATION: CONTACT LENSES

1. If possible, contact lenses should be removed from the eye. Be sure to transport them to the hospital with the patient. If the lenses cannot be removed, notify the ED personnel as soon as possible.

SPECIFIC CARE

Use Nasal Cannula and IV tubing for irrigation

When eye irrigation is indicated, the eyes can be irrigated with a nasal cannula:



- Place cannula over bridge of the nose with nasal prongs pointing down toward the eyes.
- Attach cannula to an intravenous administration set using NS.

Run continually into both eyes.

4.10.1 - EYE INJURY: CHEMICAL BURNS

FIRST RESPONDER

1. When possible determine type of chemical involved first. The eye should be flushed with copious amounts of water or saline, for a **minimum** of 20 minutes, starting as soon as possible and continue until the pain is relieved. Any delay may result in serious damage to the eye.
2. Always obtain name and, if possible, the Material Safety Data Sheet (MSDS), or ask that name or MSDS be brought to the hospital as soon as possible

BASIC

3. Use Nasal Cannula and IV tubing for irrigation.

4.10.2 – MAJOR EYE TRAUMA

1. Keep patient quiet.
2. Cover injured eye with Metal Eye Shield or Cardboard or Styrofoam cup, taped onto bony prominences.
3. Do not use a pressure patch, or any absorbent dressing on or near any eye that may have ruptured, or have any penetrating trauma.
4. Cover both eyes to limit movement.
5. Transport with head elevated.

4.11 – {SPINAL INJURY CLEARANCE ALGORITHM }

The Spinal Injury Clearance Algorithm, when authorized by the Medical Director, permits carefully trained personnel to determine which patients can safely be transported without spinal immobilization. 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 by another EMS provider until all ten evaluation steps are completed.

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.

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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 palpation) or deformity: Immobilize.
10. If pain with cervical motion: Immobilize.
11. {If **none** of the above are present, personnel who have been appropriately trained, and who are specifically authorized by their Department and Medical Director, 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.
12. 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.



Spinal Injury Clearance: All personnel need to realize that this protocol is designed for the patient's safety. This will only permit avoidance of spinal immobilization in a relatively small number of patients. 80 - 90% of the patients we currently immobilize will still require a backboard and associated equipment under this protocol.

Patient's complaint of cervical or other spinal column pain refers to the patient's subjective assessment of pain prior to palpation by EMS personnel.

4.12 - START TRIAGE SYSTEM FOR MASS CASUALTY INCIDENTS (MCIs)

START SYSTEM OF TRIAGE

I. INTRODUCTION .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. However, there are limitations to START (see section below).

II. PROCEDURE.

A. Initial Triage (Using the START Method).

- 1) Utilize the Triage Ribbons (color-coded strips). One should be tied to an upper extremity in a **VISIBLE** location (wrist if possible, preferably on the right).
 - a) RED - Immediate.
 - b) YELLOW- Delayed.
 - c) GREEN- Ambulatory (minor).
 - d) BLACK- Deceased (non-salvageable).
- 2) Independent decisions should be made for each victim. Do not base triage decisions on the perception of too many REDs, not enough GREENs, etc.
- 3) If borderline decisions are encountered, always triage to the most urgent priority (eg. GREEN/YELLOW patient, tag YELLOW). Move as quickly as possible!

B. Secondary Triage.

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

III. START.

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- A. Locate and remove all of the walking wounded into one location away from the incident, if possible. Assign someone to keep them together (eg. 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.
- B. Begin assessing all non-ambulatory victims where they lay, if possible. Each victim should be triaged in 60 seconds or less, preferably much less.

NOTE: Remember the pneumonic RPM (Respirations, Perfusion, Mental Status).

1) Assess RESPIRATIONS:

- a) If respiratory rate is 30/min. or less go to PERFUSION assessment.
- b) If respiratory rate is over 30/min, tag RED.
- c) If victim is not breathing, open the airway, remove obstructions, if seen, and assess for (a) or (b) above.
- d) If victim is still not breathing, tag BLACK. (Depending on circumstances, you may attempt three rapid defibrillations before triage to BLACK.)

2) Assess PERFUSION:

- a) Performed by palpating a radial pulse or assessing capillary refill (CR) time.
- b) If radial pulse is present or CR is 2 seconds or less, go to MENTAL STATUS assessment.
- c) No radial pulse or CR is greater than 2 seconds, tag RED.
NOTE: In addition, any major external bleeding should also be controlled.

3) Assess MENTAL STATUS:

- a) Assess the victim's ability to follow simple commands and their orientation to time, place, and person.
- b) If the victim follows commands, oriented X3, tag GREEN.
NOTE: Depending on injuries (eg. burns, fractures, bleeding) it may be necessary to tag YELLOW.
- c) If the victim does not follow commands, is unconscious, or is disoriented, tag RED.

IV. SPECIAL CONSIDERATIONS.

- A. The first assessment that produces a RED tag stops further assessment.
- B. Only correction of life-threatening problems (eg. airway obstruction or severe hemorrhage) should be managed during triage.
- C. To help speed the process, Departments should consider utilizing colored (Red, Yellow, Green, Black) {Ribbons} to initially mark patients categories. Triage Tags are then attached and filled out once the patient reaches the Treatment Area.
- D. 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.

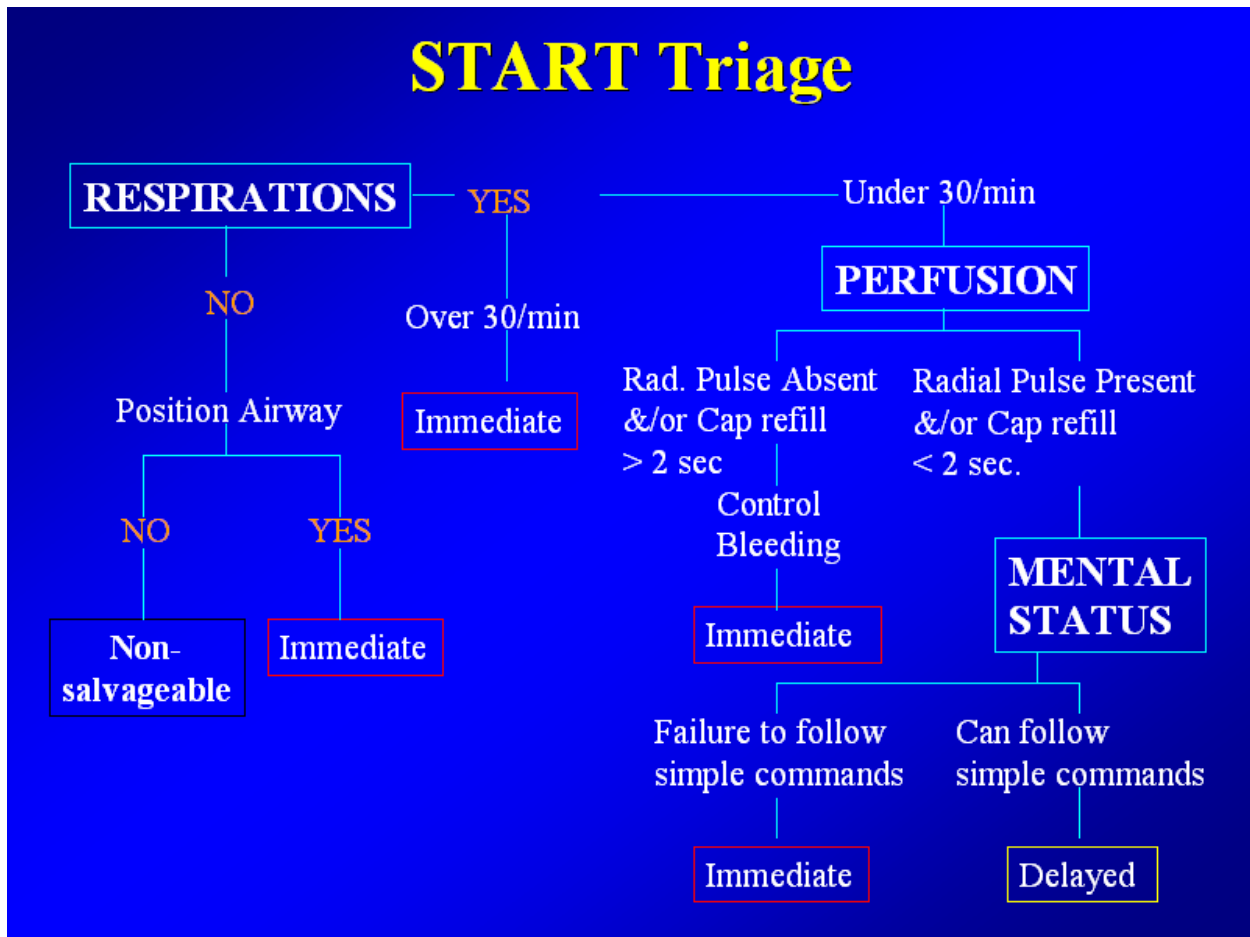
RPM: 30, 2, Can Do!

R: Respirations – 30

P: Perfusion – 2

M: Mental Status – Can do

Above was adapted from <http://www.co.broward.fl.us/tmi02719.htm>.



4.12.A - START SYSTEM LIMITATIONS



Why do we use START? There are several reasons. It is:

- Fast
- Simple
- Easy to Use
- Easy to Remember
- Consistent

Given massive situations, such as the first bombing of the World Trade Center in New York, or the Alfred P. Murrah Federal building in Oklahoma City, START is the most effective system we know of to rapidly help us sort out the casualties, from the “walking wounded” and the “worried well.”

There are also other things that we can do to provide the most effective care in a disastrous situation. In reviews of previous Mass Casualty Incidents, some of the greatest pitfalls that occur include:

- Failure to alert hospitals quickly
- Failure to perform any triage at all
- Spending too much time triaging each patient

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- Lack of focus on critical patients
- Rendering time-consuming care on scene
- Sending too many patients too quickly to nearby hospitals (i.e., “relocating the disaster to the hospital”)
- Improper use of personnel (BLS does BLS stuff. ALS does ALS stuff)
- Patients not uniformly distributed to hospitals
- Lack of strong, visible Command
- Lack of preparation or training
- Failure to adapt to circumstances
- Poor communication

When incidents involve more than 50 casualties, the Transport Sector should initially direct patients away from the nearest hospital or trauma center until they can be checked for availability. Why? Because in past large disasters, more than 75% of patients were sent to the nearest hospital or trauma center. Those facilities were then quickly overloaded. Again: Don’t relocate the disaster to the nearest hospital!

It is also crucial to remember that Triage is a process, not an event. The importance of repeated Triage, that is re-evaluating each patient over and over until they can be transported to an appropriate facility, cannot be overstated.

However, START has some very significant limitations, especially for smaller incidents. The greatest concern is the initial command to have all patients who can stand to move to another area. Those patients are then classified, at least initially, as “Green.”

Obviously, there are risks to this. With trauma patients, the potential to exacerbate an injury is very high. A patient with a spinal fracture may move in such a way that their spinal cord is severed, creating a permanent paraplegic. A person having a cardiac event triggered by the stress of the incident may well be triaged to Green in this way, and then suffer a cardiac arrest which could have been prevented. Inhalation injuries during Haz-Mat events may be missed. Still another victim may try to stand on a fractured lower leg, and turn a closed fracture into an open one. On the other hand, a patient with a relatively minor injury, such as an ankle fracture, may be unable to walk, and slow the triage process.

In small incidents, use of that component of START may put not only the patient at risk, but you, as well. Exacerbation of injuries, such as those just discussed, put you at legal risk.

Finally, even patients who receive the full START evaluation may be miscategorized. One example is a patient who fails the “Can do” Mental Status component. The assumption is that the patient’s deterioration is due to the event, but obviously, there are many conditions, from dementia to intoxication, that can impact the patient’s mental status.

A modification the START system can be used in smaller multiple casualty incidents, especially motor vehicle crashes, and incidents with less than 10 patients. First, **don’t** yell out to move the MINOR “walking wounded” to a collection area. Don’t move the Minor (Green) patients! **It is not the standard of care** to ask these patients to move at a smaller incident.

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After that, continue to use RPM to assess and categorize patients. But do not assume that those assessments are flawless, and don't forget that patient conditions change. Re-triage as the patient is moved to the Treatment Area, and repeatedly while they are in Treatment. Be prepared to upgrade and downgrade triage categories as you develop more information about the patient's condition.

The last set of concerns that we will discuss is the use of START with Children. Apneic children are more likely to have primary respiratory problems than adults. Perfusion may be maintained for a short time, and those child may be salvageable.

More frequently, pediatric patients can be either over-triaged or under-triaged, depending on age and stress levels, by using the Respiratory Rate of 30 as a measure. Capillary refill, though usually more reliable in children, may not adequately reflect peripheral hemodynamic status in a cold environment. Obeying commands may not be an appropriate gauge of mental status for younger children.

There is a companion triage system called, "JumpSTART," that tries to address these concerns. It is more complex, and we have chosen not to utilize it in this region, at least for now. However, you can consider making the following modifications to your assessment of patients who are 8 years old or less:

If a child is not breathing even after opening the airway, consider attempting 15 seconds of ventilations (e.g., Mouth to Mask), which would be about 5 breaths, if the patient still has a peripheral pulse.

If breathing resumes after this "jumpstart," tag patient Red (Immediate) and move on.

When assessing Respiratory Rate, consider using 15 – 45, rather than 30. Patients with a respiratory rate <15 or >45, or that are irregular, should be tagged as Immediate.

If the respiratory rate is in the 15 – 45 range, proceed to assess perfusion.

These additional points should help you better utilize the START triage system to care for your patients.

5.0 - RESPIRATORY DISTRESS

FIRST RESPONDER

1. Open airway and check for breathing
2. Administer {O₂} by {NRB mask or nasal cannula}; be prepared to assist ventilations by {BVM or FROPVD with 100% {O₂}.
3. **Patient with Severe Distress:** Sit patient up, assist ventilations, and give HIGH flow {O₂}.

BASIC

4. Evaluate breath sounds, and obtain {Pulse Oximetry} reading:
 - A. **Clear breath sounds:** Treat cause (MI, pulmonary embolism, metabolic disturbance, hyperventilation) and transport in position of comfort.
 - B. **If wheezes present:** Consider possibility of allergic reaction. See **Section 6.3 Anaphylaxis**.
 - C. If wheezes present and not an allergic reaction, and patient has history of COPD (emphysema, asthma, bronchitis):
 - Ask patient or involved bystanders if a bronchial dilator has been prescribed, and do they have the medication with them.
 - ♦IF MEDICATION IS PRESCRIBED TO PT. BUT NOT AVAILABLE – Call for order to access and **administer Proventil Inhaler** in BLS Drug Bag.
 - Transport immediately, unless ALS unit is en route and has an ETA of less than 5 minutes.
 - IF MEDICATION IS AVAILABLE, assure medication is prescribed for patient.
 - Check medication- expiration date, administration method.

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- Administer medication by having the patient as completely as possible exhale, then activate spray during inhalation, and have patient hold breath for ten seconds, or as long as possible, so medication can be absorbed.
 - Record patient reaction to medication and relay response to Medical Control **with vital signs**.
- D. **Rales present (pulmonary edema):** Sit patient up, administer HIGH flow **O2** by NRB and/or BVM and transport.
- E. **Sucking chest wound:** Seal open wound on 3 sides, monitor for development of Tension Pneumothorax.

5.1 - PULMONARY EDEMA

Look for and note cyanosis, clammy skin, absence of fever, coughing, wheezing, labored breathing, diaphoreses, rales in bilateral lower lung fields, tachypnea, apprehension, and inability to talk.

FIRST RESPONDER/BASIC

1. Follow Respiratory Distress Protocol, **Section 5.0**.

5.2 - ASTHMA/EMPHYSEMA/COPD

FIRST RESPONDER

1. Follow Respiratory Distress Protocol, **Section 5.0**.

BASIC

2. ♦If patient is currently prescribed Proventil (Albuterol) Inhaler but has outdated, damaged, or contaminated medication on hand, or does not have their own medication with them at the time of the Emergency, the EMT-Basic may access the BLS Drug Bag for **Proventil (Albuterol) Inhaler** only under the direction of a Physician. The EMT-B may NOT administer Proventil (Albuterol) to a patient that is not currently prescribed Proventil (Albuterol).
3. Transport immediately, unless an ALS unit is en route and has an ETA of less than 5 minutes

6 - OTHER MEDICAL ISSUES

6.1 - ALTERED LEVEL OF CONSCIOUSNESS – UNKNOWN CAUSE

FIRST RESPONDER

1. Secure airway and consider cervical spine injury.
2. Administer 100% {O2} by {NRB mask.}

BASIC

3. Apply {Pulse Oximeter}.
4. Be prepared to hyperventilate and/or assist ventilations with oral or nasal airway and BVM.
5. **{Determine blood sugar level.}**
 - E.. Blood sugar less than 60, administer 1 tube of **Oral Glucose**.
 - E.. May be repeated in 10 minutes if blood sugar remains below 60.
 - E.. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, administer 1 tube of **Oral Glucose**.
6. Transport immediately, unless an ALS unit is en route and has an ETA of less than 5 minutes.



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Oral Glucose Administration: Oral glucose is indicated for any awake but disoriented patient with blood sugar readings 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.

6.2 - DIABETIC EMERGENCIES

FIRST RESPONDER

2. Support with {100% O₂} by NRB mask

BASIC

2. **{Determine blood sugar level.}**
 - A. Blood sugar less than 60, **administer 1 tube of Oral Glucose.**
 - B. May be repeated in 10 minutes if blood sugar remains below 60.
 - C. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, administer 1 tube of **Oral Glucose.**
3. Unconscious diabetics are often hypothermic. Be prepared, and treat hypothermia when indicated.
4. Transport immediately, unless an ALS unit is en route and has an ETA of less than 5 minutes.

6.2.1 - DIABETIC EMERGENCIES: REFUSAL AFTER TREATMENT

1. It is not uncommon for a diabetic, hypoglycemic patient who responds to being given sugar (Oral Glucose) at the scene, to refuse transportation after awakening. **These patients may be permitted to refuse.** Before doing so, follow these guidelines:
 - A. Perform a **repeat physical examination**, and **repeat vital signs**. The **patient must be alert and oriented x 3**.
 - B. Warn the patient that there is a significant risk of going back into hypoglycemia, especially if the patient is on oral hypoglycemic agents.
 - C. Advise the patient that he or she should eat something substantial as quickly as possible, before the sugar given by EMS “wears off.”
 - D. Advise the patient to contact his/her family physician as soon as possible, to try to prevent future episodes.
 - E. Advise the patient to stay with someone who could call for help if necessary.
 - F. Follow normal patient refusal procedures (Refusal Form, etc.), and go to the nearest hospital to replace your supplies.
2. Meticulously document all of the above. Ensure that the EMS Coordinator of the hospital that replaces your Drug Box and Supplies receives a copy of the runsheet for his/her records.



Importance/Difficulty of Determining Competence: A mentally competent adult has the right to refuse medical care, even if the decision could result in death or permanent disability. The problem for the EMS provider is determining if the patient is mentally competent. This is especially difficult in a diabetic patient.

You need to make sure the patient is able to understand situation. At very least, patient needs to be oriented x 3. This means s/he is oriented to time (time of day, day of week, and date), to place, and to person. Follow guidelines listed above. Remember, if you leave person and they are hypoglycemic, they may die.

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6.3 - ALLERGIC REACTION/ANAPHYLAXIS: WHEEZES PRESENT

FIRST RESPONDER

1. Support with {100% O₂} by NRB mask
2. If severe allergic reaction, assist patient in **administering {Epi-Pen}** if patient has his/her medication.
3. Ask patient or involved bystanders if epinephrine by auto-injector has been prescribed for these situations and do they have the medication with them

BASIC

4. ♦ If patient is currently prescribed Epi-Pen, but has outdated, damaged, or contaminated medication or does not have their own medication with them at the time of the emergency, the EMT-B may access the BLS Drug Bag for **Epi-Pen only on orders from a physician**. The EMT-B may not administer Epi-Pen to a patient that is not currently prescribed Epi-Pen or epinephrine.
5. IF MEDICATION IS NOT AVAILABLE – Transport immediately, unless ALS unit is en route and has an ETA of less than 5 minutes. Contact Medical Control.
6. If patient develops wheezing, assist them with taking their prescribed Proventil (Albuterol) metered dose inhaler.
 - A. If patient is currently prescribed Proventil (Albuterol) Metered Dose Inhaler but has outdated, damaged, or contaminated medication on hand, or does not have their own medication with them at the time of the Emergency, the EMT-Basic may access the BLS Drug Bag for **Proventil (Albuterol) Metered Dose Inhaler only under the direction of a Physician**. The EMT-B may NOT administer Proventil (Albuterol) to a patient that is not currently prescribed Proventil (Albuterol).
7. Monitor vital signs.
8. Transport immediately, unless ALS unit is en route and has an ETA of less than 5 minutes.
9. If patient goes into cardiac arrest, intubate, possibly with smaller than normal ET tube.



Assisting with EpiPen: When assisting patient with severe allergic reaction with their own prescribed EpiPen, do the following:

- Assure medication is prescribed for patient
- Check medication for expiration date.
- Contact Medical Control, if possible.
- Administer medication in mid-thigh and hold injector firmly against leg for at least 10 seconds to assure all medication is injected.
- Record patient reaction to medication and relay to Medical Control – be sure to have vital signs.

6.4 - SEIZURES

GENERAL CONSIDERATIONS

1. Protect and support the patient.
2. Provide Aspiration precautions:
 - A. Recovery position: a side lying position with the head lowered 15 to 30 degrees
 - B. {Suction} readily available
 - C. If possible, mouth cleared of foreign bodies (food, gum, and dentures)

FIRST RESPONDER

1. Consider C-spine injury

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2. Clear and maintain airway.
3. Administer 100% {O₂} with {NRB mask}.
4. Be prepared to assist ventilations.

BASIC

5. Obtain history from family members or bystanders.
6. **{Determine blood sugar level.}**
 - A. Blood sugar less than 60, administer 1 tube of **Oral Glucose**.
 - B. May be repeated in 10 minutes if blood sugar remains below 60.
 - C. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, administer 1 tube of **Oral Glucose**.
7. Establish communications with Medical Control and advise of patient condition.
8. Transport immediately, unless an ALS unit is en route and has an ETA of less than 5 minutes.



The basic rule with seizures is to “protect and support” the patient. The seizure has usually stopped by the time the EMS personnel arrive and the patient is in the postictal state. Place the patient away from objects on which they might injure themselves; protect but do not restrain them. Evaluate for drug abuse and evidence of head trauma. If trauma is suspected, consider cervical immobilization. Obtain history from bystanders. Bring medication with patient if available.

When obtaining history, include the following:

- Seizure history
- Description of seizures, areas of body involved, and duration
- Medications
- Other known medical history – especially head trauma, diabetes, drugs, alcohol, stroke, heart disease.

6.5 - POISONING/OVERDOSE

GENERAL CONSIDERATIONS

1. WHEN DEALING WITH CONTAMINATED ENVIRONMENTS, EMS MUST HAVE APPROPRIATE PROTECTIVE CLOTHING. IF NOT AVAILABLE, CONTACT HAZ-MAT.
2. **Patient should be searched for weapons.** Consider having police perform search, but don't assume that their search was adequate.
3. EMS will consider the possibility of accidental or intentional poisoning whenever any of the following conditions are present:
 - G. History of observed or admitted accidental or intentional ingestion.
 - H. Coma.
 - I. History of known suicide gesture.
 - J. Suggestive intoxicated behavior (hyperactive, hypoactive, unstable walk, lethargic)
4. **Bring all patients' prescription medications to the hospital. Consider having police take custody of substance and means.**

FIRST RESPONDER

1. Establish airway
2. Obtain relevant history
 - What, when, why taken (if known)
 - Quantity taken (if known)
 - Victim's age and weight

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3. Make a thorough search for any and all potential poisonous substances (i.e. medications, drugs).
4. Evaluate patient's: (first and secondary assessments).
 - Breath sounds (rales)
 - Level of consciousness and gag reflex
 - Pupil size
 - Evidence of head injury

BASIC

5. Take whatever container(s) the substance(s) came from to the hospital along with readily obtainable samples of medication unless this results in an unreasonable delay of transport.
6. **{Check finger stick blood sugar}**.
7. If an **Ingested Poison** – Transport.
 - A. Bring bottle and/or remaining poison to hospital with patient. Consider having police take custody of substance.
8. If an **Inhaled Poison**:
 - A. Remove from toxic area
 - B. Secure airway, support with 100% O₂
 - C. Assist in ventilation if necessary
9. If an **Absorbed Poison**:
 - A. Remove victim's clothing - protect EMS personnel from contaminated clothing. Consider Haz-Mat Team contact.
 - B. Identify substance.
 - C. Flush skin with water before and during transport if possible - at least 10-15 minutes.
 - D. If eyes are involved flush with water or saline continuously.
10. If an **Injected Poison**:
 - A. Secure and maintain airway.
 - B. If possible, identify substance and method of injection. Consider having police take custody of substance and means.



In ingested poisoning, it is not necessary to transport emesis. Document if pills or fragments were seen in emesis. Do not give Ipecac or Activated Charcoal.

6.6 - HAZ-MAT

Contact receiving hospital immediately to allow for set up time on all Haz-Mat situations!
Any chemical burn is, by definition, is a Haz-Mat incident.

FIRST RESPONDER

1. Perform scene survey and practice Body Substance Isolation.
2. Do not attempt to treat patient until you have adequately protected yourself.
3. Consider calling for assistance.
4. **Initiate field decontamination.** First step is to remove contaminated clothing.
5. If hazardous material is tenacious, thoroughly wash the patient using a solution of {Dawn} Soap and water, paying special attention to skin folds and other areas where simple irrigation may not remove it. Do not abrade the skin!

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BASIC

6. **Do not** transport a patient until gross decontamination is completed.
7. ♦ Obtain **permission** from Medical Control before entering hospital with a potentially contaminated patient.
8. ♦ If patient is suffering effects from an identified Hazardous Material, refer to the relevant section below, and contact Medical Control for orders.
9. EMS crews should decontaminate themselves and vehicle before leaving hospital.



Field decontamination must be initiated. An example of the often overlooked importance of decon is a patient soaked in diesel fuel.

6.6.1 - HAZ-MAT: HYDROFLUORIC ACID (HF)

FIRST RESPONDER/BASIC

1. Substance is **extremely** hazardous! Deaths have been reported after burns involving < 3% Body Surface Area. Assure safety of all personnel!
2. 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, avoiding contact of clothes and the patient's face.
3. Irrigate the chemical burn with water as quickly as possible. **DON'T DELAY IRRIGATION/DECON!** Irrigate for at least 30 minutes.
4. Industrial Pre-arrival treatment should be maintained while enroute to hospital.
5. If ingested, **do not** induce vomiting. Dilute with water or milk

6.6.2 - HAZ-MAT: CYANIDE

FIRST RESPONDER

1. Substance is **extremely** hazardous Assure safety of all personnel!
2. Conscious Victims – {100% **O2**} by mask.
3. Unconscious Victims of Known or Strongly Suspected Cyanide Poisoning.
 - C. Evaluate ABCs.
 - C. If patient in cardiac arrest - CPR continuously, apply AED.

BASIC

4. If patient is apneic and in arrest -Endotracheal intubation is indicated and provide 100% **O2** by BVM.
5. 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:
 - A. Provide 100% **O2** by Bag-Valve, preferably via endotracheal tube if apneic and without pulse.
 - B. CPR if indicated. In cases of cardiac arrest associated with cyanide poisoning, the cyanide antidotes must have a very high priority.
6. Transport immediately unless an ALS unit is en route and has an ETA of less than 5 minutes

6.6.3 - HAZ-MAT: ORGANOPHOSPHATE OR NERVE GAS POISONING

1. Any case of known or strongly suspected organophosphate or carbamate (e.g., insecticides such as parathion or malathion); or nerve agent (e.g., Tabun, Sarin, Soman, VX, etc.) exposure, symptoms may include miosis (pinpoint pupils), rhinorrhea (runny nose), copious secretions, localized sweating,

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nausea, vomiting, weakness, seizures, dyspnea, loss of consciousness, apnea, diarrhea, flaccid paralysis, and cardiac arrest.

2. Substance is **extremely** hazardous. Assure safety of all personnel before entering or attempting to treat victims.

6.6.4 - HAZ-MAT: BIOLOGICAL AGENTS

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6.6.5- HAZ-MAT: Pepper Spray

Departments may purchase and utilize {Sudecon Wipes} to assist in the decontamination of patients or public safety personnel who have been sprayed with Pepper Spray.

6.7 - ABDOMINAL PAIN

FIRST RESPONDER

1. C-spine control, if indicated.
2. Administer 100% {O₂} with NRB Mask.

BASIC

3. Transport in position of comfort.
4. Give nothing by mouth.
5. If patient has vaginal bleeding, ask for an estimate of blood loss. Perform a visual perineal exam if any of the following are present:
 - Patient pregnant, voices possibility of pregnancy, or has had multiple missed menstrual periods, **and** has significant abdominal pains. Pregnant patients > 20weeks gestation should be taken to a Maternity Department if feasible; < 20 weeks should go to the Emergency Room.
 - Presenting large clots and/or suspected products of conception.
 - Any history of trauma below umbilicus with vaginal bleeding.
 - Patient states use of more than two pads saturated with blood per hour.
 - Visual observation of large vaginal blood loss.



The position of comfort for most patients with abdominal pain is supine with knees flexed, unless there is respiratory distress.

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7 - OBSTETRICAL EMERGENCIES
7.1 - MISCARRIAGE/ABORTION

FIRST RESPONDER/BASIC

1. Aggressively treat for Hypovolemic Shock, **Section 3.4.**
2. Give psychological support to patient and family.
3. Be sure to take all expelled tissue with you to the hospital.



Miscarriage/Abortion refers to premature termination of a pregnancy

7.2 - ECTOPIC PREGNANCY

FIRST RESPONDER/BASIC

1. Patient may experience severe abdominal pain, and may have intra-abdominal and/or vaginal bleeding and discharge. Patient may not know she is pregnant.
2. Aggressively treat for Hypovolemic Shock, **Section 3.4.**
3. Transport supine with knees flexed.
4. Take any expelled tissue with you to the hospital.
5. Obtain history, including Last Menstrual Period.
6. Pregnant patients > 20 weeks gestation should be taken to a Maternity Department if feasible; < 20 weeks should go to the Emergency Room.



Ectopic Pregnancy refers to growth and development of a fertilized egg occurs outside the uterus, most commonly in the fallopian tube, but sometimes in the ovary or (rarely) the abdominal cavity or cervix. It is usually discovered in the first two months, often before the woman realizes she is pregnant.

7.3 - CARDIAC ARREST IN PREGNANT FEMALE

FIRST RESPONDER/BASIC

1. Precipitating events for cardiac arrest include: Pulmonary embolism, trauma, hemorrhage or congenital or acquired cardiac disease.
2. Load and go to closest hospital! Follow all normal cardiac arrest protocols enroute, per **Section 3.**
3. 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.
4. Administer chest compressions slightly higher on the sternum than normal.



Manual Displacement of Uterus: When working cardiac arrest in pregnant patient, manually displace the uterus to the left. This helps to take the weight of the uterus off the Vena Cava, which will help maximize the blood flow to the fetus.

7.4 - THIRD TRIMESTER BLEEDING

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FIRST RESPONDER/BASIC

1. Never do a vaginal exam. Visualize the perineal area.
2. Place patient in left lateral recumbent position.
3. Treat for hypovolemic shock if indicated, **Section 3.4**.
4. Apply continuous manual displacement of the uterus to the left, or place a wedge (pillow) under the right abdominal flank and hip.

8.0 - CHILDBIRTH

GENERAL CONSIDERATIONS

1. Unless delivery is imminent, transport to a hospital with obstetrical capabilities. Imminent delivery is when the baby is crowning during a contraction.
2. A **visual** inspection of the perineal area should only be done when contractions are less than 5 minutes apart and/or there is bleeding or fluid discharge.
3. **DO NOT** place a gloved hand inside the vagina except in the case of breech delivery with entrapped head, or a prolapsed umbilical cord.
4. During delivery, gentle pressure with a flat hand on the baby's head should be applied to prevent an explosive delivery.
5. Pregnant patients > 20 weeks gestation should be taken to a Maternity Department if feasible; < 20 weeks should go to the Emergency Room.

FIRST RESPONDER/BASIC

1. Obtain history of patient condition and pregnancy, including contraction duration and interval, due date, number of pregnancies, number of live children, prenatal care, multiple births and possible complications, and drug use.
2. Determine transport or delivery. Transport unless crowning is present.
3. Always try to transport mother to appropriate hospital designated for delivery.
4. Transport mother on left side with head slightly elevated to relieve pressure on mother's vena cava created by baby. Pressure could cause a decrease in mother's and baby's heart rate.
5. After delivery, keep mother and child warm and monitor airways and signs of shock.

BASIC

6. Obtain one and five minute APGAR scores if time and patient condition permits.
7. Cut the umbilical cord, and then place the baby to suckle at the mother's breast.
8. Call Medical Control for orders and advice as needed.



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 ideal of the weeks of gestation by relating fundal height with anatomical landmarks of the mother.

Changes in fundal height during pregnancy:

Above the symphysis pubis:	12 – 16 weeks gestation
At the level of the umbilicus	20 weeks
Near the xiphoid process	At term



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- **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



Separate run reports must be completed for each patient. The newborn is a separate patient from the mother.

8.0.A - NEWBORN RESUSCITATION

GENERAL CONSIDERATIONS

1. Thermal regulation is an important aspect of the newborn. Body heat must always be maintained. As soon as the baby is born, wipe the baby dry and place in a warm environment. Ways to maintain body heat:
 - A. Cover infant's head with a cap, place infant against mother's skin, and cover both.
 - B. Use car seat with heat packs under and beside infant. Be sure to place towels between heat packs and infant.
 - C. Use indirect, {heated, humidified O₂}.
2. Always position infant in the sniffing position (1" towel under shoulders). This will allow for an adequate open airway and drainage of secretions.
3. Suction infant until all secretions are clear of airway.
 - A. Meconium aspiration is a major cause of death and morbidity among infants. If thick meconium is present and not removed adequately a high percentage (60%) of these infants will aspirate the meconium.
 - B. If meconium is present, suction thoroughly the mouth and nose.
 - C. Mechanical suction may be used on infants but only if the suction pressure does not exceed 100mmHg or 136cmH₂O. Bulb suctioning is preferred.
4. 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.
5. Avoid direct application of cool oxygen to infant's facial area as this may cause respiratory depression due to a strong mammalian dive reflex immediately after birth.
6. Refer to length-based drug treatment guide (e.g. Broselow Pediatric Emergency Tape) when unsure about patient weight, age and/or drug dosage.

FIRST RESPONDER/BASIC

1. {Suction mouth and nose during delivery; continue suctioning with infant's head down until airway is clear and infant is breathing adequately.}
2. After delivery of the infant, assess the airway and breathing while drying and positioning head down. If amniotic fluid not clear, continue to {suction} prior to ventilating and stimulating.
3. If heart rate is <100, BVM ventilation is necessary to increase heart rate.
4. Despite adequate ventilation, if heart rate is < 60 bpm cardiac compressions should be initiated.

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5. BVM ventilation is also indicated for apnea and persistent central cyanosis
6. BVM ventilation rate should be between 30 – 60 breaths per minute. Cardiac compression rate should be at a rate of 120 times per minute (Compression to Breath Ratio 3:1).
7. Transport immediately unless an ALS unit is enroute and has an ETA of less than 5 minutes to the scene.

8.1 - DELIVERY COMPLICATIONS

FIRST RESPONDER/BASIC

1. CONTACT MEDICAL CONTROL AS SOON AS FEASIBLE AFTER ANY COMPLICATION IS DISCOVERED. FIRST RESPONDERS NEED TO CALL FOR EMS TRANSPORT UNIT AS SOON AS POSSIBLE.
2. **Cord around Baby's Neck:**
 - A. As baby's head passes out the vaginal opening, feel for the cord.
 - B. Initially try to slip cord over baby's head.
 - C. If too tight, clamp cord in two places and cut between clamps.
3. **Breech Delivery:**
 - A. May be **Footling Breech**, which is one or both feet delivered first, or **Frank Breech**, which is the buttocks first presentation.
 - B. When the feet or buttocks first become visible, there is usually time to transport patient to nearest facility.
 - C. If upper thighs or the buttock have come out of the vagina, delivery is imminent.
 - D. If the child's body has delivered and the head appears caught in the vagina, EMS must support the child's body and insert two fingers into the vagina along the child's neck until the chin is located. At this point, the two fingers should be placed between the chin and vaginal canal and then advanced past the mouth and nose.
 - E. After achieving this position a passage for air must be created by pushing the vaginal canal away from the child's face. This air passage must be maintained until the child is completely delivered.
4. **Excessive Bleeding Pre-delivery:**
 - A. If bleeding is excessive pre-delivery and delivery is imminent, in addition to normal delivery procedures, EMS should use the hypovolemic shock protocol, **Section 3.4**.
 - B. If delivery is not imminent, patient should be transported on her left side and shock protocol followed, **Section 3.4**.
 - C. In either case, Load and Go to nearby hospital, preferably one with obstetrical capabilities.
5. **Excessive Bleeding Post-delivery:**
 - A. If placenta has been delivered, massage uterus and put baby to mother's breast.
 - B. Follow hypovolemia shock protocol, **Section 3.4**.
6. **Prolapsed Cord:**
 - A. When the umbilical cord passes through the vagina and is exposed, prior to the baby's delivery, the provider should check cord for a pulse.
 - B. The mother should be transported with hips elevated and a moist dressing around cord.
 - C. If umbilical cord is seen or felt in the vagina, insert two fingers to elevate presenting part away from cord, distribute pressure evenly when occiput presents.
 - D. DO NOT attempt to push the cord back.
 - E. Provide {High flow O₂ by NRB mask} to mother and transport IMMEDIATELY!

9.0 - PSYCHIATRIC EMERGENCIES

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FIRST RESPONDER

1. **Patient should be searched for weapons.** Consider having police perform search, but don't assume that their search was adequate.
2. If not already contacted, contact local law enforcement for assistance with violent patients.
3. Obtain relevant history:
 - A. Note any suicidal or violent intent
 - B. Previous psychiatric hospitalization, when and where
 - C. Where does patient receive psychiatric care?
 - D. What drugs does patient take (including alcohol)?
4. **Is patient a danger to self or others?**
5. Calm the patient.
6. Evaluate patient's Vital Signs and general appearance.

BASIC

7. Transport patients to appropriate facility.
8. Contact Medical Control.
9. ALL patients who are not making rational decisions and who are a threat to themselves or others should be transported for medical evaluation.
10. Threat of suicide, overdose of medication, drugs, or alcohol, and/or threats to the health and well being of others are NOT considered rational.



Excessive postpartum bleeding is characterized by more than 500 ml. of blood loss after delivery of the newborn.

9.1 - VIOLENT PATIENTS

1. **“Quick Look” for Determining Patient Incompetency**
 - acutely suicidal patient
 - child under age 18, with urgent need for medical care
 - confused patient
 - developmentally or mentally disabled patient who is injured/ill
 - intoxicated patient who is injured/ill
 - physically/verbally hostile patient
 - unconscious patient

FIRST RESPONDER

2. **Patient should be searched for weapons.** Consider having police perform search, but don't assume that their search was adequate.
3. Consider need for restraint. Call for police.
3. Patients should never be transported while restrained in a prone position with hands and feet behind the back, or sandwiched between backboards and mattresses. Restraint techniques must never constrict the neck or compromise the airway.
4. EMS personnel must have the ability to rapidly remove any restraints if the patient vomits or develops respiratory distress (e.g., there must be a handcuff key in the vehicle during transit).
5. Handcuffs are generally not appropriate medical restraints. If they are used, the handcuff key must accompany the patient during treatment and transportation.
6. Explain need for restraint to patient, and document both the need and the explanation.
7. Any form of restraint must be informed restraint.

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8. Employ “reasonable force.” Reasonable force is the use of force equal to or minimally greater than the amount of force being exerted by the patient.
9. Attempt to rule out the following conditions by the given method:
 - A. CVA must be ruled out by the absence of risk factors and focal neural deficits.
 - B. Ethanol withdrawal must be ruled out by patient history.
 - C. Head injury must be ruled out by physical exam and incident history.

BASIC

11. Hypoglycemia must be ruled out by **{blood glucose measurement}** or by administering **Oral Glucose**
12. Request that police fill out the “Pink Slip.”
13. Preferably transport the patient to the facility where he or she was last hospitalized.
14. Hypotension must be ruled out by determining the presence of SBP > 100.
15. Hypoxia must be ruled out by **{O2 saturation measurement}** or by supplemental **O2**.

Hypercapnia /Hypercarbia (elevated levels of CO₂ caused by inadequate ventilation/respirations) can cause a respiratory failure patient (especially young asthmatics) to be combative **despite normal Pulse Ox readings**. EMS personnel have been successfully sued for failure to recognize medical causes of violent/bizarre behavior, including diabetic problems, head injuries, and other problems. The medical evaluation is a crucial component of this Standing Order.

9.2 - ELDER ABUSE/NEGLECT

FIRST RESPONDER/BASIC

1. Report all alleged or suspected elder abuse or neglect to the appropriate agency. This can be accomplished by completing the Social Services Referral Form provided by GMVEMSC.
2. EMS personnel **must** report any alleged abuse or neglect (including adults) to the appropriate agency, generally to the police, rather than social services, if victim is neither elderly or pediatric. Simply giving your report to hospital staff does not meet your burden under the law.

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10.0 - HOSPITALS' GUIDE FOR PUBLIC SAFETY WORKER (PSW) EXPOSURES

Updated 9-03 (Data subject to change-check periodically to ensure most current)

Step	Childrens	Community	DHH	GSH	GVH/SVH	GMH	KMH/SYC	MMC & MMH	MVH
Wash Area	Y	Y	Y	Y	Y	Y	Y	Y	Y
Notify Supervisor	Y	Y	Y	Y	Y	Y	Y	Y	Y
Report to hospital	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hospital Contact	NICU Charge Nurse	Infection Control	Resource Leader	ED or Infection Control	ED Staff -> EMS Coord.	Infection Control	ED Staff -> Infection Control	Infection Control	Security -> AOC
Complete "Request for Information Form for HCWs"	Y	Y	Y	Y	Y	Y	Y	Y	Y
Type into ED	If desired	Y	If desired	Y	Y	Y	If desired	Y	If desired
Have your lab drawn	If source is high risk (not routine)	If Indicated	If desired	If indicated	Y	Y	If desired	If indicated	If desired
Have source lab drawn (HIV, Hep B, Hep C)	Y	Y (Rapid HIV avail.)	Y (Rapid HIV avail.)	Y	Y (Rapid HIV avail.)	Y	Y	Y	Y (Rapid HIV avail.)
Follow-up: Consult <u>YOUR Fire/EMS/Police</u> Dept policies/procedures as well	Follow dept policy	Infection Control	Infection Control & EMS Liason	Infection Control	EMS Coord. or designee & Follow dept policy	WorkPlus Dept	Infection Control & Follow dept policy	Infection Control	Infection Control or Admin Officer
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		Infection Control	EMS Coord. is to be paged 24/7 by ED or Prehospital care 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

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

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Ohio Hospital Emergency Codes

All hospitals in Ohio, as well as some Nursing Homes and other facilities (including possibly some EMS agencies), are in the process of converting to the Ohio Hospital Association's standardized "Ohio Emergency Codes" for overhead emergency paging. Those codes are listed here for your information.

Not all hospitals will use all Codes. However, if a hospital uses a code, it must be used as written. The intent of the color and names is to standardize codes across our healthcare systems. If a hospital changes the color or name of the code, it defeats the purpose.

The list of Hospital Emergency Codes is not considered to be required information for EMS personnel.

CODE NAME	EVENT
Code Red	Fire
Code Adam	Infant/Child Abduction
Code Black	Bomb/Bomb Threat
Code Gray	Severe Weather
Code Orange	Hazardous Material Spill/Release
Code Blue	Medical Emergency - Adult
Code Pink	Medical Emergency - Pediatric
Code Yellow	Disaster
Code Violet	Violent Patient/Combative
Code Silver	Person with Weapon/ Hostage Situation
Code Brown	Missing Adult Patient

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Dangerous Latex



Crews need to be aware of a relatively new problem in the healthcare field: allergies to latex. This can involve our patients, and our coworkers. Many EMS personnel have latex allergies, and there are numerous patients in this area known to have this problem. Nationally, a number of people have died from allergic reactions to latex.

A few years ago, it was thought that the problem was just an allergy to the powder in latex gloves. Although some people are allergic to the powder, allergies to the latex itself are actually more common.

It's hard to overemphasize the magnitude of this problem. Latex dust, spread through the air when you take off a pair of gloves can trigger severe dyspnea in susceptible people. A BP cuff on a patient's arm, or even the rubber covered diaphragm of one of our stethoscopes, can cause a severe, and painful, skin rash.

And paramedics: our endotracheal tubes are latex. Imagine intubating someone who is allergic. By the time we figure out what's going on (if we do!) and extubate the patient, they can have inflammation extending from their mouth well into their lungs, to the point that it's impossible to ever get an airway again.

These allergies can get worse. The more the person is exposed to latex, the more likely it is that the allergy will become more severe. Therefore, whether we are dealing with our patients, or our own firefighters, EMTs, and paramedics, or with hospital personnel, we need to do all we can to minimize their exposures.

So what do we do? Nationally, many groups are working on it. A Department may want to purchase Latex-free equipment and supplies to use on selected patients. There was an excellent article on the topic in [jems](#), and there will undoubtedly be more.

In the meantime, there are some things you can do. If you, or any member of your agency is allergic to latex, get non-latex gloves. Other members of the company need to be careful, as well. Try to remove gloves without "snapping" them, or doing anything that spreads dust into the air. Take the gloves off away from the allergic person if at all possible. After taking them off, **wash your hands** before touching a person who is allergic, cooking, or doing anything which would bring them into contact with the latex dust.

Every EMS unit and First Responder unit should carry at least a small supply of non-latex gloves, both to be prepared for patients you may encounter, and so you have some for a visiting co-worker. Wipe off the steering wheel before driving if another driver was wearing latex gloves.

When you are told a patient has this problem, use great caution. Ask the family if they have latex free gloves, stethoscopes, and other medical paraphernalia. If they do, use it! Don't intubate these patients. A latex ET tube is guaranteed to make things worse. Try to avoid having wires from ECG leads, Puls-ox cables, etc. resting on the patient, unless you know **for certain** that the wires are not latex-covered.

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Contacting Hospitals



ALS Medic Crews are not the only ones who should contact a hospital while on EMS runs. BLS Ambulances, as well as First Responder Engine or Ladder Crews should, at times, contact hospitals. All personnel should be familiar with the communications devices that their Department supplies to alert the hospitals.

There are basically three reasons for EMS crews to contact hospitals:

1. To notify the hospital of a patient (or a situation), and give them time to prepare.
 - Examples would include a patient in cardiac arrest, calling a “Trauma Alert” for a major trauma patient, any critical or combative patient, warnings about multiple or combative patients, and advising the ER about patients contaminated with hazardous materials, among others.
 - Several hospitals have requested that EMS crews contact them before arrival with every patient. Other hospitals may also make the same request. When the Standing Orders Booklets are published, hospitals desiring contact for all patients will be identified.
 - A. Children’s Medical Center
 - B. Veterans Administration Medical Center
 - C. Dayton Heart Hospital
 - D. Wright Patterson Air Force Base Medical Center
 - E. Kettering Medical Center
2. To ask for advice.
 - As an example, a crew dealing with a patient who has borderline vital signs could ask for advice on whether a certain medication would be appropriate.
3. To request orders.
 - There are numerous treatments in both EMT-B and Paramedic Standing Orders that can be administered only with direct permission from Medical Control. When calling for orders, make sure you do the following:
 - A. State who you are and your certification level, then give a very brief synopsis of the patient’s problem, and **ask to speak with a physician**: “This is Paramedic Simpson with Dayton Fire Department Medic 19. We have a 54-year-old male with severe pulmonary edema. We need to speak with a physician for orders.”
 - B. Paint a clear, concise verbal picture of the patient, so that the physician will understand the need for the order.
 - C. Don’t assume that the orders you want will be obvious. Ask for the order!

There are four primary methods of contacting hospitals.

1. BLS Radios, or other direct EMS to Hospital Radio Contact
2. Cellular or Wireless Telephones
3. Telephones at scenes in homes or businesses.
4. Request Dispatch to pass on a message.

Generally speaking, contact through a Dispatcher is the least effective method of communications with hospitals. Contacting the hospital directly allows a more complete report, permits the hospital to ask questions, helps to ensure accuracy, and reduces the workload on your Dispatchers.

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Physicians on Emergency Scenes



PURPOSE:

This SOP defines how EMS personnel interface with physicians who are present at emergency medical scenes.

DEFINITIONS:

Patient's Personal Physician: A Medical Doctor (MD) or Doctor of Osteopathy (DO) who is the private physician of a patient at an emergency scene.

Intervenor Physician: A physician at an emergency scene other than the physician's office, who is not the Patient's Personal Physician.

Medical Control Physician: An Emergency Medicine Physician who practices in a local Hospital Emergency Rooms, and who provides on-line medical control via radio or telephone to our paramedics and EMTs.

PROCEDURES:

Intervenor Physician at an Emergency Scene

Some physicians may stop at emergency scenes to offer assistance. Their efforts and their interest are to be encouraged, so long as they do not place themselves, the patient, EMS personnel, or other persons at risk. As such, the following procedures will apply:

- 1) **Assure scene safety.** Physicians who are in a location or environment which places them at risk should be asked to leave, especially in view of the fact that they are unlikely to have personal protective equipment, or training in how to use it.
- 2) Provide the physician with a copy of the Physician on Scene Card. You may permit the physician to **assist with care** at the scene or en route to the hospital. Request to see a copy of the physician's medical license. An example of this license is provided in the "Definitions" section of this SOP.
- 3) If the intervenor physician wishes to provide **on-site medical direction**, ***all*** of the following conditions must be met. If so, EMT-Bs and Paramedics will defer to the orders of the physician.
 - The physician must provide evidence of a State of Ohio Medical License.
 - The physician must speak with an on-line Medical Control Physician.
 - The physician must agree to assume full responsibility for the patient and the patient's care, and the **on-line Medical Control Physician must directly advise the crews** that they may take medical direction from the intervenor physician;
 - The physician must accompany the patient to the hospital ***in the Ambulance or Medic Unit***; and
 - The physician must provide guidance for the run documentation, and sign three copies of the runsheet.
- 4) If all of the above stipulations do not apply, the physician may not provide on scene medical direction. Further participation at the scene is at the discretion of the crew.
- 5) Neither EMT-Bs nor Paramedics are to accept orders that are outside of your scope of practice, or beyond your training or capabilities.
- 6) If there is any disagreement, crews will defer to the on-line Medical Control Physician, and request the presence of their supervisor.
- 7) If the physician's actions jeopardize the safety of the patient or any other person, or jeopardize patient care in any way, crews should immediately call for their supervisor and the Police.

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Please note the following exception: If the physician is a local Emergency Room physician who is personally known to the crew, only the stipulations concerning scene safety apply. Otherwise the crews should take direction from the doctor just as they would if they were speaking over the radio or telephone.

Patient in a Physician's Office, or Patient's Personal Physician on Scene

At a physician's office, there is little issue of identification. At other locations, if the patient or family members confirm that the person is the patient's private medical physician, and the physician confirms that there is a pre-existing doctor/patient relationship, the doctor enjoys special privileges by virtue of that relationship. As such, the following procedures will apply:

- 1) EMT-Bs and Paramedics will defer to the orders of the physician. This includes, but is not limited to, the right of that physician to pronounce death.
- 2) Provide the physician with a copy of the Physician on Scene Card.
- 3) Neither EMT-Bs nor Paramedics are to accept orders that are outside of your scope of practice, or beyond your training or capabilities.
- 4) If the physician's actions or orders would, in the opinion of our crews, put the patient at risk, or if the physician gives orders which are beyond our capabilities (see # 3), crews are to immediately contact the Medical Control Physician, and your supervisor. You must handle this situation with great sensitivity. Attempt to have the situation reconciled via peer-to-peer (doctor to doctor) consultation. That is, have the Medical Control Physician speak directly to the private physician, utilizing our communications gear if needed.
- 5) The physician may choose to continue care en route to the hospital. If the physician is willing to do **all** of the following, that physician will continue to be in charge of the patient's care:
 - Assume full responsibility for the patient and the patient's care;
 - Accompany the patient to the hospital *in the Ambulance or Medic Unit*; and
 - Provide guidance for the run documentation, and sign three copies of the runsheet.
- 6) If the physician is not willing to comply with all of the above stipulations, the physician may not accompany the patient to the hospital. Once the physician is no longer in attendance, revert to normal operating procedures and protocols.

Other Medical Personnel on Scene

From time to time, EMS personnel encounter dentists, paramedics, nurses, nurse anesthetists, nurse practitioners, physician's assistants, respiratory therapists, EMTs, and other medical professionals or para-professionals on emergency scenes. Although some of those personnel are legally authorized to write prescriptions, they may **NOT** assume medical control over EMTs and paramedics at scenes.

You may, at your discretion, allow such personnel to assist you at emergency scenes, as, in fact, you may utilize any bystander for appropriate tasks. Some of these personnel have special skills, including intubation and IV placement. However, it is generally not appropriate for us to permit them to perform invasive procedures (such as intubation, starting IVs, or administering medications) unless they are riding with us, or have otherwise been positively identified.

DISCUSSION:

You must handle these situations with great sensitivity. Crews should maintain a supply of the Physician on Scene Cards in each apparatus, and hand them out to any medical professional they encounter at an emergency scene.

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Greater Miami Valley EMS Council Physician on Scene Hand-out

Thank you for your efforts. We appreciate your willingness to assist with an emergency situation.

Paramedics and EMTs are not permitted to accept assistance from other medical professionals unless those persons can be positively identified. Please offer to show them your State Medical License.

Please understand that our Paramedics and Emergency Medical Technicians (EMTs) are trained to National EMS Standards, and are tested and expected to operate according to local operating protocols, also known as "Standing Orders." Paramedics and EMTs are not permitted to perform procedures or offer treatments that exceed their training or scope of practice. If they decline any part of your help, advice, or orders, please understand that they are performing according to their protocols.

You should also realize that many of the situations which EMS deals with are:

- extremely hazardous
- may require use of specialized personal protective equipment
- may require training in hazard recognition and mitigation
- **If our crews ask you to leave the scene, it may be for your personal safety.**

If you believe that the crew's actions are inappropriate, or in error, ask them to put you in contact with their Medical Control Physician, or ask them to contact their supervisor. Either or both will be immediately available.

If you, the physician, wish to provide on-site medical direction, or wish to continue care en route to the hospital, you MUST AGREE TO ALL of the following conditions:

- Provide evidence of a State of Ohio Medical License;
- Speak with the on-line Medical Control Physician;
- Agree to assume full responsibility for the patient and the patient's care, and the **on-line Medical Control Physician must directly advise the crews** that they may take your medical directions;
- Accompany the patient to the hospital ***in the Ambulance or Medic Unit***; and
- Provide guidance for the run documentation, and sign three copies of the runsheet.

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The Hard Part -- Dealing with the Family



When you find a patient who meets the criteria for not initiating CPR, you need to inform the family of the patient's death. The way you do that is as important as it can be uncomfortable. An unthinking comment like, "If only you had called us sooner..." can cause a person to suffer terribly, blaming themselves for that death.

Try to sequester the family or close friends away from the body. Act concerned, professional, caring, and respectful. Unless the group is hostile, try to sit down with them, and become a part of the group. This helps to build mutual rapport. Finding out who is present, and their relationship to the patient, can help you gain control of the room. Try to pick out one of the family who seems to be relatively stable, and address that person. Introduce yourself, and your crew, giving names, position, and department.

After the introductions, briefly give the facts of the situation as you know them. Ask a question or two to establish your understanding. You might, for instance, ask about when they last spoke with the patient, or whether he had expressed any physical complaints. This helps establish your leadership. Expect that different families can have varied reactions, ranging from quiet, to hysterics, to calm weeping.

Once you have some control, gently inform them that the patient has died. You must refer to the patient by name, and you must use the word "dead," or some form of it (such as "died"). Any other terminology, (e.g., "passed on," "expired," "gone to a better world,") allows too much chance for misunderstanding or denial. Allow the family 30 to 60 seconds for a grief response. Even if it seems that they were aware of the death before your arrival, your statements have removed any lingering hope. A minute to recover from that shock is needed.

After a minute, ask a question. This will generally break the pattern of emotions quite sharply, snapping the person back to a rational mindset, so that you can discuss other matters. Something along the lines of "What do you think happened?" can be a good starting point.

That forces them to focus on you. Use the moment to minimize some of the long-term emotional difficulties which can result from the loss of a loved one. Some reassurances, that the patient did not appear to have suffered unduly, that the suffering of a chronic illness had at last ended, that everything feasible was done to care for the patient, chosen carefully, and as appropriate to the circumstance, can greatly ease the pain of the living.

Guilt can be an even worse burden than loss. Not only should you try to avoid creating guilt ("If only you had known how to open her airway..."), you should make strong efforts to alleviate its potential. Certainty is a hard commodity to come by; use that fact to help. When the family members begin their own series of "What if's," point out how unlikely it would have been to have changed the outcome. A few words can be the best emergency care for those family members.

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In some situations, there is no reassurance to be found. When there are major problems involved, with the death, the care, or whatever else, simply evade them for the time. If no other way can be found, equivocate. Problems will be far easier to deal with after a little time has passed.

Offer to call someone to be with them, or to notify someone of what has happened. You do not need to telephone a long list of friends, but placing the first call to a clergyman, or family member, is sometimes the hardest. After you have leave, the presence of another caring person can give comfort to all concerned.

Stand up, express your sorrow to the family, and explain that you need to complete some legal formalities. Call the coroner's office, and the police department. Make any other calls required by your department's standard procedures, such as to medical control, or your supervisor. Then return to the family, and explain what will be happening. Let them know if the body will be removed to the morgue. Suggest that they contact a funeral director and their clergy, who will help them deal with the procedures that follow a death.

Until the release of the body has been approved by the coroner, the immediate vicinity of the body must be treated as a crime scene, and everyone, including the family, kept out. You cannot allow the family to remove anything from the body, or the immediate area. Also, you may not remove any medical devices without the coroner's release, including endotracheal tubes, IVs, etc. Finally, make sure that you document everything you did, including IVs you missed, or other needle sticks. The coroner may need an explanation for that hole in the patient's skin.

If the body is released, cover it with a sheet or blanket. You can then offer to allow them to view the body if they wish. Before they do so, and when you are absolutely certain that no further investigation will be taking place, arrange the body and surroundings to avoid presenting a gruesome scene.

Some organs such as eyes can be donated even several hours post mortem. If you wish, you can consider suggesting this to the family. Many people receive comfort from such an action. If you are interested, contact your local organ procurement officer, who will give you information and suggestions on how best to broach the subject.

Forthrightly answer any questions the family asks, but don't hesitate to refer the questioner to some other authority if needed. Look around the family and friends, making certain that no one is immediately in need of your services or your support. Reemphasize your sorrow for their loss. Explain that you need to return to duty, and leave as gracefully as possible.

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DO NOT RESUSCITATE ORDERS



“DNR” stands for Do Not Resuscitate. For years, many of us have been frustrated because legal issues forced us to perform CPR on patients when they did not want it, and could not benefit from it. The law in Ohio has changed. The law and rules are in effect now. EMS personnel can and will honor DNR orders, within the limits of the law, effective immediately.

Ohio’s program is called, “DNR Comfort Care.” The concept is that terminally ill persons have the right to die with dignity, in comfort, and with their wishes respected. Comfort Care means that a dying person receives care that eases pain and suffering at the end of life, but without resuscitative measures. DNR Comfort Care **does not mean “do not treat.”** The law does not allow or condone mercy killing, assisted suicide, or euthanasia.

There are some terms that may be confusing because of the way that they are used in the law.

In this section of Ohio law, “**emergency medical services (EMS) personnel**” includes EMTs, paramedics, and police officers.

The term “**DNR Comfort Care**” is used three ways:

1. **DNR Comfort Care** is the title of the overall program for limiting care. As such it appears on all of the forms and identifications. A copy of the DNR Comfort Care Order Form is attached to this order. It is not valid unless it has been signed by a physician (MD or DO), a certified nurse practitioner (CRNP), or a clinical nurse specialist (CNS).

2. When referring to the specific type of limited care, the term **DNR Comfort Care** should be thought of as meaning “comfort care **only**.” These are usually (but not always) patients with terminal conditions, or patients who are frail and elderly and not likely to survive CPR.

Giving “**Comfort Care**” means providing **any medical treatment** to diminish pain or discomfort **that is not used to postpone the patient’s death**. You can, and should, provide treatments that will ease pain and suffering, but you may not attempt any resuscitative measures to sustain life.

3. The term “**DNR Comfort Care-Arrest**” means care is limited to comfort care **only after the patient goes into cardiac or respiratory arrest**. At that point, we cannot use any component of “**CPR**” listed in the new law (see below). Comfort Care-Arrest patients may be on DNR orders for a long period of time (12-18 months, or longer).

Many of these patients are less concerned about palliation of pain, and more concerned with the quality of life after stroke or heart attack. These patients can receive standard EMS care for problems other than cardiac or respiratory arrest, such as Lasix for pulmonary edema, epinephrine for anaphylaxis, and D50 for hypoglycemia, as long as they are still breathing. If they are in cardiac or respiratory arrest, they are not to receive any of the components of “**CPR**” listed in the new Ohio law.

Therefore, DNR Comfort Care and DNR Comfort Care-Arrest are exactly the same, except for what triggers them. With DNR Comfort Care, the protocol is in effect as soon as the order is written. You cannot at any time perform intubation, or any of the other components of “**CPR**.”

With DNR Comfort Care-Arrest, the DNR protocol does not apply **until** the patient stops breathing, or has no pulse. You can intubate these patients, provide resuscitative IVs, apply cardiac monitors, and give all normal care, until the

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patient stops breathing, or loses a pulse. After that, you may not start any of the components of “**CPR**,” as listed in the law.

“**Identification**” and “**verification**” may seem to you to be reversed.

Identification, in the law, refers to ways to determine that a patient has a DNR status.

There are several forms of appropriate DNR identification. The State’s DNR Comfort Care Order form, wallet card, or a photocopy are among them. There are other forms of identification, including a bracelet, a necklace, and a hospital-type bracelet (in Dayton area hospitals, it will be pink) approved by the Ohio Department of Health.

Medical bracelets or medallions other than those using the DNR Comfort Care logo and approved by the Department of Health are unacceptable for identification.

Identification of Non-Comfort Care Orders

Acceptance of DNR Orders other than Ohio Comfort Care Orders is at the option of each Department or EMS Agency. Consult your Chief, Medical Director, and Legal Advisor!

Some EMS agencies do accept formal DNR orders that are not on State of Ohio forms, as long as you are comfortable with the identification of the patient.

There are several reasons why this may be beneficial to your patients:

1. There are still physicians who are unfamiliar with the Comfort Care Law, and who are writing older style DNR orders.
2. A terminal patient from another state may be visiting Ohio. Obviously, a person coming from out of the state to visit their relatives for one last time, is going to have a DNR Order from their home state, and would want it to be honored.
3. As a result of a quirk in the law, DNR Comfort Care does not apply to children. As such, any DNR Orders for pediatric patients will be a format other than the Comfort Care style.

On the other hand, the Ohio Comfort Care law specifically exempts you from civil liability if you follow Comfort Care DNR Orders. DNR Orders which do not follow the Comfort Care formats do not give you that protection. That does not mean you will be sued if you accept them, and you can also be sued for failing to accept them. It simply removes the “Good Samaritan” protection of the Comfort Care law.

If your agency accepts other format DNR Orders, you should follow these guidelines:

- The order must be typed or printed, and signed by a physician (MD or DO), a certified nurse practitioner (CRNP), or a clinical nurse specialist (CNS).
- This does not apply to Living Wills. See the discussion on Living Wills, in the section below, titled “What Can’t We Do.”
- If the patient is a child, the parent or guardian should be present, and agree to withhold resuscitation.

Verification means confirming that your patient is the same person specified in the DNR order.

We must use “reasonable steps” to verify who the person is. Provided we do, we are not liable for civil damages (i.e., lawsuit) for withholding or withdrawing

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CPR, provided we are following Ohio's protocol. However, failure to comply with a DNR order removes the law's protection.

Reasonable steps for verification include:

1. Verification by family, friend, or caregiver;
2. Known by EMS or physician;
3. Wearing a healthcare facility ID band;
4. Driver's license, passport, or other ID with both name and photograph.

If you are unable to verify the patient's identity, you should still follow the DNR protocol.

Finally, in the context of this law, "**CPR**" has a very different meaning from the way we usually think of it. "**CPR**" is defined as **any one or more** of the following:

1. Chest compressions
2. Artificial airways (oral airways, nasal airways, or endotracheal tubes)
3. Resuscitative drugs
4. Defibrillation or cardioversion
5. Respiratory assistance
6. A resuscitative IV line
7. **Cardiac monitoring**

Now that we know the terminology, what do we do?

When we find a person with an emergency situation, we are **not** required to search for DNR identification. We simply perform our normal procedures. Unless we have reason to believe that a DNR may be present, we can and will perform CPR, and provide all other appropriate treatments.

However, once we become aware of a DNR identification, we must verify that our patient is, in fact, the person named on the DNR. See **identification** and **verification** in the section on terminology.

Article I.

Article II. Once we know of a DNR identification, and have verified the patient's identity, we need to know whether they are DNR Comfort Care, or DNR Comfort Care-Arrest. We are **required** to comply with DNR orders, whether they are in writing, or by verbal order from a physician. If you receive a verbal order from a physician, whether in person or by phone, you must take "reasonable steps" to verify the identity of the physician. Regardless of how we get that information, we will withhold "**CPR**" from that patient, as appropriate for his or her DNR protocol. Remember that "**CPR**" in this context means any of the seven items listed in the definition above, not just ventilations and compressions.

Article III.

If we become aware of the patient's DNR status after we have begun "**CPR**," we must cease immediately. Unlike other situations, it is not necessary for EMS personnel to obtain a physician's order to halt CPR if DNR identification is found.

Article IV.

Article V. Comfort Care and Comfort Care-Arrest are essentially two "trigger points" for the DNR protocol. If a patient's status is **DNR Comfort Care**, the protocol is in effect at any time. If their status is DNR Comfort Care—Arrest, it only becomes effective if the patient goes into cardiac or respiratory arrest.

If the patient has no respirations at the scene, contact the Coroner's Office. Advise them of the DNR. They will almost certainly release the body to the family in very short order. Explain the situation to the family, and return to service.

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If the patient is near death, but is still breathing, you may transport or not, according to their wishes. If they have a DNR order and are unable to respond but the family is asking that they be removed to a hospital, let the family know that no resuscitative care will be provided at the hospital. If they still request transport, you may do so. According to legal counsel, in such a situation, assuming that there is no emergency, we are not required to remove the patient under the doctrine of implied consent, as we normally do with unresponsive patients.

If the patient arrests while you are en route to a hospital, simply continue transport to the most appropriate healthcare facility, but without further “**CPR**” (by the law’s definition). That may seem difficult to do, but please remember that you are following the patient’s wishes.

What is the most appropriate facility? Generally, that will be the hospital. However, if you removed the patient from a nursing home, you may return that patient to the nursing home. Doing so avoids the necessity of creating a hospital bill for the family. Please use discretion: try not to give the appearance to bystanders that you are taking a dead body into a nursing home. And notify the facility (hospital or nursing home) by cellular phone.

What can’t we do?

If the patient’s status is DNR Comfort Care-**Arrest**, we cannot perform any resuscitation **once the patient arrests**. That includes all of the components of “**CPR**” listed above.

If the patient’s status is DNR **Comfort Care**, then we are **even more limited**. We cannot use any of the components of “**CPR**” listed above at any time. That means we can’t even place the patient on a cardiac monitor.

We cannot perform CPR even if families or bystanders demand it. The PATIENT has the final right to determine DNR status. Provide comfort and supportive measures, and try to aid the family in understanding the dying process and the patient’s choice.

There is one exception: if the person demanding CPR holds Durable Power of Attorney (DPA) for Healthcare (DPA-HC), they may be able to request CPR for the patient. To determine if that is valid you must do two things. First, make sure that the person holds Durable Power of Attorney **for Healthcare**, not simply a monetary DPA. If so, then look at the DNR Comfort Care form (see the attachments to this General Order). The bottom half of the form has two checkboxes for “Certification of DNR Comfort Care Status (to be completed by the physician).” If the first box (“Do Not Resuscitate Order”) is checked, the person holding DPA-HC may give you valid orders contrary to the DNR Comfort Care protocol. If the second box (“Living Will and Qualifying Condition”) is checked, the DNR Comfort Care protocol applies, regardless of the wishes of the DPA-HC.

You should also know that Living Wills (referred to as “declarations” in the law) generally **do not apply** to EMS. A Living Will only takes effect after two physicians certify that a patient is terminal, or in a permanently unconscious state. Therefore, the only way that a Living Will applies to prehospital personnel is when it is the basis of a DNR Comfort Care Order (as discussed in the preceding paragraph). For EMS personnel to honor a **Living Will**, it must be accompanied by a DNR order, which has been signed by a physician.

We cannot conceal, cancel, deface, or obliterate the DNR identification of another person without their consent. We cannot forge or falsify a DNR order, or a revocation of a DNR. Doing so is a crime.

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What can we do?

Clearing a person's airway, such as by suctioning, for any purpose other than as part of CPR is permissible. We can administer oxygen, place the patient in a position of comfort, and provide pain management. We can control bleeding, splint suspected fractures, and provide emotional support. We can contact the physician, hospice, or home health care. We can call Medical Control and a supervisor for advice and assistance.

If at any time, the patient **revokes** Comfort Care, we can do **anything** within normal EMS procedures to help him or her. Any person who has a DNR may change their mind at any time, and request medical care including CPR. Regardless of age or competence, that is the choice of the patient. Patients can revoke it verbally, or in writing. Even saying, "Help me," may be enough to require us to use all of our normal resuscitative procedures. If the patient requests help, we will provide it to the best of our ability. Article VI.

Healthcare facilities that are transferring a patient are **required** to notify us of the existence of a DNR order. For example, if we remove a patient from a nursing home, the nursing home should provide DNR information before we leave. By the same token, we are required to notify the emergency room staff, once we arrive.

How do we document this?

Record the patient's name, gender, age and attending physicians in the appropriate fields. Note "DNR Comfort Care," and the type of Comfort Care on the runsheet.

In your narrative, explain when the DNR order was found. Describe what steps you took to verify the identity of the patient. If a verbal order is obtained from a physician at the scene, the EMS personnel must verify the physician's identity and document verification. Document your assessment, and what care you provided.

If EMS personnel witness a patient revoke the DNR, document that. If the patient revokes the DNR, you must communicate that to the receiving hospital.

If you have questions or concerns about this law when you are on the scene, contact the Medical Control Physician, and your supervisor.

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MEDICAL ABBREVIATIONS

Following are approved and recommended abbreviations for use in writing EMS Run Reports.

N.B.: Computers may not be able to produce some of these abbreviations exactly. For example, “c”, rather than “c”, may be used as an abbreviation for “with”.

a	— before	failure
aa	— of each	CID — cervical immobilization device
A&Ox3	— alert and oriented to time, place, and person	c/o — complains of
A&Ox4	— alert and oriented to time, place, person, and event (accident, fall, or whatever)	COPD — Chronic Obstructive Pulmonary Disease
AAA	— abdominal aortic aneurysm	CO2 — carbon dioxide
AB	— abortion	CP — Chest Pain or Cerebral Palsy
abd.	— abdomen or abdominal	CPR — cardiopulmonary resuscitation
AER	— aerosol (i.e., nebulizer)	CSF — cerebrospinal fluid
AIDS	— Acquired Immune Deficiency Syndrome	CVA — cerebrovascular accident
AKA	— above the knee amputation	cx. — complication(s)
APE	— acute pulmonary edema	— down or decreased(ing)
approx. or ~	— approximately	D50 — 50% Dextrose
≈	— approx. equal to	DC — District Chief
ASTI	— acute soft tissue injury	DM — diabetes mellitus
BB	— backboard	DO — Doctor of Osteopathy
bid	— (med) twice a day	Dx. — diagnosis or disease
BKA	— below the knee amputation	ECG — electrocardiogram
BVM	— bag-valve-mask	EDC — due date
↑ BP or HTN	— hypertension	EDD — Esophageal Intubation Detection Device
c	— with	EDP — Emergency Department Physician
Ca	— cancer	EMT — Emergency Medical Technician
CABG	— coronary artery bypass graft	= — Equal (to)
cap.	— capsule	equip. — equipment
Capt.	— Captain	epi — epinephrine
cc.	— cubic centimeter <i>No longer used, per JCAHO. Use ml.</i>	esp. — especially
CC	— chief complaint or cervical collar	ET — endotracheal
CF	— cystic fibrosis	EtCO2 — End Tidal Carbon Dioxide Detector
CHF	— congestive heart	EtOH — alcohol

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ETT	— endotracheal tube	NaHCO ₃	— sodium bicarbonate
FMP	— family physician	NC	— nasal cannula
fx.	— fracture	NIDDM	— non-insulin dependent diabetes mellitus
Gravida	— number of pregnancies	no. or #	— number
>	— greater than or more than	NS	— Normal Saline
GSW	— gunshot wound	NSR	— normal sinus rhythm
GYN	— gynecology or gynecological	NTG	— nitroglycerin
HA	— headache	OB	— obstetrics or obstetrical
HIV	— Human Immunodeficiency Virus	O ₂	— oxygen
hr.	— hour	O ₂ Sat.	— oxygen saturation
hs	— (med) hour of sleep <i>No longer used</i>	OPT	— ophthalmically
Hx	— history	p	— after
IDDM	— insulin dependent diabetes mellitus	PAC	— premature atrial contraction(s)
IM	— intramuscular	Para	— number of live births
IO	— intraosseous	PE	— physical examination
IV	— intravenous	PEA	— pulseless electromechanical activity
IVD	— intravenous drip	PJC	— premature junctional contraction(s)
IVP	— intravenous push	PM	— Paramedic
JVD	— jugular venous distension	po	— by mouth
lac.	— laceration	POS	— physician on scene
<	— less than	postop.	— postoperative
lpm or l/m	— liters per minute	pr	— by rectum
LPN	— Licensed Practical Nurse	prn	— as needed
Lt.	— Lieutenant	Pt.	— patient
LUQ	— left upper quadrant of abdomen (RUQ, LUQ, RLQ)	PTCA	— angioplasty
mcg	— micrograms	PVC	— premature ventricular contraction(s)
MCP	— Medical Control Physician	PVD	— peripheral venous distension
MD	— Medical Doctor or Medical Director	q	— every
med	— medication	qd	— every day <i>No longer used, per JCAHO</i>
meds	— medications	q4h	— every four hours
mg.	— milligrams	qid	— four times a day
MI	— myocardial infarction	qod	— every other day <i>No longer used, per JCAHO</i>
min.	— minute	RAD	— reactive airway disease (asthma)
ml.	— milliliters	RN	— Registered Nurse
MS&P	— motor, sensation, and pulse	ROM	— Range of Motion or Rupture of Membranes
MVA	— motor vehicle accident		
MVC	— motor vehicle crash		
N&V	— nausea and vomiting		

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Rx. — treatment
s — without
S & S — signs and symptoms
SC or SQ — ~~subcutaneous~~ *No longer used, per JCAHO*
Sub-Q — subcutaneous
SL — saline lock
SO — Standing Orders
SOB — shortness of breath
SPM — Senior Paramedic
sts. — states
SVT — supraventricular tachycardia
SW — shotgun wound
or stab wound
sxs. — symptoms
tab. — a tablet
TB — tuberculosis
TIA — transient ischemic attack
tid — three times a day
TOP — topically
TRN — transdermally
Tx. — transport
↑ — up or increased (increasing)
VF — ventricular fibrillation
VS — vital signs
VT — ventricular tachycardia
WNL — within normal limits
yo — years old

**Greater Miami Valley
EMS Council**

and

Ohio EMS Region 2

**First Responder / Basic EMT
Standing Orders
Training Manual**

Pediatric

**Pre-hospital Protocols
2004**

for First Responders / EMT-Basics

For Use in Patients under Age 16

Version 12/16/03

Effective: 4 February 2004

PROCEDURE MANUAL
GMVEMSC Pediatric Protocol - 1ST RESPONDER & EMT-B

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ADDITIONAL PEDIATRIC INFORMATION

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1.0 - STIPULATIONS

1. 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 Ohio EMS Region 2, and certified by the State of Ohio as a:
 - First Responder
 - EMT-Basic
2. 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 transported to their facility.
3. **This protocol applies only to patients under age 16.**
4. 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.
5. 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 Advisor for the local department or agency. **Items marked “as available,” or that are enclosed in braces ({}), are at the option of the Department, and its Medical Director.**
6. Secondary intubation confirmation devices (EtCO₂ Detectors or Monitors, or Esophageal Detection Devices) are less available for pediatric patients than for adults. Nonetheless, it is **strongly** recommended that EMS personnel at all levels use all appropriate confirmation methods available when intubating children. Those confirmation methods include EtCO₂ Detectors or Monitors, and/or Esophageal Detection Devices that are appropriate for the age and weight of the patient.
7. First Responders, by design, respond with minimal equipment and supplies. In this protocol, their use of **any** equipment, including such items as {oxygen}, {AEDs}, or {splints} shall be on an as available basis.
8. EMT-Basic protocols are a continuation of the First Responder protocol; EMT-Bs are expected to perform all of the First Responder protocol as well as the EMT-B protocol.
9. Bring the patient's medications, or a list of the medications, with the patient to the hospital. When supplying hospitals with documentation of patient meds, be certain to include the proper dose, and the frequency of administration



Identify yourself and Level of Certification as well as the person receiving the message at the medical facility.

2.0 - INITIAL CARE

FIRST RESPONDER

1. Institute Basic Life Support as indicated:
 - Establish unresponsiveness.
 - Stabilize neck and immobilize if history of trauma.
 - Open airway and assess breathing.
2. If not breathing, institute artificial ventilation {using mouth-to-mask, bag mask, and adjuncts such as oropharyngeal and nasopharyngeal airways}.
3. Administer {**Oxygen (O₂)**}.

BASIC

4. {When indicated, endotracheal intubation should be performed. EMT-Bs may only intubate using the

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oral route, only in unconscious patients in respiratory *and* cardiac arrest, and only if their Department and Medical Director specifically approve them to do so.}

5. Check pulse. If absent, CPR continuously until {AED} arrives.
6. Utilize monitors {Pulse Oximeter, etc.} and appropriate.

2.1 - PATIENT ASSESSMENT

1. Airway (Assess, establish, and maintain as needed)
2. Breathing
3. Circulation (Skin – capillary refill, warm, cool, dry, or moist, peripheral pulses)
4. Present Complaint
5. Vital Signs
6. Signs & Symptoms (90 second survey)
7. Allergies
8. Medications-Current
9. Past Medical History
10. Last oral intake
11. Events leading up to illness/injury
12. Approximate Age/Weight.

2.2 - AIRWAY MAINTENANCE

FIRST RESPONDER

1. Administer **{O₂}** to all patients with respiratory distress, or whenever your impression indicates that it is appropriate. Use the following rates as guidelines:
 - A. Four to six (4-6) liters per minute by nasal cannula
 - B. 100% by a non-rebreather mask (12-15 liters per minute) for severe trauma patients, very distressed patients, and other patients who appear to need high flow **O₂**.
2. Ventilate patients who are symptomatic with an insufficient respiratory rate or depth. When using BVM ventilation, cricoid pressure should be applied to occlude the esophagus and prevent gastric distention

BASIC

3. If patient becomes apneic, and is in cardiac arrest {intubate}. {AGE/HEIGHT appropriate Dual Lumen Airways (e.g., {Combitube}, {Pharyngotracheal Lumen Airway (PtL)} or a {Laryngeal Mask Airway (LMA)} are acceptable rescue airway devices for properly trained and tested EMT-Bs with the approval of their Medical Director, and may be used after two failed attempts to intubate.}
4. If endotracheal intubation is **NOT** an approved procedure by your department or Medical Advisor, but the EMT-B is permitted to use the {Dual Lumen Airways}, has been properly trained and tested, then they may use these devices to secure the airway on a apneic and pulseless patient
5. EMS personnel are required to use both a **Primary and at least one appropriate {Secondary} Method of tube placement confirmation** (as defined below) on every intubation. These include:
 - Primary Methods:
 - ❖ Physical Assessment including auscultation of the anterior chest, midaxillary areas, and then epigastrium again.
 - ❖ Repeat visualization of the tube between the cords
 - ❖ Condensation in the tube
 - ❖ {Pulse Oximeter}

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- Secondary Methods:
 - **{End Tidal Carbon Dioxide Detector}** (colorimetric EtCO₂ is limited to patients with pulses)
 - Pedi-Cap Detectors may be used in patients weighing 1 – 15 Kg.
 - Easy-Cap II Detectors may be used in patients weighing > 15 Kg.
 - **{Esophageal Detection Device (EDD)}** **is limited to patients over the age of 5 years who weigh > 20 Kg** (may be used with any intubation, although EtCO₂ is preferable for patients who are still breathing)
- H. Always secure the ET tube in place as effectively as possible, preferably with a {commercial Tube-securing device}
- I. Re-assess tube placement EVERY TIME THE PATIENT IS MOVED.
- 3. If basic procedures are unsuccessful, try to visualize obstruction with laryngoscope. If foreign body is seen, attempt to remove it.



End Tidal CO₂ Detector (EtCO₂): an inline detector for intubated patients that senses the presence of carbon dioxide (CO₂) in expired air. If CO₂ is detected, correct tube placement is confirmed. If no CO₂ is detected, placement is suspect. One disposable EtCO₂ Detector is the “Nelcor Easy Cap.”

The Easy Cap can be used continuously after the patient is intubated.

Limitations:

1. The patient must have adequate perfusion. If CO₂ is not transported to the lungs, the device will not register CO₂. It can then appear that the tube is in the esophagus, when, in fact, it is correctly placed. Therefore, Easy Cap EtCO₂ Detectors are **not recommended** for patients in cardiac arrest
2. Secretions, emesis, etc. can ruin the device.
3. A patient with large amounts of carbonated beverage (e.g., beer) in his stomach can give a false positive. The device may sense the CO₂ given off by that beverage and indicate that the tube is in the trachea, when it is in the esophagus.
4. Use the device for no more than two hours.
5. Do not use the device on children weighing less than 45 kg, due to the dead space within the detectors.

Cervical spine immobilization is recommended to help avoid tube dislodgement.



To prevent tube dislodgement, Secure the tube in place as effectively as possible and prevent patient's head from moving. Cervical immobilization is effective in maintaining patient's head in a neutral position

Esophageal Detector Device (EDD): a device to confirm tube placement mechanically.

It is based on the principle that the esophagus is a collapsible tube, while the trachea, on the other hand, is rigid.

An EDD looks something like a bulb syringe. Collapse the bulb, and place the device on the end of the ETT. 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. That prevents air movement up the tube and into the bulb. So 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, which is rigid, there is nothing to occlude the movement of air into the tube. The bulb will rapidly refill, indicating that the ETT is properly placed.

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Limitations:

1. A large amount of gastric air can give a false positive finding (tube seems to be in the trachea, but is not).
2. 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.)
3. EDD cannot be used continuously. It must be removed after confirmation, though you may reuse it after patient movement.



Indications for Various Devices

	Oral ETT	Pulseless Pt.	Apneic Patient
<u>Colorimetric EtCO₂</u>	<u>Useful</u>	<u>Contraindicated</u>	<u>Useful</u>
<u>EDD</u>	<u>Useful</u>	<u>Useful</u>	<u>Useful</u>

3.0 - CARDIOVASCULAR EMERGENCIES

3.1 - CARDIAC ARREST

GENERAL CONSIDERATIONS

1. Cardiac arrest in children is primarily due to lack of adequate airway, resulting in hypoxia.
2. When using BVM ventilation, cricoid pressure **should** be applied to occlude the esophagus and prevent gastric distention.
3. CPR should not be interrupted for more than 30 seconds until spontaneous pulse is established.

3.1.1 - CARDIAC ARREST: PULSELESS APNEIC PATIENT ({AED} PROTOCOL)

GENERAL CONSIDERATIONS

1. Apply AED if patient is 8 years or older or greater than 25Kg/55lb. *AED's* with pediatric capability may be used on children 1 year of age or greater with appropriate training, equipment, and pads, and approval of Department Medical Director.
2. First Responders: call for help immediately.
3. EMT-Bs: transport as soon as practical, unless ALS will be available within 5 minutes.

FIRST RESPONDER

1. Evaluate ABCs.
2. Provide ventilations during CPR with a {Bag-Valve-Mask (BVM)} with 100% {O₂} or Positive Pressure Ventilation (PPV) with 100% {O₂}.
3. If witnessed arrest, and no AED available, administer one (1) Precordial Thump.
4. CPR continuously until {AED} is attached and then proceed with {AED} protocol.
5. Press to analyze. If no shock advised, continue CPR.
6. If shock advised, provide set of three stacked shocks.
7. CPR continuously for one minute, if no pulse, then press to analyze. If shock advised, repeat set of three (3) stacked shocks.
8. If no shock advised by {AED} at any point, transport as soon as possible
9. CPR continuously.

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BASIC

10. {**Intubate** patient if authorized by your Department and Medical Director.}
11. Approximately every five minutes stop vehicle and re-analyze patient as long as shock advised. Never shock or analyze in a moving vehicle



Apply AED if patient is 8 years or older or greater than 25Kg/55lb. **AED's** with pediatric capability may be used on children 1 year of age or greater with appropriate training, equipment, and pads.

(Use length-based drug treatment guide, e.g. Broselow Pediatric Emergency Tape when unsure about patient weight, age).

AED Usage: If your AED has recording capabilities, start verbal documentation at the time you attach AED to patient. On monophasic AEDs, the manufacturer's recommended energy settings for the first three stacked shocks is 200 J., 200 - 300 J. , 360 J., with all subsequent shocks @ 360 J.. Departments who have purchased one of the new biphasic AEDs will have equivalent energy settings.



Costs/Benefits of Stopping to Analyze on Long Transports: As stated in section 3.1.6 A of this protocol, when faced with a patient in cardiac arrest and no advanced life support capabilities at the scene, time to the receiving medical facility is critical. Stopping to analyze on long transports will increase that time. A good rule of thumb: If AED is recommending you shock, stop for analysis; if no shock is advised, make less stops for analysis.

3.1.5- NON-INITIATION OF CPR

1. **No** resuscitation will be attempted in cardiac arrest patients with the following:
 - A. Burned beyond recognition
 - B. Decapitation
 - C. Deep, penetrating, cranial injuries or massive truncal wounds
 - D. DNR Order - present and valid
 - E. Frozen body (so severe that chest compression is impossible, or the nose and mouth are blocked with ice)
 - F. Hemitorporectomy (body cut in half)
 - G. Rigor mortis, tissue decomposition, or severe dependent post-mortem lividity (any one or more)
 - H. Scene Safety - Situations where the danger to rescuers is excessive
 - I. Triage
2. If CPR has been started on a patient with any condition listed in # 1 of this Section, EMS may discontinue the resuscitation efforts.
3. EMS will **not** initiate resuscitation on victims of **blunt trauma** who are **found in cardiac arrest upon EMS arrival**, or who **arrest before** being placed in the EMS vehicle, unless one or more of the following conditions are present:
 - A. Patient can be **delivered** to an Emergency Department within **5 minutes of the time patient is found to be in arrest; or**
 - B. You suspect that the arrest may have been caused by a medical condition (e.g., AMI) or a focused blunt trauma to the chest (e.g., baseball to the chest).
 - If you suspect that the arrest resulted from medical conditions or focused trauma, follow all normal cardiac arrest procedures.

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4. EMS will **not** initiate resuscitation on victims of **penetrating trauma** who are in cardiac arrest upon EMS arrival, **unless** the patient can be delivered to an Emergency Department within **15 minutes**.
 - A. Resuscitation **will** be attempted on victims of penetrating trauma who arrest after they are in EMS care.
5. Once enroute, continue care even if the above time limits cannot be met.



Risks and Benefits of Departments accepting DNR Orders that are not on Comfort Care forms:

Some EMS agencies do accept formal DNR orders that are not on State of Ohio forms, as long as you are comfortable with the identification of the patient. There are several reasons why this may be beneficial to your patients:

- There are still physicians who are unfamiliar with the Comfort Care Law, and who are writing older style DNR orders.
- A terminal patient from another state may be visiting Ohio. Obviously, a person coming from out of the state to visit their relatives for one last time, is going to have a DNR Order from their home state, and would want it to be honored.
- As a result of a quirk in the law, DNR Comfort Care does not apply to children. As such, any DNR Orders for pediatric patients will be a format other than the Comfort Care style.

See Appendix for more complete information on Ohio DNR.



There are several exceptions listed to the criteria for non-initiation of CPR. A patient in V Fib or V Tach is one of the exceptions. When you find a pediatric patient with possible blunt trauma in cardiac arrest at the accident scene, how do you know if s/he is in arrest from blunt trauma due to the accident or if s/he has a congenital heart problem which could have caused him or her to go into arrest. If the patient, who would otherwise meet the criteria for non-initiation of CPR is found to be in V Fib or V Tach, give the patient three shocks. If you convert the rhythm, you will work the patient. If you cannot capture a pulse, the patient will be considered dead and the Coroner notified.

3.1.5.A – DNR COMFORT CARE SYNOPSIS

This section intentionally left blank. Ohio Comfort Care Law does not apply to pediatric patients

3.1.6. - FIELD TERMINATION OF RESUSCITATION EFFORTS

3.1.6.A - FIELD TERMINATION OF RESUSCITATION EFFORTS WITH NO AVAILABLE ADVANCED LIFE SUPPORT (ALS)

These sections intentionally left blank

3.2 - SUSPECTED CARDIAC CHEST PAIN

This section intentionally left blank

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3.3 - ARRHYTHMIAS

FIRST RESPONDER

1. Open and maintain the airway. Administer {O₂}. Increase rate as needed for respiratory distress.

BASIC

2. Establish communications with Medical Control and advise of patient condition. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.

3.3.1 - BRADYCARDIAS

Definition: Pulse < 60 and patient is symptomatic (dizzy, short of breath, hypotensive).

FIRST RESPONDER

1. Open and maintain airway.
2. Administer {O₂}. Increase rate as needed for respiratory distress.
3. If signs of poor perfusion and a heart rate less than 60 bpm in children less than age 8, initiate CPR.

BASIC

4. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.



Poor Perfusion: Early shock is more difficult to diagnose in a child than an adult. Persistent bradycardia and delayed capillary refill are the most reliable indicator of shock in a child. A weak slow pulse with a rate less than 60 is usually a sign of shock in all children. Decreased tissue perfusion may be manifested by prolonged capillary refill and cool extremities. The child's level of consciousness is also a useful indicator of circulatory status, yet note that circulation can be poor even though the child appears awake. If the child is able to focus on the parent, or is consolable by the parent or member of the EMS team, there is enough circulation to allow the child's brain to be working.

3.3.2 - TACHYCARDIA

Definition: HR>220 in infants or >180 in children under age 8

GENERAL CONSIDERATIONS

1. Unstable tachycardias result in hemodynamic instability, and are evidenced by loss of consciousness, CHF, and diminished peripheral pulses, increased respiratory effort, or hypotension.
2. Children with stable tachycardias are alert with good blood pressure and palpable distal pulses, and with good perfusion.

FIRST RESPONDER

1. Open and maintain the airway.
2. Administer {O₂}. Increase respiratory rate as needed for respiratory distress.

BASIC

2. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.

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Poor Perfusion: Early shock is more difficult to diagnose in a child than an adult. Persistent tachycardia and delayed capillary refill are the most reliable indicators of shock in a child. A weak rapid pulse with a rate over 130 is usually a sign of shock in all children except neonates. Decreased tissue perfusion may be manifested by prolonged capillary refill and cool extremities. The child's level of consciousness is also a useful indicator of circulatory status, yet note that circulation can be poor even though the child appears awake. If the child is able to focus on the parent, or is consolable by the parent or member of the EMS team, there is enough circulation to allow the child's brain to be working.

3.4 - SHOCK

FIRST RESPONDER

1. Open and maintain airway.
2. Administer 100% {O₂} with NRB, regardless of {pulse ox reading}.
3. Hypothermia is a significant, and frequent, problem in Shock or Major Trauma patients. Do all that you can to maintain patients' body temperature.

BASIC

3. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.

3.4.1 - NON-TRAUMATIC SHOCK WITHOUT PULMONARY EDEMA

This section intentionally left blank.

3.4.2 – NON-TRAUMATIC SHOCK WITH PULMONARY EDEMA

This section intentionally left blank.

3.4.3 – EXSANGUINATING HEMORRHAGE

FIRST RESPONDER

1. Establish and control airway
2. Control Bleeding.
3. Place patient on {100% O₂} with NRB regardless of {pulse ox readings}.
4. Control Bleeding.

BASIC

3. Transport IMMEDIATELY unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene



Exsanguination is the loss of blood to the point at which life can no longer be sustained. A child's blood volume is about 80 – 90 ml/kg. Pay closer attention to blood loss in a child than you do an adult. What appears to be a relatively small amount of bleed loss may be life threatening.

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Article I. Age Appropriate Ranges for Vital Signs

AGE	WEIGHT (KG)	RESPIRATIONS	PULSE	Section 1.01 SYS TOLIC BP
Newborn	3 – 4	30 – 50	120 – 160	>60
6 mo - 1 yr	8 – 10	30 – 40	120 – 140	70 – 80
2 – 4 yr	12 – 16	20 – 30	100 – 110	80 – 95
5 – 8 yr	18 – 26	14 – 20	90 – 100	90 – 100
8 – 12 yr	26 – 50	12 – 20	80 – 100	100 – 110
>12 yr.	>50	12 - 16	80 - 100	100 - 120

3.5 - STROKE

This section intentionally left blank.

4.0 - TRAUMA EMERGENCIES

4.0.1 – GENERAL CONSIDERATIONS

1. **Minor Trauma** patients may be transported to non-trauma Centers. Vital Signs should be recorded, all necessary splinting and bandaging completed as needed.
2. Administer oxygen at 10-15 liters/minute by NRB mask to all significant trauma patients.
3. **Major Trauma** patients are to be transported as soon as possible to the nearest appropriate facility, per destination protocols.
 - A. 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.
 - B. Limit on-scene time to 10 minutes or less whenever feasible.
 - C. The Glasgow Coma Scale can be completed in seconds, and the component scores relayed to Medical Control. Communicate and document components, rather than overall score.
 - D. Hypothermia is a significant, and frequent, problem in shock or Major Trauma patients. Do all you that you can to maintain patients’ body temperature.
 - E. Contact receiving hospital and provide Medical Control with **MIVT and ETA:**
 - Mechanism of Injury
 - Injuries
 - Vitals
 - Treatment
4. The **ONLY** procedures that should take precedence to transport are:
 - A. **Extrication**
 - B. **Airway Management**
 - C. **Stabilization of neck, back, femur and pelvic fractures on a backboard**
 - D. **Exsanguinating hemorrhage control**

 **Mnemonic: EASE.**

4.0.2 TRIAGE & TRANSPORT GUIDELINES

4.0.2.1 - CONCEPTS

1. After the trauma patient’s extrication, the on-scene time should be limited to **TEN MINUTES** or less, except when there are extenuating circumstances.

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2. Trauma Patients, as identified in this document, should be transported to “THE NEAREST APPROPRIATE TRAUMA CENTER”.
3. 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.
4. **PRE-ARRIVAL NOTIFICATION OF THE RECEIVING FACILITY IS ESSENTIAL! Give Mechanism of Injury, Injuries, Vital Signs, Treatment (MIVT) and ETA.**
5. List in the EMS Run Report which of the State Trauma Triage Criteria were met by the patient.

4.0.2.2. - TRAUMA CENTER/FACILITY CAPABILITIES

1. Level I and II Trauma Centers can care for the same trauma patients.
 - A. Level III Trauma Centers offer services, based on individual hospital resources that provide for initial assessment, resuscitation, stabilization, and treatment for the trauma patient.
 - B. 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.
 - C. In areas where the trauma patient is in close proximity to a Level III trauma center and a Level I or 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 and treatment at the proximate Level III trauma center or from direct transport by EMS Provider to the Level I or II trauma center.
 - D. Regional Adult Trauma Centers
 - Level I – Miami Valley Hospital
 - Level II – Good Samaritan Hospital
 - Level III – Greene Memorial Hospital
 - E. Regional Pediatric Trauma Centers
 - Pediatric: Children’s Medical Center
 - Adult and Pediatric: Miami Valley Hospital
3. 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 critically injured trauma patients. EMS provider may arrange for air medical transport from the scene.
4. 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 nearest acute care hospital for stabilization and transfer. EMS provider may arrange for air medical transport from the scene.
5. **All pregnant trauma patients should be transported to the NEAREST ADULT Trauma Center, unless transport time > 30 minutes.**

4.0.2.3 - AIR MEDICAL TRANSPORTATION

PRE-ARRIVAL NOTIFICATION OF THE RECEIVING FACILITY IS ESSENTIAL.

1. Prolonged delays at the scene waiting for air medical transport should be avoided.
2. Traumatic cardiac arrest due to blunt trauma is **not** appropriate for air transport.
3. In the rural environment, direct transfer of trauma patients by air medical transport may be appropriate and should be encouraged.

4.0.2.4 - USE OF GUIDELINES

1. EXCEPTIONS:
 - A. 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;
 - B. It is unsafe or medically inappropriate to transport the victim directly to an adult or pediatric

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- trauma center due to adverse weather or ground conditions or excessive transport time;
- C. Transporting the victim to an adult or pediatric trauma center would cause a shortage of local emergency medical services resources.
 - D. No appropriate trauma center is able to receive and provide trauma care to the victim without undue delay;
 - E. 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, such a request is made by an adult member of the patient's family or legal representative of the patient.

4.0.3- PREHOSPITAL FIELD PEDIATRIC TRAUMA TRIAGE GUIDELINES

1. Utilized for persons under 16 years of age
2. Patients to be taken to the 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.**
3. Pediatric Trauma Center - Utilize length-based drug treatment guide (e.g. Broselow Pediatric Emergency Tape). Use Pedi-Wheel for determining normal vital signs.

ANATOMY OF INJURY

1. Penetrating trauma to head, neck, torso, and extremities proximal to elbow and knee
2. Abdominal and/or chest injury with tenderness, distention, or seatbelt sign
3. Chest injury: Flail chest and/or tension pneumothorax
4. Two or more proximal long bone fractures
5. Evidence of pelvic fracture including hip
6. Signs or symptoms of a spinal cord injury
7. Burns greater than 5% Total BSA or other significant burns involving the face, feet, hands, genitalia, or airway
8. Amputation proximal to wrist and/or ankle
9. Evidence of serious injury of (two) 2 or more body systems
10. Crush injury to head, neck, torso, or extremities proximal to knee or elbow

YES = To Pediatric Trauma Center or Adult and Pediatric Trauma Center	NO = Assess Physiologic
Alert Trauma Team	

PHYSIOLOGIC

1. **GCS= \leq 13 (See Section 4.3.1)** Loss of consciousness or alteration in level of consciousness with evidence of head injury at time of exam or thereafter, or fails to localize pain
2. Evidence of poor perfusion (ie; weak distal pulse, pallor, cyanosis, delayed capillary refill, tachycardia)
3. Evidence of respiratory distress or failure (ie; stridor, grunting, retractions, cyanosis, nasal flaring, hoarseness or difficulty speaking)

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YES = To Pediatric Trauma Center or Adult and Pediatric Trauma Center	NO = Evaluate Mechanism of Injury if high energy impact
Alert Trauma Team	

MECHANISM OF INJURY

1. Auto-pedestrian/auto-bicycle injury with significant (> 5 mph) impact
2. Death in same passenger compartment
3. Ejection or unrestrained occupant of a motor vehicle
4. Extrication time >20 minutes
5. Falls 3 times child's height
6. High Speed auto crash
 - A. Initial speed > 40 mph
 - B. Intrusion into passenger compartment > 12 inches
 - C. Major auto deformity > 20 inches
7. Open motor vehicle crash >20 mph or with separation of rider from vehicle
8. Pedestrian thrown or run over
9. Unrestrained rollover

YES = Consider Trauma Center	NO = Check Special Situations
Alert Trauma Team	

SPECIAL SITUATIONS

1. Congenital disorders
2. Cardiac or chronic respiratory condition
3. Insulin dependent diabetes, liver disease, morbid obesity
4. Patient with bleeding disorder or patient on anticoagulants
5. Immunosuppressed patients (renal dialysis, transplant, cancer, HIV)
6. All pregnant trauma patients should go to nearest adult trauma center, if within 30 minutes transport time.

YES = To Pediatric Trauma Center or Adult and Pediatric Trauma Center	NO = Assess Physiologic
Alert Trauma Team	

4.1 – MULTIPLE TRAUMA

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

FIRST RESPONDER

1. Establish airway, breathing and circulation. Maintain C-spine immobilization. Use the modified jaw-thrust if airway needs to be opened.

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2. Assess patient and initiate 100 % {O₂} therapy via non-rebreather mask.
3. If snoring is heard or patient unconscious: insert an {oral or nasopharyngeal airway}, and assist with ventilations with 100% {O₂}
4. If gurgling heard or secretions/blood/vomit present: suction upper airway.
5. Assure adequate ventilation. If breathing shallow and rapid (greater than 29 breaths per minute), or slow (less than 10 breaths per minute), assist breathing using bag-valve mask with 100% {O₂} and reservoir.
6. Control hemorrhage by appropriate method, and splint/immobilize as indicated.

BASIC

7. If patient resuscitation is appropriate according to **Section 3.1.5, “Non-Initiation of CPR,”** perform {endotracheal intubation} using in-line immobilization technique. Confirm tube placement using **Primary and Secondary Methods**, and secure tube.
8. Manage any injury that may compromise breathing.
9. Place/maintain the patient in correct position to maintain the airway.
10. Apply {Pulse Oximeter}.
 - Open pneumothorax: cover with an occlusive dressing, tape three sides down.
 - Tension pneumothorax:
 - lift one side of any occlusive dressing;
 - if patient has signs and symptoms of tension pneumothorax, perform needle decompression on the affected side;
 - if patient with torso trauma has rapidly and profoundly dropping or non-palpable BP, perform bilateral needle chest decompression.
 - After chest decompression, provide positive pressure ventilation.
 - Flail chest: immobilize with a bulky dressing or towels taped to the chest.

11. TRANSPORT immediately!



During transportation:

- A. Continue to evaluate patient.
- B. Splint individual fractures.
- C. Check pulses distal to the fracture site.
- D. Check distal skin color, temperature, neurologic status.
- E. Obtain relevant history.

4.2 - TRAUMATIC FULL ARREST AFTER INITIATION OF CARE

FIRST RESPONDER

1. Open, assess and maintain the airway, using the modified jaw-thrust, always assume C-spine injury.
2. Ventilate with 100% {O₂} using BVM. If patient has severe head injury, ventilate at a rate of 10 faster than the normal respiratory rate. Avoid hyperventilation.
3. Check carotid or brachial pulse. If no pulse, or HR < 60 bpm, begin CPR and rapid transport to appropriate facility by ground providing the patient does not meet the criteria of “**Non-Initiation of CPR**”: **Section 3.1.5.**
4. Provide ventilations during CPR with a {Bag-Valve-Mask (BVM) or Positive Pressure Ventilation (PPV) with 100% {oxygen}}.
5. CPR continuously until {AED} is attached to patient. Press to analyze. If no shock advised, continue CPR.

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6. If shock advised, provide set of three stacked shocks.
 7. CPR continuously for one minute, if no pulse, then press to analyze. If shock advised, repeat set of three (3) stacked shocks.
 8. If no shock advised by {AED} at any point, transport as soon as possible
 9. CPR continuously.
 10. Stop external bleeding.
- BASIC**
11. Contact Medical Control and advise of patient's condition, while continuing CPR and rapid transport to appropriate facility by ground, if appropriate.
 11. If patient resuscitation is appropriate according to Section 3.1.5: Non-Initiation of CPR, perform {Endotracheal Intubation} using in-line immobilization technique. Confirm tube placement using **Primary and Secondary Methods**, and secure tube.
 13. Approximately every five minutes stop vehicle and re-analyze patient as long as shock advised. Never shock or analyze in a moving vehicle

4.3 - HEAD INJURY

GENERAL CONSIDERATIONS

1. Evaluate patient condition:
 - A. Level of Consciousness
 - B. Pupillary size and reaction
 - C. Glasgow Coma Scale results
2. {Orotracheal intubation may be indicated only if patient arrests and should be accomplished gently with in-line C-spine immobilization. Confirm tube placement using **Primary and {Secondary} Methods**, and secure tube.}
3. Do not hesitate to take control of airway.
4. Ventilate at a rate of 10 faster than the normal respiratory rate with severe head injury and the following signs of cerebral herniation, according to age. Avoid hyperventilation.
 - A. Blown pupil(s), left and right pupil sizes different, bradycardia, posturing, and decreased Level of Consciousness.
 - B. {quantitative (i.e., numeric) End Tidal CO₂} (EtCO₂), ventilate at a rate to maintain EtCO₂ readings at approximately 30 mmHg (30 torr).}
5. Notify hospital for all patients with serious signs and symptoms of Head Injury; advise of all three components of GCS.

4.3.1 - PEDIATRIC GLASGOW COMA SCALE

To be completed on all patients

Use Adult GCS for children age > 5 years.

Infant < 2 years		GCS	Child Age 2 - 5 years	GCS
EYES	SPONTANEOUSLY	4	SPONTANEOUSLY	4
	TO VOICE	3	TO VOICE	3
	TO PAIN	2	TO PAIN	2
	NO RESPONSE	1	NO RESPONSE	1
BEST VERBAL RESPONSE	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

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	NO RESPONSE	1	NO RESPONSE	1
BEST MOTOR RESPONSE	NORMAL MOVEMENT	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



Hyperventilation and EtCO₂ Levels: Maintain good ventilation at rate of about one breath every 4 – 5 seconds with high flow oxygen. Prophylactic hyperventilation for head injury is no longer recommended. Cerebral herniation syndrome is the only situation in which hyperventilation (ventilating every 3 seconds) is still indicated.

An increase in the level of CO₂ (hypoventilation) promotes cerebral vasodilatation and increased swelling, while lowering the level of CO₂ (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 when you may hyperventilate is cerebral herniation syndrome. With 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, 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.

4.4 - EXTREMITY FRACTURES, DISLOCATIONS, SPRAINS

FIRST RESPONDER/BASIC

1. ABC's with C-spine control as indicated.
2. Control bleeding by direct pressure.
3. Assess extremity distal to the injury for color, pulses, sensation, temperature and movement.
4. Apply appropriate splinting device.
5. Re-assess color, pulses, sensation and movement after splinting and during transport.
6. Elevate extremity applying {ice/cold pack} to site.
7. For open fractures, control bleeding with direct pressure and cover with dry, sterile dressing.

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Rules of Splinting

1. Adequately visualize the injured part.

- Check and record distal sensation and circulation before and after splinting. Check movement distal to the fracture if possible (ask conscious patient to wiggle fingers or observe motion of the unconscious patient when a painful stimulus is applied)
- If the extremity is severely angulated and pulses are absent, apply gentle traction in an attempt to straighten it. This traction should never exceed 10 pounds of pressure. If resistance is encountered, splint the extremity in the angulated position. When attempting to straighten an extremity, it is very important to be honest with yourself with regard to resistance. It takes very little force to lacerate the wall of a vessel or to interrupt the blood supply to a large nerve. If the trauma center is near, always splint in the position found.
- Open wounds should be covered with a sterile dressing before applying the splint. Splints should always be applied on the side of the extremity away from open wounds to prevent pressure necrosis.
- Use the splint that will immobilize one joint above and below the injury.
- Pad the splint well.
- Do not attempt to push bone ends back under the skin. If applying traction and the bone end retracts back into the wound, do not increase the amount of traction. Do not use your hands or any tools to try to pull the bone ends back out, but be sure to notify the receiving physician. Bone ends should be carefully padded by bandages before pneumatic splints are applied to the lower extremities. The healing of bone is improved if the bone ends are kept moist when transport time is prolonged.
- In a life-threatening situation, injuries may be splinted while the patient is being transported. When the patient is stable, splint all injuries before moving the patient.
- If in doubt, splint a possible injury.

Reference: BTLS

Note: The person who requires a load and go approach can be adequately immobilized by careful packaging on the long spineboard. Additional splinting in the vehicle en route to the hospital as time and the patient's condition permits.



Immobilization devices must be appropriately sized for infants and children. The pediatric patient should be placed supine and immobilized in a neutral in-line position. Infants, toddlers, and preschoolers should be padded from shoulders to hips. Equipment that may be used includes the following:

- Rigid, cervical collar
- Towel/blanket roll
- Child safety seat
- Pediatric immobilization device
- Vest-type/short spine board
- Long spine board
- Straps, cravats
- Tape
- Padding



Management of Specific Orthopedic Injuries

** PASG, Sager or other Traction splints are Basic EMT procedures only*

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SITE	INJURY	SUGGESTED IMMOBILIZATION
Clavicle	Fracture	Sling and swath
Shoulder	Dislocation	Splint in position found with pillow, sling and swath
Humerus	Fracture	Short board splint & sling and swath
Elbow	Fracture	Splint in position found
Elbow	Dislocation	Splint in position found
Forearm	Fracture	Rigid splint and sling
Wrist	Fracture	Splint in position found
Hand	Fracture	Splint in position of function
Finger	Fracture	Malleable padded splint in position of function
Pelvis	Fracture	*PASG & long board
Hip	Fracture	Blanket between legs & secure injured leg to uninjured leg, backboard
Hip	Dislocation	*Sager Splint, Long board with leg supported with pillow
Femur	Fracture	*Sager Splint, other Traction splint, PASG
Knee	Fracture	Splint in position found
Knee	Dislocation	Splint in position found unless instructed to reduce.
Tibia/fibula	Fracture	Air splint, padded board splint, or *PASG
Ankle	Fracture	Pillow splint or air splint
Ankle	Dislocation	Pillow splint or air splint
Foot	Fracture	Pillow splint or air splint
Toe	Fracture	Tape to adjacent toe

4.5 - DROWNING AND NEAR DROWNING

FIRST RESPONDER/BASIC

- 1. Maintain personal safety at all times.**
2. Assure ABCs, starting in the water if necessary
3. Consider spinal immobilization, and deliver 100% {O₂}.
4. If patient arrests, or is found in arrest, attempt to evaluate for the presence of hypothermia. If severe hypothermia is strongly suspected, limit defibrillation attempts to no more than three.
5. Check pulse, assure ABCs, intubate apneic pulseless patient and continue CPR.
6. Apply AED and check. Follow cardiac arrest guidelines.
7. Evaluate neurological status including level of consciousness (AVPU), pupillary response, and movement.
8. Remove wet clothing, dry the child, wrap in warm blankets, and try to maintain the child's body temperature.
9. If feasible for patient condition, Near Drowning patients should be transported to a Trauma Center.

4.6 - HYPOTHERMIA/FROSTBITE

GENERAL CONSIDERATIONS

1. Secure airway, and consider cervical spine immobilization.
2. Administer {warmed, humidified} 100% {O₂}, by NRB mask or BVM.
3. Attempt to evaluate the severity of hypothermia, if means are available.
4. Evaluate neurological status including level of consciousness (AVPU) and pupillary response.

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5. Notify hospital immediately.
6. Move patient to warm environment, remove all wet clothing and cover with blankets.
7. Take great care to avoid any rough movement, since that can precipitate VFib. It may be beneficial to immobilize the victim on a backboard.
8. Assess vital signs, mental status, temperature of patient and environment, and evidence of local injury. It may be necessary to assess pulse and respirations for up to 30 seconds or more to confirm arrest in the profoundly hypothermic patient.
9. Diabetics are highly susceptible to cold illnesses. Consider the possibility of hypoglycemia, and treat accordingly.
10. If patient condition warrants, Hypothermia patients should be transported to a Trauma Center. Patients with severe frostbite patients should be transported to a Burn Center.

4.6.1 HYPOTHERMIA WITH ARREST

FIRST RESPONDER

1. Secure Airway. CPR continuously.
2. Consider spinal immobilization. Evaluate for other traumatic injuries.
Apply **AED** if patient is 8 years or older or greater than 25Kg/55lb. **AED**'s with pediatric capability may be used on children 1 year of age or greater with appropriate training, equipment, and pads, (use length-based drug treatment guide, e.g. Broselow Pediatric Emergency Tape, when unsure about patient weight, age), apply **{AED}** and activate device. **check rhythm and shock if indicated.**
Maximum of three (3) shocks: 200 J, 300 J, and 360 J.
3. If "No Shock Advised", begin CPR.
4. {Use a hypothermia thermometer, if available.} If body temperature is < 30 degrees centigrade (86 degrees Fahrenheit), or severe hypothermia is strongly suspected, limit defibrillation attempts to no more than three.
5. If body temperature is > 30 degrees centigrade (86 degrees Fahrenheit), follow normal arrest protocols.
6. If "No Shock Advised", begin CPR.

BASIC

7. {Intubate and oxygenate the patient with 100% **O2**. {that is warmed and humidified.} Confirm tube placement using **Primary and {Secondary}Methods**, and secure tube
8. Diabetics are highly susceptible to cold illnesses. Consider the possibility of hypoglycemia, and treat accordingly.
9. Transport **IMMEDIATELY** after ABC's and appropriate defibrillations (as above), unless an ALS unit is en route and has an ETA of less than 5 minutes to the scene.
10. Continue resuscitative efforts for longer than normal, even if there is no response while in transit.



AED Usage: If AED has recording capabilities, start verbal documentation when AED is applied.

4.6.2 - HYPOTHERMIA WITHOUT ARREST

FIRST RESPONDER

1. Do not initiate CPR if there is any pulse present, no matter how slow.
2. Consider spinal immobilization; evaluate for other trauma.

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3. Use {O₂}, high flow. Do not hyperventilate. Do not use adjunctive airway equipment unless necessary. If necessary, use least intrusive measures that will adequately assure airway and ventilation.
4. Ventilate if necessary, and oxygenate with 100% {warmed/humidified}.O₂.
5. Avoid rough handling and unnecessary stimulation.
6. Do not allow conscious patients to ambulate, exercise or move about.
Diabetics are highly susceptible to cold illnesses. Consider the possibility of hypoglycemia.

BASIC

7. {Determine blood sugar level.}
 - A. Blood sugar less than 60, administer 1 tube of **Oral Glucose**.
 - B. May be repeated in 10 minutes if blood sugar remains below 60.
 - C. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, administer 1 tube of **oral glucose**
8. If feasible for patient condition, hypothermia and frostbite patients should be transported to a Trauma Center.
9. May be repeated in 10 minutes if blood sugar remains below 60.
10. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, administer 1 tube of **Oral Glucose**.
11. If patient condition warrants, Hypothermia patients should be transported to a Trauma Center and Frostbite patients should be transported to a Burn Center.

4.6.3 - FROSTBITE

FIRST RESPONDER

1. Protect injured areas from pressure, trauma, and friction. Remove all covering, including jewelry, from injured parts. Do not rub. Do not break blisters.
2. Do not attempt to thaw injured part with local heat.
3. Do not allow limb to thaw if there is a chance that limb may refreeze before evacuation is complete.
4. Maintain core temperature by keeping patient warm with blankets, warm fluids, etc.

BASIC

5. Severe frostbite injuries should be transported to a Burn Center.
6. Transport and Contact Medical Control.

4.7 - BURNS/SMOKE INHALATION

GENERAL CONSIDERATIONS

1. **Burn Referral Centers:**
 - A. Transport patients under 16 years of age with severe burns to the pediatric regional burn center, at the Children's Medical Center, unless > 30 minute transport time.
 - B. Transport patients 16 years of age and older with severe burns to the adult regional burn center at Miami Valley Hospital, unless > 30 minute transport time.
2. The first priority is to assure scene safety and then remove the patient from the heat and/or flame, electrical or chemical exposure.
 - A. When dealing with contaminated environments, EMTs must have appropriate protective clothing. If not available, contact appropriate Haz Mat service for such equipment.

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3. Airway, Breathing, and Circulation must be stabilized before addressing the burn. Establish and maintain C-spine control if indication of neck/head trauma.
4. Patient with extensive burns must be monitored for hypothermia. Avoid use of ice and/or prolonged cold compresses. When in doubt, cover with dry dressing. Cover burn areas with clean, dry sheets or dressings after cooling first. Remove all rings, watches, and jewelry. Superficial and partial thickness burns of less than 10% may have wet dressings applied. Do not remove items, which have adhered to the skin.
5. In caring for the burn, the EMT should:
 - A. Stop the Burning
 - B. Reduce the pain
 - C. Prevent contamination
6. Major burns should be transported directly to a Burn Center when possible, as above. Inhalation injuries with unsecured airway should be transported to the nearest facility. For patients with major burns, and long transports, you may contact Medical Control for destination:
 - A. Closest Hospital or
 - B. Burn Center
7. **For chemical burns, gross decontamination must be done at the scene. Always include removal of all involved clothing. Advise receiving facility, and be prepared to transport to decontamination area. See Section 6.6 – Haz-Mat.**
8. Keep patient warm – turn off air conditioner if appropriate.
9. The burn patient should be managed as any other trauma victim. The burn itself has a low priority over other associated injuries for which the patient must be completely evaluated. Vital signs may be taken over damaged tissue if no other area is accessible.

FIRST RESPONDER

1. Assess for respiratory distress, stridor, hoarseness, sooty sputum, singed eyebrows and nares or burns of the face or airway. Suspect airway injury and request ALS if available. Assess neuro status.
2. Administer 100% {O₂} by {NRB, or BVM}.
3. Determine types of burn and treat as follows:
 - A. Thermal (dry and moist):
 1. Stop burning process: i.e., remove patient from heat source, cool skin by applying water if burn area is less than 10% body surface area; remove clothing.
 2. If patient starts to shiver or skin is cool, stop cooling process
 3. Estimate extent (%), depth, and seriousness of the burn. Contact Medical Control and transport.
 4. Avoid wet dressings if burn area is greater than 10% body surface area (BSA).
 - B. Radiation Burns:
 1. Treat as thermal burns except when burn is contaminated with radioactive source, and then treat as chemical burn.
 2. Contact HAZ-MAT TEAM for assistance in contamination cases
 - C. Chemical Burns:
 1. EMS must wear appropriate protective clothing and respirators
 2. Remove patient from contaminated area to decontamination site (NOT AMBULANCE).
 3. Determine chemicals involved; contact appropriate agency for chemical information.
 4. If any possibility of continuing contamination, notify hospital promptly.
 5. Remove patient's clothing and flush skin.
 6. Leave contaminated clothes at scene. Cover patient completely before loading into squad.
 7. Personnel not involved in decontamination process should transport patient.
 8. See **Section 6.6 - Haz-Mat**, for some specific treatments.

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9. For Chemical Burns, notify hospital as early as possible! It is imperative that the hospital be notified prior to your arrival.
- D. Electrical Burns
1. Shut down electrical source; do not attempt to remove patient until electricity is confirmed to be shut off.
 2. If no pulse, apply {AED} and follow 3.1.1.
 3. Assess for visible entrance and exit wounds and treat as thermal burns.
 4. Assess for internal injury, i.e., vascular damage, tissue damage, fractures, and treat.
- E. Inhalation Burns:
1. Provide {O2} therapy.

BASIC

1. Determine the severity of the burn, contact Medical Control and transport.
2. For Inhalation Burns, Thermal Burns, and Smoke Inhalation: provide {humidified} O2 using a {wall humidifier} with saline. Be prepared to Provide Endotracheal Intubation in case of ARREST For Inhalation Burns, Thermal Burns, and Smoke Inhalation:
3. Assess for airway injury and transport immediately unless an ALS unit is enroute and has an ETA of less than 5 minutes to the scene.



Pediatric Rule of Nines

Child

Head (back & front)		12%
Chest & Abdomin		18%
Back		18%
Arms (back & front)	ea	9%
Legs (back & front)	ea	16%
Buttocks (each side)		2%
Genitals		1%

Infant

Head (back & front)		18%
Chest & Abdomin		18%
Back		18%
Arms (back & front)	ea	8%
Legs (back & front)	ea	14%
Buttocks (each side)		2%
Genitals		1%

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4.8 - HEAT EXPOSURE

GENERAL CONSIDERATIONS

1. Geriatric patients, pediatric patients, and patients with a history of spinal injury or diabetes mellitus are the ones most likely to suffer heat-related illness. Other contributory factors may include heart medications, diuretics, cold medications and/ or psychiatric medications.
2. Heat exposure can occur either due to increased environmental temperatures, prolonged exercise or a combination of both. Environments with temperature above 90 degrees Fahrenheit and humidity over 60% present the most risk.
3. When altered mental status is present consider other causes such as hypoglycemia, stroke and/ or shock.

FIRST RESPONDER

1. Secure and maintain airway, and consider cervical spine injury.
2. Administer {O₂}, use BVM if needed.
3. Move patient to cool environment.
4. Be prepared for seizures.

BASIC

5. Assess mental status, temperature of patient and of environment. Assess vital signs at least every 15 minutes.
6. Strip the patient of clothing, cool the patient, and apply water to the skin. Provide oral fluids if patient is conscious, and not vomiting or extremely nauseous.
7. Maintain {SpO₂} to at least 95% .
8. Intubate the apneic/pulsless patient, if indicated, and oxygenate with 100% O₂.
9. If feasible for patient condition, significant Heat Exposure patients should be transport to a Trauma Center.



Heat Stroke: Most serious type of exposure illness, usually due to prolonged exposure to heat, inadequate fluid replacement and deficient thermoregulatory function. Patient often experiences inadequate perspiration with body temperatures reaching 105 degrees F or greater. Skin is usually hot and dry and there may be an altered LOC and/or coma. Seizures may occur. Cardiovascular collapse is the usual cause of death.

Heat Exhaustion: More moderate form of heat exposure associated with dehydration combined with overexertion. Skin is cooler and the core temperature is below 105 degrees F. The patient may experience syncope with orthostatic hypotension.

Heat Cramps: The mildest form of heat exposure caused by dehydration, overexertion, and electrolyte abnormalities. The skin is moist with muscle cramps, usually affecting large muscle groups.

Altered Mental Status: When altered mental status is present, consider other causes such as hypoglycemia, stroke and/or shock.

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4.9 – SYMPTOMATIC CARBON MONOXIDE POISONING

FIRST RESPONDER

1. Remove the victim from the contaminated area.
2. Airway with c-spine control as indicated.
3. Provide high flow {O₂} to all suspected CO poisonings continuously.
4. Evaluate for associated injuries.

BASIC

5. Provide humidified O₂ using a {wall humidifier} with saline. **Pulse Oximetry will give false readings: Do not use it.**
6. If CO is suspected, and any of the following High Risk Factors are present, strongly consider Hyperbaric Oxygen (HBO) Treatment. Contact Medical Control and discuss where the patient should be transported.
 - A. Underlying cardiovascular disease, or cardiovascular symptoms such as chest pain or shortness of breath.
 - A. ANY interval of unconsciousness, or obvious neuro-psychological symptoms, such as loss of time, inability to perform simple motor tasks, or loss of memory.
 - C. Smoke inhalation victims.
 - D. Pregnancy.
 - E. Obvious neuro-psychological symptoms, such as ANY interval of unconsciousness, loss of time, inability to perform simple motor tasks, or loss of memory

4.10 - EYE INJURY

GENERAL CONSIDERATION: CONTACT LENSES

1. If possible, contact lenses should be removed from the eye. Be sure to transport them to the hospital with the patient. If the lenses cannot be removed, notify the ED personnel as soon as possible.

SPECIFIC CARE

Use Nasal Cannula connected to bag of 0.9 **Normal Saline** for irrigation, when indicated.



- Place cannula over bridge of the nose with nasal prongs pointing down toward the eyes.
- Attach cannula to an intravenous administration set using normal saline.
- Run continually into both eyes.

4.10.1 - EYE INJURY: CHEMICAL BURNS

FIRST RESPONDER

1. When possible determine type of chemical involved first. The eye should be flushed with copious amounts of water or saline. Irrigate for a **minimum** of 20 minutes, starting as soon as possible and continue until the pain is relieved. Any delay may result in serious damage to the eye.
2. Always obtain name and, if possible, the Material Safety Data Sheet (MSDS), or ask that name or MSDS be brought to the hospital as soon as possible

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BASIC

3. Use Nasal Cannula and IV tubing for irrigation.

4.10.2 – MAJOR EYE TRAUMA

1. Keep patient quiet.
2. Cover injured eye with Metal Eye Shield or Cardboard or Styrofoam cup, taped onto bony prominences.
3. Do not use a pressure patch, or any absorbent dressing on or near any eye that may have ruptured, or have any penetrating trauma.
4. Cover both eyes to limit movement.
5. Transport with head elevated.

4.11 {SPINAL INJURY CLEARANCE ALGORITHM}

This section intentionally left blank. Not recommended for pediatric patients

4.12 - START TRIAGE SYSTEM FOR MASS CASUALTY INCIDENTS (MCIs)

START SYSTEM OF TRIAGE

I. INTRODUCTION. 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. However, there are limitations to START (see section below).

II. PROCEDURE.

A. Initial Triage (Using the START Method).

- 1) Utilize the Triage Ribbons (color-coded strips). One should be tied to an upper extremity in a VISIBLE location (wrist if possible, preferably on the right).
 - a) RED - Immediate.
 - b) YELLOW- Delayed.
 - c) GREEN- Ambulatory (minor).
 - d) BLACK- Deceased (non-salvageable).
- 2) Independent decisions should be made for each victim. Do not base triage decisions on the perception of too many REDs, not enough GREENs, etc.
- 3) If borderline decisions are encountered, always triage to the most urgent priority (eg. GREEN/YELLOW patient, tag YELLOW). Move as quickly as possible!

B. Secondary Triage.

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

III. START.

- A. Locate and remove all of the walking wounded into one location away from the incident, if possible. Assign someone to keep them together (eg. PD, FD, or initially a bystander) and notify COMMAND of their location. Do not forget these victims. Someone should

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re-triage them as soon as possible.

B.-Begin assessing all non-ambulatory victims where they lay, if possible. Each victim should be triaged in 60 seconds or less, preferably much less.

NOTE: Remember the mnemonic RPM (Respirations, Perfusion, Mental Status).

1) Assess RESPIRATIONS:

- a) If respiratory rate is 30/min. or less go to PERFUSION assessment.
- b) If respiratory rate is over 30/min, tag RED.
- c) If victim is not breathing, open the airway, remove obstructions, if seen, and assess for (a) or (b) above.
- d) If victim is still not breathing, tag BLACK. (Depending on circumstances, you may attempt three rapid defibrillations before triage to BLACK.)

2) Assess PERFUSION:

- a) Performed by palpating a radial pulse or assessing capillary refill (CR) time.
- b) If radial pulse is present or CR is 2 seconds or less, go to MENTAL STATUS assessment.
- c) No radial pulse or CR is greater than 2 seconds, tag RED.

NOTE: In addition, any major external bleeding should also be controlled.

3) Assess MENTAL STATUS:

- a) Assess the victim's ability to follow simple commands and their orientation to time, place, and person.
- b) If the victim follows commands, oriented X3, tag GREEN.

NOTE: Depending on injuries (eg. burns, fractures, bleeding) it may be necessary to tag YELLOW.

- c) If the victim does not follow commands, is unconscious, or is disoriented, tag RED.

IV. SPECIAL CONSIDERATIONS.

- A. The first assessment that produces a RED tag stops further assessment.
- B. Only correction of life-threatening problems (eg. airway obstruction or severe hemorrhage) should be managed during triage.
- C. To help speed the process, Departments should consider utilizing colored (Red, Yellow, Green, Black) {Ribbons} to initially mark patients categories. Triage Tags are then attached and filled out once the patient reaches the Treatment Area.
- D. 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.

RPM: 30, 2, Can Do!

R: Respirations – 30

P: Perfusion – 2

M: Mental Status – Can do

Above was adapted from <http://www.co.broward.fl.us/tmi02719.htm>.

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4.12.A - START SYSTEM LIMITATIONS



Why do we use START?

There are several reasons. It is:

- Fast
- Simple
- Easy to Use
- Easy to Remember
- Consistent

Given massive situations, such as the first bombing of the World Trade Center in New York, or the Alfred P. Murrah Federal building in Oklahoma City, START is the most effective system we know of to rapidly help us sort out the casualties, from the “walking wounded” and the “worried well.”

There are also other things that we can do to provide the most effective care in a disastrous situation. In reviews of previous Mass Casualty Incidents, some of the greatest pitfalls that occur include:

- Failure to alert hospitals quickly
- Failure to perform any triage at all

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- Spending too much time triaging each patient
- Lack of focus on critical patients
- Rendering time-consuming care on scene
- Sending too many patients too quickly to nearby hospitals (i.e., “relocating the disaster to the hospital”)
- Improper use of personnel (BLS does BLS stuff. ALS does ALS stuff)
- Patients not uniformly distributed to hospitals
- Lack of strong, visible Command
- Lack of preparation or training
- Failure to adapt to circumstances
- Poor communication

When incidents involve more than 50 casualties, the Transport Sector should initially direct patients away from the nearest hospital or trauma center until they can be checked for availability. Why? Because in past large disasters, more than 75% of patients were sent to the nearest hospital or trauma center. Those facilities were then quickly overloaded. Again: Don’t relocate the disaster to the nearest hospital!

It is also crucial to remember that Triage is a process, not an event. The importance of repeated Triage, that is re-evaluating each patient over and over until they can be transported to an appropriate facility, cannot be overstated.

However, START has some very significant limitations, especially for smaller incidents. The greatest concern is the initial command to have all patients who can stand to move to another area. Those patients are then classified, at least initially, as “Green.”

Obviously, there are risks to this. With trauma patients, the potential to exacerbate an injury is very high. A patient with a spinal fracture may move in such a way that their spinal cord is severed, creating a permanent quadriplegic. A person having a cardiac event triggered by the stress of the incident may well be triaged to Green in this way, and then suffer a cardiac arrest which could have been prevented. Inhalation injuries during Haz-Mat events may be missed. Still another victim may try to stand on a fractured lower leg, and turn a closed fracture into an open one. On the other hand, a patient with a relatively minor injury, such as an ankle fracture, may be unable to walk, and slow the triage process.

In small incidents, use of that component of START may put not only the patient at risk, but you, as well. Exacerbation of injuries, such as those just discussed, put you at legal risk.

Finally, even patients who receive the full START evaluation may be miscategorized. One example is a patient who fails the “Can do” Mental Status component. The assumption is that the patient’s deterioration is due to the event, but obviously, there are many conditions, from dementia to intoxication, that can impact the patient’s mental status.

A modification the START system can be used in smaller multiple casualty incidents, especially motor vehicle crashes, and incidents with less than 10 patients. First, **don’t** yell out to move the MINOR “walking wounded” to a collection area. Don’t move the Minor (Green) patients! **It is not the standard of care** to ask these patients to move at a smaller incident.

After that, continue to use RPM to assess and categorize patients. But do not assume that those assessments are flawless, and don’t forget that patient conditions change. Re-triage as the patient is

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moved to the Treatment Area, and repeatedly while they are in Treatment. Be prepared to upgrade and downgrade triage categories as you develop more information about the patient's condition.

The last set of concerns that we will discuss is the use of START with Children. Apneic children are more likely to have primary respiratory problems than adults. Perfusion may be maintained for a short time, and those child may be salvageable.

More frequently, pediatric patients can be either over-triaged or under-triaged, depending on age and stress levels, by using the Respiratory Rate of 30 as a measure. Capillary refill, though usually more reliable in children, may not adequately reflect peripheral hemodynamic status in a cold environment. Obeying commands may not be an appropriate gauge of mental status for younger children.

There is a companion triage system called, "JumpSTART," that tries to address these concerns. It is more complex, and we have chosen not to utilize it in this region, at least for now. However, you can consider making the following modifications to your assessment of patients who are 8 years old or less:

If a child is not breathing even after opening the airway, consider attempting 15 seconds of ventilations (e.g., Mouth to Mask), which would be about 5 breaths, if the patient still has a peripheral pulse.

If breathing resumes after this "jumpstart," tag patient Red (Immediate) and move on.

When assessing Respiratory Rate, consider using 15 – 45, rather than 30. Patients with a respiratory rate <15 or >45, or that are irregular, should be tagged as Immediate.

If the respiratory rate is in the 15 – 45 range, proceed to assess perfusion.

These additional points should help you better utilize the START triage system to care for your patients.

5.0 - RESPIRATORY DISTRESS

GENERAL CONSIDERATIONS

1. In Children, open airway by using sniffing position.
2. Do not attempt to visualize the airway; unless a foreign body is suspected.
3. The use of suction may be critical.
4. Keep patient calm and transport upright.
5. Cricoid pressure can be applied while ventilating to minimize gastric distention.

FIRST RESPONDER

1. Open airway and check for breathing
2. Administer {O₂} by NRB mask or nasal cannula; be prepared to assist ventilations by BVM with 100% {O₂}.
3. **Patient with Severe Distress:** Sit patient up, assist ventilations, and give HIGH flow {O₂}

BASIC

4. Evaluate breath sounds, and obtain {Pulse Oximetry} reading:
 - A. **Clear breath sounds:** Treat cause (pulmonary embolism, metabolic disturbance, hyperventilation) and transport in position of comfort.
 - B. **If wheezes present:** Consider possibility of allergic reaction. See **Section 6.3 Anaphylaxis.**
 - C. If wheezes present and not an allergic reaction, and patient has history of asthma, bronchitis:
 - Ask patient or involved bystanders if a bronchial dilator has been prescribed, and do they have the medication with them.

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- ♦IF MEDICATION IS PRESCRIBED TO PT. BUT NOT AVAILABLE – Call for order to access and administer **Proventil** in BLS Drug Bag.
 - Transport immediately, unless ALS unit is en route and has an ETA of less than 5 minutes. (Consider transport time.)
 - IF MEDICATION IS AVAILABLE, assure medication is prescribed for patient.
 - Check medication- expiration date, administration method.
 - Administer medication by having the patient as completely as possible exhale, then activate spray during inhalation, and have patient hold breath for ten seconds, or as long as possible, so medication can be absorbed.
 - Record patient reaction to medication and relay response to Medical Control with vital signs.
- D. **Rales present (pulmonary edema):** Sit patient up, administer HIGH flow **O2** by NRB and/or BVM and transport.
- E. **Sucking chest wound:** Seal open wound on 3 sides, monitor for development of Tension Pneumothorax.

5.1 – UPPER AIRWAY OBSTRUCTION

First Responder

1. Manually clear airway if foreign body is visible
2. Apply appropriate obstructed airway maneuver until cleared.
3. Administer {**O2**} by NRB mask or blow-by.

BASIC

4. Transport in upright position

5.2 - LOWER AIRWAY OBSTRUCTION/WHEEZING

FIRST RESPONDER

1. Administer 100% {**O2**}.
2. If respiratory effort is insufficient or patient becomes unconscious, assist ventilations with bag-valve-mask.
3. If allergic reaction suspected, follow anaphylaxis protocol. **See Section 6.3**

BASIC

4. ♦If patient is currently prescribed Proventil (Albuterol) Metered Dose Inhaler but has outdated, damaged, or contaminated medication on hand, or does not have their own medication with them at the time of the Emergency, the EMT-Basic may access the BLS Drug Bag for **Proventil (Albuterol)** only under the direction of a Physician. The EMT-B may NOT administer Proventil (Albuterol) to a patient that is not currently prescribed Proventil (Albuterol).
5. Transport immediately, unless an ALS unit is en route and has an ETA of less than 5 minutes.

6 - OTHER MEDICAL ISSUES

6.1 - ALTERED LEVEL OF CONSCIOUSNESS – UNKNOWN CAUSE

FIRST RESPONDER

1. Secure airway and consider cervical spine injury.
2. Administer 100% {**O2**} by NRB mask.

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BASIC

3. Apply {Pulse Oximeter}.
4. Apply restraints as necessary per restraint guidelines.
5. Be prepared to hyperventilate and/or assist ventilations with oral or nasal airway and BVM.
6. **{Determine blood sugar level.}**
 - A. Blood sugar less than 60, **administer 1 tube of Oral Glucose.**
 - B. May be repeated in 10 minutes if blood sugar remains below 60.
 - C. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, **administer 1 tube of Oral Glucose.**
7. Transport immediately, unless an ALS unit is en route and has an ETA of less than 5 minutes.



Oral Glucose Administration: Oral glucose is indicated for any awake but disoriented patient with blood sugar readings 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.

6.2 - DIABETIC EMERGENCIES

FIRST RESPONDER

1. Support with 100% {O₂} by NRB mask.

BASIC

2. **{Determine blood sugar level.}**
 - A. Blood sugar less than 60, **administer 1 tube of Oral Glucose.**
 - B. May be repeated in 10 minutes if blood sugar remains below 60.
 - C. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, **administer 1 tube of Oral Glucose.**
3. Unconscious diabetics are often hypothermic. Be prepared, and treat hypothermia when indicated.
4. Transport immediately, unless an ALS unit is en route and has an ETA of less than 5 minutes.

6.2.1 – DIABETIC EMERGENCIES: REFUSAL AFTER TREATMENT

This section intentionally left blank
Does Not Apply to Pediatric Patients.

6.3 - ALLERGIC REACTION/ANAPHYLAXIS: WHEEZES PRESENT

FIRST RESPONDER

1. Support with 100% {O₂} by NRBM.
2. If severe allergic reaction, assist patient in administering {Epi-Pen} if patient has his/her medication available.
3. Ask patient or involved bystanders if epinephrine by auto-injector has been prescribed for these situations and do they have the medication with them

BASIC

4. Apply pulse oximeter.

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5. ♦ If patient is currently prescribed Epi-Pen, but has outdated, damaged, or contaminated medication or does not have their own medication with them at the time of the emergency, the EMT-B may access the BLS Drug Bag for Epi-Pen only on orders from a physician. The EMT-B may not administer Epi-Pen to a patient that is not currently prescribed Epi-Pen or epinephrine.
 - **Epi-Pen Jr.** 0.15 mg for patients < 30 Kg (< 66 pounds)
 - **Adult Epipen** 0.3mg for patients > 30 Kg (> 66 pounds).
 - The EMT-B may not administer Epi-Pen to a patient that is not currently prescribed an Epi-Pen (Epinephrine).
6. IF MEDICATION IS NOT AVAILABLE – Transport immediately, unless ALS unit is en route and has an ETA of less than 5 minutes.
7. If patient develops wheezing, assist them with taking their prescribed **Proventil (Albuterol)** metered dose inhaler.
 - A. If patient is currently prescribed Proventil (Albuterol) Metered Dose Inhaler but has outdated, damaged, or contaminated medication on hand, or does not have their own medication with them at the time of the Emergency, the EMT-Basic may access the BLS Drug Bag for **Proventil (Albuterol)** Metered Dose Inhaler only under the direction of a Physician. The EMT-B may NOT administer Proventil (Albuterol) to a patient that is not currently prescribed Proventil (Albuterol).
8. Apply ice pack to stings to slow swelling and spread of poison
9. Monitor vital signs.
10. Transport immediately, unless ALS unit is en route and has an ETA of less than 5 minutes.
11. If patient goes into cardiac arrest, intubate, possibly with smaller than normal ET tube.



Epi-Pen Administration: When assisting patient with severe allergic reaction with their own prescribed Epi-Pen, do the following:

- Assure medication is prescribed for patient
- Check medication for expiration date.
- Contact Medical Control, if possible.
- Administer medication in mid-thigh and hold injector firmly against leg for at least 10 seconds to assure all medication is injected.
- Record patient reaction to medication and relay to Medical Control – be sure to have vital signs.

6.4 - SEIZURES

GENERAL CONSIDERATIONS

1. Protect and support the patient.
2. Provide Aspiration precautions:
 - A. Recovery position: a side lying position with the head lowered 15 to 30 degrees
 - B. {Suction} readily available**
 - C. If possible, mouth cleared of foreign bodies (food, gum)

FIRST RESPONDER

1. Consider C-spine injury.
2. Administer 100% {O₂}.
3. Be prepared to assist ventilations.

BASIC

4. Obtain history from family and/or bystanders.

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5. {**Determine blood sugar level.**}
 - A. Blood sugar less than 60, **administer 1 tube of Oral Glucose.**
 - B. May be repeated in 10 minutes if blood sugar remains below 60.
 - C. If no blood sugar monitor is available, or if there is a strong suspicion of hypoglycemia despite blood sugar readings, **administer 1 tube of Oral Glucose.**
6. Bring any medications with child to the hospital.
7. Establish communications with Medical Control and advise of patient condition.
8. Transport immediately, unless an ALS unit is en route and has an ETA of less than 5 minutes.



Seizure Information: The basic rule with seizures is to “protect and support” the patient. Evaluate for drug abuse and evidence of head trauma. If trauma is suspected, consider cervical immobilization. Bring medication with patient if available.

When obtaining history from bystanders, include the following:

- Seizure history
- Description of seizures, areas of body involved, and duration
- Medications
- Other known medical history – especially head trauma, diabetes, drugs, alcohol, stroke, heart disease.

6.5 - POISONING/OVERDOSE

GENERAL CONSIDERATIONS

1. WHEN DEALING WITH CONTAMINATED ENVIRONMENTS, EMS MUST HAVE APPROPRIATE PROTECTIVE CLOTHING. IF NOT AVAILABLE, CONTACT HAZ-MAT.
2. **Patient should be searched for weapons.** Consider having police perform search, but don't assume that their search was adequate.
3. EMS will consider the possibility of accidental or intentional poisoning whenever any of the following conditions are present:
 - History of observed or admitted accidental or intentional ingestion.
 - Coma.
 - History of known suicide gesture.
 - Suggestive intoxicated behavior (hyperactive, hypoactive, unstable walk, lethargic)
4. Bring all patients' prescription medications to the hospital. Consider having police take custody of substance and means.

FIRST RESPONDER

1. Establish airway
2. Obtain relevant history
 - What, when, why taken (if known)
 - Quantity taken (if known)
 - Victim's age and weight
3. Make a thorough search for any and all potential poisonous substances (i.e. medications, drugs).
4. Evaluate patient's:
 - Breath sounds (rales)
 - Level of consciousness and gag reflex
 - Pupil size
 - Evidence of head injury

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BASIC

5. Take whatever container(s) the substance(s) came from to the hospital along with readily obtainable samples of medication unless this results in an unreasonable delay of transport.
6. **{Check finger stick blood sugar}**.
7. If an **Ingested Poison** – Transport.
 - A. Bring bottle and/or remaining poison to hospital with patient. Consider having police take custody of substance.
8. If an **Inhaled Poison**:
 - A. Remove from toxic area
 - B. Secure airway, support with 100% **O2**
 - C. Assist in ventilation if necessary
9. If an **Absorbed Poison**:
 - A. Remove victim's clothing - protect EMS personnel from contaminated clothing. Consider Haz-Mat Team contact.
 - B. Identify substance.
 - C. Flush skin with water before and during transport if possible - at least 10-15 minutes.
 - D. If eyes are involved flush with water or saline continuously.
10. If an **Injected Poison**:
 - A. Secure and maintain airway.
 - B. If possible, identify substance and method of injection. Consider having police take custody of substance and means.



In ingested poisoning, it is not necessary to transport emesis. Document if pills or fragments were seen in emesis. Do not give Ipecac or Activated Charcoal.

6.6 - HAZ-MAT

Contact receiving hospital immediately to allow for set up time on all Haz-Mat situations!
Any chemical burn is, by definition, a Haz-Mat incident.

FIRST RESPONDER

1. Perform scene survey and practice Body Substance Isolation.
2. Do not attempt to treat patient until you have adequately protected yourself.
3. Consider calling for assistance.
4. **Initiate field decontamination.** First step is to remove contaminated clothing.
5. If hazardous material is tenacious, thoroughly wash the patient using a solution of {Dawn} Soap and water, paying special attention to skin folds and other areas where simple irrigation may not remove it. Do not abrade the skin!

BASIC

6. **Do not** transport a patient until gross decontamination is completed.
7. ♦ Obtain **permission** from Medical Control before entering hospital with a potentially contaminated patient.
8. ♦ If patient is suffering effects from an identified Hazardous Material, refer to the relevant section below, and contact Medical Control for orders..
9. EMS crews should decontaminate themselves and vehicle before leaving hospital.

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Field decontamination must be initiated. An example of the often overlooked importance of decon is a patient soaked in diesel fuel.

6.6.1 - HAZ-MAT: HYDROFLUORIC ACID (HF)

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6.6.2 - HAZ-MAT: CYANIDE

FIRST RESPONDER

1. Substance is **extremely** hazardous Assure safety of all personnel!
2. Conscious Victims – 100% {O₂} by mask.
3. Unconscious Victims of Known or Strongly Suspected Cyanide Poisoning.
 - A. Evaluate ABCs.
 - B. If patient in cardiac arrest - CPR continuously, apply AED.

BASIC

4. If patient is apnic or in arrest -Endotracheal intubation is indicated and provide 100% O₂ by BVM or PPV.
5. 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:
 - A. Provide 100% {O₂} by BVM, preferably via endotracheal tube if in arrest..
 - B. CPR if indicated. In cases of cardiac arrest associated with cyanide poisoning, the cyanide antidotes must have a very high priority.
6. Transport immediately, unless an ALS unit is en route and has an ETA of less than 5 minutes

6.6.3 - HAZ-MAT: ORGANOPHOSPHATE OR NERVE GAS POISONING

1. Any case of known or strongly suspected organophosphate or carbamate (e.g., insecticides such as parathion or malathion); or nerve agent (e.g., 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.
2. Substance is **extremely** hazardous Assure safety of all personnel before entering or attempting to treat victims.

6.6.4 - HAZ-MAT: BIOLOGICAL AGENTS

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6.6.5- HAZ-MAT: Pepper Spray

1. Departments may purchase and utilize {Sudecon Wipes} to assist in the decontamination of patients or public safety personnel who have been sprayed with Pepper Spray.

6.7 - ABDOMINAL PAIN

FIRST RESPONDER

1. C-spine control, if indicated.
2. Administer 100% {O₂} with NRBM.

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3. Transport in position of comfort.
4. Give nothing by mouth.
5. If patient has vaginal bleeding, ask for an estimate of blood loss. Perform a visual perineal exam if any of the following are present:
 - Patient pregnant, voices possibility of pregnancy, or has had multiple missed menstrual periods, **and** has significant abdominal pains. Pregnant patients > 20 months gestation should be taken to a Maternity Department if feasible; < 20 weeks should go to the Emergency Room.
 - Presenting large clots and/or suspected products of conception.
 - Any history of trauma below umbilicus with vaginal bleeding.
 - Patient states use of more than two pads saturated with blood per hour.
 - Visual observation of large vaginal blood loss.



The **position of comfort** for most patients with abdominal pain is supine with knees flexed, unless there is respiratory distress.

6.8 - FEVER

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

6.9 - NEWBORN RESUSCITATION

GENERAL CONSIDERATIONS

1. Thermal regulation is an important aspect of the new born. Body heat must always be maintained. As soon as the baby is born, wipe the baby dry and place in a warm environment. Ways to maintain body heat:
 - A. Cover infant's head with a cap, place infant against mother's skin, and cover both.
 - B. Use car seat with heat packs under and beside infant. Be sure to place towels between heat packs and infant.
 - C. Use indirect, {heated, humidified O₂}.
2. Always position infant in the sniffing position (1" towel under shoulders). This will allow for an adequate open airway and drainage of secretions.
3. Suction infant until all secretions are clear of airway.
 - A. Meconium aspiration is a major cause of death and morbidity among infants. If thick meconium is present and not removed adequately a high percentage (60%) of these infants will aspirate the meconium.
 - B. If meconium is present, suction thoroughly the mouth and nose.
 - C. Mechanical suction may be used on infants but only if the suction pressure does not exceed 100mmHg or 136cmH₂O. Bulb suctioning is preferred.
4. 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.
5. Avoid direct application of cool oxygen to infant's facial area as this may cause respiratory depression due to a strong mammalian dive reflex immediately after birth.
6. Refer to length-based drug treatment guide (e.g. Broselow Pediatric Emergency Tape) when unsure about patient weight, age and/or drug dosage.

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7. {Suction mouth and nose during delivery; continue suctioning with infant's head down until airway is clear and infant is breathing adequately}.
8. After delivery of the infant, assess the airway and breathing while drying and positioning head down. If amniotic fluid not clear, continue to {suction} prior to ventilating and stimulating.
9. If heart rate is <100, BVM ventilation is necessary to increase heart rate.
10. Despite adequate ventilation, if heart rate is < 60 bpm cardiac compressions should be initiated.
11. BVM ventilation is also indicated for apnea and persistent central cyanosis
12. BVM ventilation rate should be between 40 – 60 breaths per minute. Cardiac compression rate should be at a rate of 120 times per minute (Compression to Breath Ratio 3:1)
13. Transport immediately unless an ALS unit is enroute and has an ETA of less than 5 minutes to the scene.

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
		Grimace	Cough or sneeze
in nostril			
Color	Blue or pale	Body pink, extremities blue	Completely pink

7 - OBSTETRICAL EMERGENCIES

See Section 7 of the Adult Orders.

Unless delivery is imminent, transport to a hospital with obstetrical capabilities. Delivery is imminent when the baby is crowning during a contraction.

8 and 8.1 – CHILDBIRTH and DELIVERY COMPLICATIONS

See Section 8 & 8.1 of Adult Orders.

9.0 - PSYCHIATRIC EMERGENCIES

FIRST RESPONDER

1. Evaluate patient's Vital Signs and general appearance.
2. **Patient should be searched for weapons.** Consider having police perform search, but don't assume that their search was adequate.
3. If not already contacted, contact local law enforcement for assistance with violent patients.
4. Obtain relevant history:
 - A. Note any suicidal or violent intent
 - B. Previous psychiatric hospitalization, when and where
 - C. Where does patient receive psychiatric care?
 - D. What drugs does patient take (including alcohol)?
5. **Is patient a danger to self or others?**
6. Calm the patient.
7. Evaluate patient's Vital Signs and general appearance.

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8. Transport patients to appropriate facility.
9. Contact Medical Control.
10. ALL patients who are not making rational decisions and who are a threat to themselves or others should be transported for medical evaluation.
11. Threat of suicide, overdose of medication, drugs, or alcohol, and/or threats to the health and well being of others are NOT considered rational.

9.1 - VIOLENT PATIENTS

“Quick Look” for Determining Patient Incompetency

- acutely suicidal patient
- confused patient
- developmentally or mentally disabled patient who is injured/ill
- intoxicated patient who is injured/ill
- physically/verbally hostile patient
- unconscious patient
- **any child under age 18, with urgent need for medical care**
-

FIRST RESPONDER

1. **Patient should be searched for weapons.** Consider having police perform search, but don't assume that their search was adequate.
2. Consider need for restraint. Call for police.
3. Patients should never be transported while restrained in a prone position with hands and feet behind the back, or sandwiched between backboards and mattresses. Restraint techniques must never constrict the neck or compromise the airway.
4. EMS personnel must have the ability to rapidly remove any restraints if the patient vomits or develops respiratory distress (e.g., there must be a handcuff key in the vehicle during transit).
5. Handcuffs are generally not appropriate medical restraints. If they are used, the handcuff key must accompany the patient during treatment and transportation.
6. Explain and Document need for restraint to patient.
7. Any form of restraint must be informed restraint.
9. Employ “reasonable force.” Reasonable force is the use of force equal to or minimally greater than the amount of force being exerted by the patient.

BASIC

10. Request that police fill out a “Pink Slip.”
11. Attempt to rule out the following conditions by the given method:
 - hypoglycemia must be ruled out by blood glucose measurement or by administering **Oral Glucose**.
 - hypoxia must be ruled out by by {O₂ saturation measurement} oxygen saturation or by supplemental **O₂**.
 - hypotension must be ruled out by checking the BP.
 - head injury must be ruled out by physical exam and incident history.
 - anticholinergic poisoning must be ruled out by physical exam and incident history.
 - CVA must be ruled out by the absence of risk factors and focal neural deficits.
 - Ethanol withdrawal must be ruled out by patient history.
 - Hypercapnia /hypercarbia (elevated levels of CO₂ caused by inadequate ventilation/respirations) can cause a respiratory failure patient (especially young asthmatics) to be combative **despite normal Pulse Ox readings**.
12. Preferably transport the patient to the facility where he or she was last hospitalized.

PROCEDURE MANUAL
GMVEMSC Pediatric Protocol - 1ST RESPONDER & EMT-B

9.2 - CHILD ABUSE/NEGLECT

FIRST RESPONDER/BASIC

1. Report all alleged or suspected child abuse or neglect to the appropriate agency. This can be accomplished by completing the Social Services Referral Form provided by GMVEMSC.
2. EMS personnel **must** report any alleged abuse or neglect (including adults) to the appropriate agency, generally to the police, rather than social services, if victim is neither elderly or pediatric. **Simply giving your report to hospital staff does not meet your burden under the law.**

9.3 - SAFE HARBOR

1. **Voluntary Separation of Newborn Infant**
 - A. 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.
 - B. Stipulations of separation:
 10. Infant must be 3 days old or less
 11. No signs of abuse or neglect
 - C. History which should be obtained:
 12. Date and time of birth
 13. Any family medical history
 14. Information concerning prenatal care
 15. Information concerning birth
 - D. Information should be obtained in a manner, which will not lead to the revealing the identity of the parents. Information collected should be based on patient (infant) care needs and assure confidentiality.
 - E. Transport infant



Calculations

Weight 2.2 lbs = 1 kg

To Calculate mcg/kg/min to ml/hr from premixed medications:

$$\frac{(\text{mcg/kg/min}) \times (\text{weight in kg}) \times (60 \text{min/hr})}{(1000 \text{mcg/mg}) \times (\# \text{mg/ml medication})}$$

Pediatric Rule of Nines

<i>Child</i>		
Head (back & front)		12%
Chest & Abdomin		18%
Back		18%
Arms (back & front)	ea	9%
Legs (back & front)	ea	16%
Buttocks (each side)		2%
Genitals		1%

PROCEDURE MANUAL
GMVEMSC Pediatric Protocol - 1ST RESPONDER & EMT-B

Infant

Head (back & front)		18%
Chest & Abdomin		18%
Back		18%
Arms (back & front)	ea	8%
Legs (back & front)	ea	14%
Buttocks (each side)		2%
Genitals		1%

Trauma Fluid Resuscitation

20ml/kg IV Bolus if systolic pressure below normal.

Defibrillation Guidelines

Defibrillation 2-4 joules/kg
Start with 2 joules/kg, then go to 4 joules/kg if no effect.

Synchronized Cardioversion 0.5 –1 joule/kg
Use with SVT, start with 0.5 joules/kg, then double if no effect.

Patient Reporting Guidelines

- Children’s Medical Center asks that you call with report for all patients being transported to the emergency department.
- Please report the following:
 - Squad Name
 - Age and Sex of Patient
 - Mechanism of injury
 - Injuries sustaine
 - Vital signs
 - Treatment
 - Estimate Time of Arrival
- This information is needed to provide the best care for the patient and to provide EMS organizations with appropriate continuity of patient care to our staff.

Greater Miami Valley EMS Council & Ohio EMS Region 2

EMS CHECKLIST: SUSPECTED CARDIAC 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 considerations 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 (e.g., tPA) that your patient has:**

Absolute and Relative Contraindications to Thrombolytic Therapy (Adapted from ACLS)		
Time Frame	Absolute Contraindications	Relative Contraindications
Right Now	___ Suspected aortic dissection ___ Known intracranial neoplasm ___ Pregnancy (certain lytic agents)	___ Severe, uncontrolled hypertension (BP > 180/110) ___ Current anticoagulant use ___ Prolonged (> 10 minutes) and potentially traumatic CPR
Past 2 – 4 Weeks	___ Active internal bleeding (except menses)	___ Trauma, especially head trauma ___ Major surgery ___ Noncompressible vascular punctures ___ Internal bleeding
Past Year	___ Non-hemorrhagic stroke or TIA ___ Prior exposure to specific lytic agent	___ Intracerebral pathology
Ever	___ Hemorrhagic stroke ___ Prior allergic reaction to streptokinase	___ 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 Alert Checklist.

_____ b) Advise MCP ASAP that you are transporting a **CARDIAC ALERT** patient.

_____ c) Attempt to limit scene time to **10 minutes or less.**

_____ d) Follow appropriate Treatment Considerations for Specific AMI types.

Greater Miami Valley EMS Council & Ohio EMS Region 2 PREHOSPITAL SUSPECTED CVA/TIA CHECKLIST

Patient Name _____ EMS Agency/Unit: _____

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

(Y)es or (N)o

S/S:	Unilateral weakness
	Unilateral numbness
	Facial Droop
	Slurred speech
	Inappropriate words

Exam:	Facial droop
	Arm drift
	Abnormal speech

_____ 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 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)

_____ BEST VERBAL RESPONSE (1 – 5)

_____ BEST MOTOR RESPONSE (1 – 6)

_____ **Total GCS** (3 – 15)

_____ 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. Hyperventilate 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 arrive within **two hours** of onset of symptoms. Consider air transport for Stroke patients with long transport times.

_____ 6. **CONTRAINDICATIONS to Thrombolytic Therapy (e.g., 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) Severe uncontrolled hypertension (>200/>120).

_____ g) Pregnancy.

_____ h) 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 > 180/110.

_____ 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 (e.g. Coumadin)

2004 FIRST RESPONDER/BASIC DRUG INFORMATION

Basic Adult Drugs - Indications, Dosages Page 109

Basic Pediatric Drugs - Indications, Dosages Page 110

Basic Therapeutic Actions, Contraindications, Precautions, Side Effects Page 111

1st Responder Drugs - Indications, Dosages Page 112

1st Responder Therapeutic Actions, Contraindications, Precautions, Side EffectsPage 112

2004 FIRST RESPONDER/BASIC DRUG INFORMATION

EMT-BASIC	DRUG NAME	INDICATION	DOSAGE (ADULT)	REQUIRES MCP
	Aspirin	Suspected Cardiac Chest Pain w/ symptoms consistent with an Acute Coronary Syndrome	325 mg. MUST CHEW. If baby aspirin available, administer 4.	Pt's own med: No Out of BLS Drug Bag: Yes
	Dawn Soap	Decontamination of tenacious hazardous material on skin	Solution of Dawn soap & water	No
	Epi-Pen	Allergic Reaction/Anaphylaxis: Wheezes Present and pt. has Epi-Pen prescribed. If pt's Epi-Pen is not available, EMT-B may access BLS Drug Bag.	Auto-inject (0.3 mg)	Pts. own med. - No Out of BLS Drug Bag: Yes
	Nitrostat (Nitroglycerin)	Suspected Cardiac Chest Pain and pt. w/ Systolic BP >100 has prescribed Nitrostat If pt's prescribed Nitrostat is not available, EMT-B may access BLS Drug Bag	1 tablet 1/150 grains (0.4 mg) Sublingual. May repeat q 5 min. up to a total of not more than 3 tablets.	Initial: No Repeat : Yes
	Oral Glucose	Diabetic Emergency, Seizures, Altered Level of Consciousness – Unknown Cause , or Stroke w/ blood sugar less than 60 or if no blood sugar monitor is available, or there is a strong suspicion of hypoglycemia despite BS readings	1 tube May be repeated in 10 minutes if BS remains <60	No
	Proventil Metered Dose Inhaler	Asthma/Emphysema/COPD/Respiratory Distressw/ Wheezes present or Pulmonary Edema and pt. has prescribed bronchodilator Inhaler. If pt's prescribed bronchodilator inhaler is not available, EMT-B may access BLS Drug Bag.	Have pt. exhale, then activate spray (2 puffs) during inhalation & have pt. hold breath for 10 seconds.	Pts. own med.: No Out of BLS Drug Bag: Yes
New Optional Drug	Sudecon Wipes	Pepper Spray	Use as needed to assist with decontamination	No

2004 FIRST RESPONDER/BASIC DRUG INFORMATION

EMT-BASIC	DRUG NAME	INDICATION	DOSAGE (PEDIATRIC)	REQUIRES MCP
	Epi-Pen	<p>Allergic Reaction/Anaphylaxis: Wheezes Present and pt. has Epi-Pen prescribed.</p> <p>If pt's Epi-Pen is not available, EMT-B may access BLS Drug Bag</p>	<p>Children < 30 kg (<66 lbs) Epipen Jr. 0.15 mg Autoinject</p> <p>Children >30 kg (>66 lbs) Epipen 0.3 mg</p>	<p>Pts. own med.: No</p> <p>Out of BLS Drug Bag: Yes</p>
	Oral Glucose	<p>Diabetic Emergency, Altered Level of Consciousness – Unknown Cause w/ blood sugar less than 60 in diabetic emergency or < 70 in altered LOC or if no blood sugar monitor is available, or there is a strong suspicion of hypoglycemia despite BS readings</p>	<p>1 tube</p> <p>May be repeated in 10 minutes if BS remains <60 in diabetic emergency or < 70 in altered LOC</p>	<p>no</p>
	Prescribed Bronchodilator	<p>Asthma/Emphysema/COPD/Respiratory Distressw/ Wheezes present or Pulmonary Edema and pt. has bronchodilator Inhaler prescribed.</p> <p>If pt's prescribed bronchodilator inhaler is not available, EMT-B may access BLS Drug Bag.</p>	<p>Assist w/ self administration</p>	<p>Pts. own med.: No</p> <p>Out of BLS Drug Bag: Yes</p>

2004 FIRST RESPONDER/BASIC DRUG INFORMATION

EMT-BASIC DRUGS	THERAPEUTIC ACTION	CONTRAINDICATION	PRECAUTIONS/SIDE EFFECTS
Aspirin	Antiplatelet, interrupts clotting process	Known allergy to aspirin, active ulcer disease, hemorrhagic stroke, bleeding disorders, children with flu-like symptoms	Stomach irritation, heartburn or indigestion, nausea or vomiting, allergic reaction
Epi-Pen	Dilates bronchioles to improve breathing, constricts blood vessels to improve blood pressure	No contraindications when used in a life-threatening situation	Anxiety, palpitations, chest pain (rare), increased heart rate, irregular heart beats (dysrhythmias)
Nitrostat (Nitroglycerin)	Dilates blood vessels to reduce work load of heart	Low blood pressure	Headache, lowered blood pressure
Oral Glucose	Restores lack of blood sugar necessary for normal functioning of organs (especially the brain)	Patient who lacks gag reflex (which could lead to aspiration of glucose into lungs)	None
Proventil MDI	Relaxes smooth muscles in the bronchioles causing the airway passages to widen or dilate	Known allergy to medication (unlikely if the medication is prescribed for the patient)	Increased heart rate, shakiness

2004 FIRST RESPONDER/BASIC DRUG INFORMATION

FIRST RESPONDER DRUGS	DRUG NAME	INDICATION	DOSAGE	REQUIRES MCP
	Epi-Pen	Allergic Reaction/Anaphylaxis: Wheezes Present and pt. has Epi-Pen prescribed.	Patient's Own Medication <u>Children < 30 kg (<66 lbs)</u> EpiPen Jr. 0.15 mg Autoinject <u>Adults and Children >30 kg (>66 lbs)</u> EpiPen 0.3 mg	No

FIRST RESPONDER DRUGS	THERAPEUTIC ACTION	CONTRAINDICATION	PRECAUTIONS/SIDE EFFECTS
Epi-Pen	Dilates bronchioles to improve breathing, constricts blood vessels to improve blood pressure	No contraindications when used in a life-threatening situation	Anxiety, palpitations, chest pain (rare), increased heart rate, irregular heart beats (dysrhythmias)

**GMVEMSC and State of Ohio EMS Region 2
2004 Standing Orders “Options” List**

According to the Standing Orders, “No procedures, techniques, or drugs will be used without the proper equipment or beyond the training or capabilities of the prehospital personnel. Nothing may be used without specific pre-approval of the Medical Advisor for the local department or agency. **Items that are enclosed in braces ({}) are at the option of the Department, and its Medical Director.**”

Listed below are the optional items in the 2004 GMVEMSC Standing Orders.

All EMS Providers

Nasopharyngeal airways
AEDs (biphasic or conventional)
Pulse Oximeter (not optional for Paramedics performing StI)
PASG
Sager Splint
Hypothermia thermometer
Warmed and humidified O2
Humidified O2
Pediatric DNR Orders
Dawn Soap or equivalent
Flow-Restricted, Oxygen-Powered Ventilation Device” (FROPVD)
Triage Ribbons
Sudecon Wipes

First Responders

First Responders, by design, respond with minimal equipment and supplies. In this protocol, their use of any equipment, including such items as oxygen, {AEDs}, or splints shall be on an as available basis.

EMT-Basics

EMT-B intubation

EMT-Basics, EMT-Intermediates, and Paramedics

Electronic End Tidal Carbon Dioxide Monitors (with or without waveform) or End Tidal Carbon Dioxide Detectors or Esophageal Detection Devices
Must have at least one of the above three
Pedi-Cap Pediatric End-tidal Carbon Dioxide Detectors
Commercial tube-securing devices
Dual Lumen Airways, e.g., Combitube or Pharyngotracheal Lumen Airway (PtL)
Laryngeal Mask Airways (LMA)
Blood sugar monitoring equipment
Must have approved program
Spinal Injury Clearance Algorithm
Must have a Quality Improvement mechanism in place
Doppler Stethoscope

EMT-Intermediates and Paramedics

IV Pressure Infusers
Warmed IV solutions
Biphasic Defibrillators
IV Pumps or IV Pressure Infusion Devices

Adult Intraosseous (IO) devices such as the BIG or FAST1

Paramedics

Digital Intubation

Lighted Stylet Intubation

BAAM Valve

Sedate to Intubate (StI)

To utilize paralytics, paramedics must have an approved cricothyrotomy method available, and use a pulse oximeter (Pulse Ox and a Surgical Cric device such as the PerTrach are **not** optional if performing RSI)

StI includes the following:

Premedicate with Lidocaine

Sedate with Etomidate and Intubate

Versed

Cricothyrotomy with a PerTrach, or other approved device} (unless performing RSI)

Pediatric PerTrach Kits

External Cardiac Pacing

Doppler Monitor

12-Lead EKG

Morgan Lens

Continuous Positive Airway Pressure (CPAP)

Bilevel Positive Airway Pressure (Bi-PAP)

Mucosal Atomizer Device (MAD)

Magnesium Sulfate solution (Epsom salt)} as an irrigating solution for Hydrofluoric Acid burns

Magnesium-containing antacid (e.g., Maalox or Mylanta)} for Hydrofluoric Acid burns

Cyanide Kits

Amyl Nitrite

Sodium Nitrite

(except **Sodium Thiosulfate, which is no longer an Optional item**)

(Mark I Kits with Atropine and Pralidoxime (2-PAM) in auto-injectors or conventional delivery are no longer Optional)

Departmental stockpiles of large quantities of Atropine and supplies (syringes, needles, etc.), or Atropine or Atropine and 2-PAM auto-injectors

Valium Autoinjectors

Departmental supply of ciprofloxacin (Cipro) or Doxycycline in preparation for possibility of bioterrorist attack

2004 Standing Orders: List of Major Changes

As in the past, we are providing a list of the most significant changes between the last set of protocols and the new Orders. However, there are changes that are not listed here. In many cases, the sequence and format of the Orders has also changed.

There are literally hundreds, if not thousands, or changes to the 2004 Greater Miami Valley EMS Council Standing Orders. And the vast majority of those changes, you'll never notice.

There were many reasons for all of these changes. We have tried to modernize the protocols. Medical science is advancing, and EMS must keep pace. The GMVEMSC Standing Orders Committee has worked for more than a year, and looked at dozens of protocols including those from the Ohio Department of Public Safety, areas from all around Ohio, and from cities as far away as New York and Seattle. We have tried to stay as close as possible to the new ACLS Guidelines, so that when you take your next ACLS course, the algorithms will be very similar to what you will find in the Orders.

These Orders are different, because much effort has gone into making the orders more consistent. Dozens of people have worked diligently to improve consistency between Adult and Pediatric Orders, between the different certification levels' Orders, and within each of those categories.

Most of the time, you won't notice those changes. But here are some examples of revisions that make things easier or better for EMS Providers:

2002 protocols have four different blood sugar numbers that need to be memorized. Now there will be a single number, with only one exception (neonatal).

2002 protocols have four different oxygen flow rates for nebulized medication delivery that need to be memorized. There will now be a single range.

2004 protocols have a single range of adequate respirations, instead of two.

2002 protocols have two different rates for administering Versed. There is now only one rate, regardless of usage.

We now have one pediatric dose (weight-based) for IM or IV Versed, regardless of indication, rather than the three doses that we had before.

One of the biggest differences consists of dozens of changes: we now have an entire series of Orders for the "new" (expanded Scope of Practice) EMT-Intermediates. Those Intermediates who have completed the 40-hour EMT-Intermediate Transition Course and have approval of their Medical Director will be allowed to access and use the following medications:

Dextrose 50 50ml

Dextrose 25% 10ml

Glucagon 1mg

Naloxone 2mg

Epinephrine 1mg/30ml vial

Morphine vials 5mg/ml

Diazepam 10mg/2ml vial

Diphenhydramine 50 mg

The material included here is not a mini version of the Standing Orders! You will find that you get the greatest benefit from this section if you have first perused the Orders themselves.

General Changes

First Responders are now included in the protocols. There will be three separate Standing Orders Pocket Guides: one for First Responders and EMT-Basics, one for EMT-Intermediates, and the other for Paramedics. Similarly, there will be three levels of the Standing Orders Training Manuals, which are considered to be the full set of Orders.

“Order-Only” drugs and procedures are now marked with a diamond-shaped bullet (◆). This should make it easier to identify those things that require you to call the Medical Control Physician (MCP). Most of the time, the Orders have been shortened, to get rid of statements to call the MCP. The diamond is the only indication that this is required.

As before, the Orders specifically identify items that are optional. Equipment or additional training time for some of the “As Available” drugs, procedures, and equipment may not be within the budgets of some departments. In other cases, a Medical Director may opt not to have personnel perform some particular protocol. Those items are either marked with braces ({}), or listed as being “as available”, or both. There is a separate section with training material for optional (i.e., bracketed) items, and all of those materials must be provided to EMS personnel who will be using those options.

Section 2.0: There is an emphasis on having EMS personnel document not only the patient’s medications, but also the dose and the frequency.

Section 2.2: As before, when intubating, EMS personnel at all levels are **required** to use secondary confirmation devices. Neither EMT-Bs, EMT-Is, nor EMT-Ps are authorized to intubate, unless they have and can use appropriate secondary confirmation devices (EtCO₂ Detectors or Monitors, and/or Esophageal Detection Devices). The same devices are recommended, though not mandated, for pediatric intubations.

Because of the many reports of endotracheal tubes becoming dislodged during transport, there is increased emphasis on keeping endotracheal tubes in place. Methods include use of commercial tube-securing devices, and possibly spinal immobilization. EMS should re-assess tube placement every time the patient is moved. There is also more emphasis on use of suction. With the exceptions of safety and possibly transport, airway care is your most important job!

There is greater emphasis on the importance of prehospital 12-Lead EKGs.

ADULT PROTOCOLS

EMT-Intermediates

A whole new protocol for a whole new level of provider, with provisions for the EMT-I’s who have not yet converted.

Paramedics

Particularly for paramedics, the orders continue to give you greater latitude to decide what is best for your patients. You are expected to perform thorough and effective patient assessments, and to make cautious but appropriate clinical judgments. Paramedics now have more autonomy, which means you also have much greater responsibility.

Section 2.2: There is increased emphasis on intubating patients with respiratory distress. Intubation is not limited to patients in arrest!

Paramedics have the **option** to use nebulized Lidocaine, and/or Lidocaine jelly, before intubating awake patients. Nebulized Lidocaine may be given as the only drug alone, or combined in the nebulizer with Proventil, or with Proventil and Atrovent, if appropriate.

New Optional Protocol: Sedate to Intubate

Replaces the current optional Rapid Sequence Intubation protocol. New protocol is easier, simpler, safer, and more practical. It will require less training time, and be more acceptable to Medical Directors. Delete the Optional Drugs Succinicholine and Vecuronium.

As before, you are authorized to use either a Needle Cricothyrotomy, or a PerTrach, if you are unable to secure a patent airway by less invasive methods. The new protocols also permit Departments to use other surgical airway devices that are approved by both the GMVEMSC Products and Procedures Committee and your Medical Director.

Relief of Tension Pneumothorax is now limited to the second or third ICS in the midclavicular line.

Section 3.1: Although Epi, Atropine, Narcan, and Lidocaine can be given either way, in Cardiac Arrest it is definitely better to give drugs by IV rather than endotracheally whenever possible. Also, it is very important to use the antecubital or external jugular vein for any drugs administered during CPR, and to flush the line after each medication with about 20 cc of Normal Saline.

Section 3.1.2 - .4: There is greater emphasis on the importance of having Paramedics provide complete resuscitative efforts at the scene of Cardiac Arrests, and consideration of Field Termination when resuscitation is not likely to succeed.

Amiodarone [Cordarone] was added to the protocols for V Fib and V Tach.

Section 3.1.3 - .4: Calcium Gluconate has been replaced by Calcium Chloride in the PEA and Asystole protocols for renal dialysis patients who are in arrest (and in other protocols). Use in PEA arrests is limited to patients who have Wide Complex arrhythmias. This avoids the problems with temperature control for Calcium Gluconate.

Section 3.2: Several treatments, including where to transport, may be impacted by the {12-Lead EKG}, if it is available.

Tachycardias: The tachycardia algorithms have been considerably simplified. Pronestyl has been removed, and Amiodarone added. Adenosine is no longer used for Stable, Wide Complex Tachycardias.

Section 3.4.3: In “Exsanguinating Hemorrhage,” and **in any major trauma case**, IVs are to be started only while en route.

Section 3.5: We once again have a Stroke protocol, which includes the use of the Cincinnati Prehospital Stroke Scale, Glasgow Coma Scale, and the “Prehospital CVA Checklist” (available from GMVEMSC as a reusable sheet), as well as a recommendation regarding transport destination. The patient is to be evaluated for hypoglycemia, which can masquerade as CVA.

Section 4.0: In cases of major trauma, you are expected to limit scene time to less than ten minutes, unless extrication is required. When calling the hospital, in addition to telling them the Vital Signs and results of your physical assessment, you should relay the three **components** of the Glasgow Coma Scale (GCS). The total GCS is less important. Other than situations where the patient is entrapped, **DO NOT START IVs ON THE SCENE!** Prehospital IVs are much less important for the major trauma patient than rapid transport to a facility with trauma surgeons.

The Multiple Trauma section again emphasizes the importance of suctioning the airway. There is a reminder about Section 3.1.5, which defines the times when you should not start CPR on a trauma victim.

Section 4.2 covers Traumatic Full Arrest that occurs after our arrival. If there is a possibility of chest trauma, bilateral needle decompression should be performed.

Section 4.3: There is a Head Trauma section, which includes the Glasgow Coma Scale. A ventilation rate is specified, since there is now evidence that excessively hyperventilating head injury patients is also detrimental.

Section 4.7: Pain relief in burns, as elsewhere, is at the paramedic's discretion. Sodium Thiosulfate, or the cyanide kits if available, may be used for severe smoke inhalation with orders from MCP.

Section 5.1: Proventil has been somewhat deemphasized in the Pulmonary Edema protocol.

Narcan via Mucosal Atomizer Device (MAD)

Administration of Narcan with the optional MAD will be permitted in the Poisoning/Overdose protocol, if Departments opt to purchase MADs.

Section 6.4: Both the first and second doses of Valium may be given to seizure patients, if needed, without a call for orders. Intranasal Versed (via MAD) will be an **option** to Valium for all adult seizure patients. This is, in part, for personnel safety (less chance of a needlestick) and timeliness of treatment issues (i.e., no need to try to start an IV on someone actively seizing), for any Department that opts to purchase MADs.

Section 6.5: Calcium Chloride replaces Calcium Gluconate as a treatment for Calcium Channel Blocker overdose, with orders from MCP.

Section 6.6: There are several protocols for dealing with hazardous materials victims.

- Departments are authorized to purchase Cyanide kits, or their components. It is much less expensive to buy the components, rather than the kits. MCP orders are required for use of any of the three cyanide antidotes. Sodium Thiosulfate will be included in the Drug Bags.
- The Standing Orders cover use of Atropine for organophosphate or nerve agent poisoning, with orders from MCP. Departments are authorized to stockpile large quantities of Atropine and 2-PAM. Mark I Kits and Pediatric Mark I Kits will be in every Drug Bag.
- Departments may also stockpile Cipro or Doxycycline to protect their personnel in the event of a terrorist incident involving bacterial diseases.

Organophosphates and Nerve Agents

Two Mark I Kits (Atropine and 2-PAM) will be added to the Drug Box at the expense of MMRS. They will no longer be an "as available" (optional) item; therefore, all paramedics will therefore be responsible for the Organophosphate/Nerve Agent section, and the Mark I drugs.

Additionally, DMMRS plans to provide each County with Cache of Mark I Autoinjectors.

Antibiotics in Biological Agents Section

Enables use of MMRS Cache of antibiotics for FFs, EMTs, PDs, and family members in the event of Anthrax, Plague, etc., on order of Medical Director, Medical Control or EOC Physician.

Informational sheets will be prepared in advance regarding use of drugs, and stored with the MMRS Antibiotic Drug Cache.

Cyanide

Emphasizes importance of controlling seizures.

Allows use of Sodium Thiosulfate as a single agent, instead of full cyanide kit. Sodium Thiosulfate will be included in the Drug Boxes at the expense of Dayton MMRS. Since it will be in the Box, it will no longer be an "as available" drug: all paramedics will therefore be responsible for the Cyanide section, and the drug, Thiosulfate. Also deletes the specific timing for Thiosulfate delivery, and creates an order for use of Sodium Thiosulfate in cases of severe smoke inhalation.

Hydrofluric Acid

Deletes section on subcutaneous injection of Calcium Gluconate.

Replaces Calcium Gluconate with Calcium Chloride.

Topical Maalox is not needed if Calcium Gluconate Gel was applied according to industrial first aid protocols.

Points out importance of stripping patient's clothing, and avoiding contact of contaminated clothes with patient's face, along with irrigation for at least 30 minutes.

Section 6.7: For patients with severe Abdominal Pain, Morphine may be given at the discretion of the paramedic. Phenergan may be used for active vomiting, and no longer requires permission from MCP. Dystonic reactions are possible following Phenergan. If that occurs, the patient should be treated with Benadryl, on MCP orders.

PEDIATRIC PROTOCOLS

As mentioned in the discussion on Adult Trauma, the dividing point between pediatric and adult for these Orders is 16. Pediatric Protocols apply only to patients **under age 16**.

Paramedics

Section 2.0: IOs are no longer limited to cardiac and respiratory arrests and acute trauma patients. They may be used for unresponsive patients who are hemodynamically unstable if IVs cannot be started.

Section 3.1.2 and 3.1.3: Significant change to Epinephrine dosing. Pacing is no longer used in pediatric cardiac arrest.

Pacing is still used for Bradycardia. New protocol C=corrects a typo which resulted in a dosage error for pediatric pacing.

Section 4.0: As in the Adult Orders, the Pediatric Orders include destination protocols for Trauma patients, according to the guidelines of the State law. For Major Trauma, you may give up to three fluid boluses without an Order.

Paramedics may administer the first dose of Morphine to pediatric patients without an order. However, use is still limited to Isolated Extremity Injuries. There must be no evidence of hypotension, head trauma, intoxication, ingestion, overdose, major facial injuries, severe chest or abdominal injuries, or suspected decompression injury.

Section 4.7: The first dose of Morphine for burn patients who are conscious, alert, in severe pain, and are not hypotensive can be given without an order.

Section 6.7: The Abdominal Pain section, unlike the Adult orders, does **not** authorize use of Phenergan or Morphine.

Order-Only Drugs and Procedures

Adult Protocol

BASICS

- ◆ **Field Termination**
- ◆ Repeat Nitroglycerin tablets.
- ◆ Nitroglycerin from Drug Bag
- ◆ Proventil from Drug Bag
- ◆ Epi-Pen from Drug Bag

INTERMEDIATE

- ◆ **Field Termination**
- ◆ Repeat Morphine Sulfate doses
- ◆ First Morphine Sulfate dose for Pulmonary Edema or Abdominal Pain
- ◆ Repeat Epi-pen for Anaphylaxis
- ◆ Repeat fluid challenge in “Non-Traumatic Shock With Pulmonary Edema”
- ◆ Repeat fluid challenge in “Non-Traumatic Shock Without Pulmonary Edema”
- ◆ Repeat Sub-Q Epinephrine for Asthma
- ◆ **Glucagon** for Calcium Channel Blocker overdose or Beta-Blocker overdose
- ◆ Nitro or Valium for cocaine or Crack
- ◆ Hospital entry with any potentially Haz-Mat contaminated patient

PARAMEDICS

- ◆ **Field Termination**
- ◆ Repeat fluid challenge in “Non-Traumatic Shock With Pulmonary Edema”
- ◆ Repeat fluid challenge in “Non-Traumatic Shock Without Pulmonary Edema”
- ◆ **Sodium Thiosulfate** (now carried in Drug Box) for Smoke Inhalation or Cyanide
- ◆ Repeat Sub-Q Epinephrine for Asthma
- ◆ **Sodium Bicarbonate** for tricyclic overdose
- ◆ **Calcium Chloride 10%** for Calcium Channel Blocker overdose
- ◆ **Glucagon** for Calcium Channel Blocker overdose or Beta-Blocker overdose
- ◆ Hospital entry with any potentially Haz-Mat contaminated patient
- ◆ **Calcium Chloride** for Hydrofluoric Acid
- ◆ **Cyanide Kit (or any of its components, including Sodium Thiosulfate that is no longer “Optional”)**
- ◆ **Atropine** for Organophosphate Or Nerve Gas Poisoning
- ◆ **Pralidoxime (2-PAM)** for Organophosphate Or Nerve Gas Poisoning
- ◆ **Cipro or Doxycycline** for Biological Agents
- ◆ **Valium or Versed** for violently aggressive patients

Adult Protocols: What’s No Longer “Order-Only”

- ◆ Repeat Morphine Sulfate doses
- ◆ **Phenergan** for nausea with active vomiting

Ref list

◆Field Termination

- ◆Repeat fluid challenge in “Non-Traumatic Shock With Pulmonary Edema”
- ◆Repeat fluid challenge in “Non-Traumatic Shock Without Pulmonary Edema”
- ◆Repeat Morphine Sulfate doses
- ◆Further **fluid challenges** if there is 12-Lead **EKG** evidence of Inferior MI
- ◆Repeat Epinephrine for Asthma
- ◆**Sodium Bicarbonate** for tricyclic overdose
- ◆**Calcium Gluconate 10%** for Calcium Channel Blocker overdose
- ◆**Glucagon** for Calcium Channel Blocker overdose or Beta-Blocker overdose
- ◆Hospital entry with any potentially Haz-Mat contaminated patient
- ◆**Calcium Gluconate** for Hydrofluoric Acid
- ◆**Cyanide Kit (or any of its components)**
- ◆**Atropine** for Organophosphate Or Nerve Gas Poisoning
- ◆**Pralidoxime (2-PAM)** for Organophosphate Or Nerve Gas Poisoning
- ◆**Cipro** for Biological Agents
- ◆**Droperidol, (Inapsine)** for nausea with active vomiting
- ◆**Droperidol** for violently aggressive patients

Don't forget: because you can, doesn't mean you have to. You always have the right to call MCP, and discuss whether to use a treatment.

Avulsed Teeth

If the patient's injury involves a single tooth, you may attempt to reimplant it. Simply rinse or brush any obvious dirt off, and gently push it back into the socket. Do not wipe the tooth with any pressure.

Any tooth that you do not reimplant should be transported in a saline or milk solution to the hospital.

Bring all avulsed teeth, as well as any dental appliances (dentures, retainers, etc.) to the hospital. Notify the triage nurse immediately upon your arrival of the potential for reimplantation of a tooth or teeth.

2004 BASIC PRETEST

1. When administering oxygen by nasal cannula to a patient with a hx. of COPD NOT in respiratory distress, set the flow rate at ____ L/min.
2. When administering oxygen by nasal cannula to a patient with a hx. of COPD in respiratory distress, set the flow rate at ____ L/min.
3. When administering oxygen by nonrebreather mask to a patient who appears in need of high flow oxygen, set the flow rate at ____ L/min.
4. How/Why do the following factors limit the use of the colorimetric CO2 detection device (Nellcor Easy Cap)?
5. List causes for false positive or false negative readings when using the Esophageal Detector Device (EDD)
6. FROPVD stands for:
7. List the **treatments which are prohibited for a apneic or pulseless patients with DNR COMFORT CARE - ARREST** orders and for **DNR COMFORT CARE** patients at any time.
8. Give the following information regarding the administration of patient's prescribed Nitrostat (Nitroglycerin):
Indication:
Dose:
Route:
Repeats:
SBP :
9. List an exception to NOT beginning resuscitation on a victim of blunt trauma found in arrest who cannot be delivered to the Emergency Department within 5 minutes of the time patient is found to be in arrest..
10. What is the difference in care for the nonarrest patient between one who has a DNR Comfort Care form and one who has a DNR Comfort Care-Arrest form.
11. List the three tests which are included in the Cincinnati Prehospital Stroke Scale.
12. List three indications for the use of Oral Glucose:
13. List Pediatric weight indication for Epi-Pen Jr. versus Epi-Pen:

14. When using the Adult Trauma Triage Guidelines, list the parameters for three of the following areas of the physical exam that indicate the trauma patient should be taken to a trauma center unless an exception exists.

GCS:

LOC:

Respirations

Pulse:

SBP:

15. Identify the type(s) of patient (s) in which the Dual Lumen Airway and LMA may be used.

16. When dealing with a Major Trauma patient, you are to contact the receiving hospital and provide Medical Control with "MIVT" (and ETA). The letters MIVT stand for:

- M
- I
- V
- T

17. The only procedures that should take precedence to transport of Major Trauma patients are remembered by the mnemonic "EASE". Those letters stand for:

- E
- A
- S
- E

18. Of the following contraindications, which are absolute contraindications to the use of thrombolytics.:

Suspected aortic dissection
Severe, uncontrolled hypertension
Pregnancy (only for streptokinase and anistreplase)
Current anticoagulant use
Known intracranial neoplasm

19. Which of the following statements regarding splinting of a severely angulated extremity fracture with absent pulses is false?

- a. Apply gentle traction in an attempt to straighten it.
- b. Gentle traction should never exceed 5 pounds of pressure.
- c. If resistance is encountered, splint the extremity in the angulated position.
- d. If the trauma center is near, always splint in the position found.

20. List 4 treatments that are always permissible, regardless of a patient's DNR status.

2004 Basic Pretest

21. When using START Triage, which of the following findings in a patient causes them to be tagged RED?
 - a. Respiratory rate over 30/min
 - b. No radial pulse
 - c. Capillary refill greater than 2 seconds
 - d. Victim does not follow commands or is disoriented
 - e. Victim is unconscious
22. In the evaluation of chest pain patients, how should the pain be categorized?
23. In what percentage of patients is it estimated that the Spinal Injury Clearance Algorithm will permit avoidance of spinal immobilization?
24. List five signs/symptoms to look for when you suspect Pulmonary Edema.
look for when deciding to give fluid bolus.
25. When working cardiac arrest in pregnant patient, how do you minimize effects of the fetus on the Vena Cava and why?
26. In what situation (s) is pulse oximetry contraindicated or may be inaccurate?
27. Why is hyperventilation reserved for patient with signs of cerebral herniation?
28. List five important aspects of care for the newborn.
29. In the pediatric patient, what are the age and/or weight limits for use of the EDD?
30. List four signs/symptoms that make you suspect inhalation burns.
31. List the two most reliable indicators of shock in a child..
32. List 4 categories of patients that may be at risk to develop heat-related illness.
33. What age/weight restrictions are there for using an AED (not one with pediatric capabilities) on a pediatric patient?
34. What are the tachycardia rates for infants and for children under the age of 8?
35. In a child less than 8 years of age with poor perfusion, below what heart rate should CPR be begun?
36. In START Triage, what does the mnemonic RPM stand for?

2004 Basic Pretest

37. If patient condition warrants, where should the **Hypothermia** patient be transported and where should the patient with severe **Frostbite** be transported?
38. List three times you are permitted to access the BLS Drug Bag.
39. List three signs/symptoms in the young pediatric patient that are evidence of respiratory distress or failure.
40. When evaluating an infant using the Glasgow Coma Scale, what do you use for best verbal response?
- 5 pts. -
 - 4 pts -
 - 3 pts -
 - 2 pts -
 - 1 pt -
41. List four signs/symptoms that patient with Organophosphate or Nerve Agent exposure may experience.
42. In Section 6.8 Fever, below and above what temperatures do you strongly suggest transport to the caregivers of an infant < 2 months of age with a history or reported temperature ?
43. List two drugs that may be administered by EMT-Bs that dilate bronchioles.
44. List two drugs that may be administered by EMT-Bs that may cause tachycardia (increased heart rate)
- 45 - 50. Match the following drugs with the correct dose. Use each answer only once.
- | | |
|------------------------------------|------------------|
| 45. Aspirin | a. 0.3 mg. |
| 46. Epi-Pen. | b. 1 tube |
| 47. Epi-Pen Jr. | c. 324 - 325 mg. |
| 48. Nitrostat | d. 2 puffs |
| 49. Oral Glucose | e. 0.15 mg. |
| 50. Proventil Metered Dose Inhaler | f. 0.4 mg. |

2004 FIRST RESPONDER PRETEST

1. When administering oxygen by nasal cannula to a patient with a hx. of COPD NOT in respiratory distress, set the flow rate at ____ L/min.
2. When administering oxygen by nasal cannula to a patient with a hx. of COPD in respiratory distress, set the flow rate at ____ L/min.
3. When administering oxygen by nonrebreather mask to a patient who appears in need of high flow oxygen, set the flow rate at ____ L/min.
4. List the **treatments which are prohibited for a apneic or pulseless patients with DNR COMFORT CARE - ARREST** orders and for **DNR COMFORT CARE** patients at any time.
5. List two therapeutic actions of the epinephrine in Epi-Pens for anaphylaxis.
6. List an exception to NOT beginning resuscitation on a victim of blunt trauma found in arrest who cannot be delivered to the Emergency Department within 5 minutes of the time patient is found to be in arrest..
7. List the three tests which are included in the Cincinnati Prehospital Stroke Scale.
8. When using the Adult Trauma Triage Guidelines, list the parameters for three of the following areas of the physical exam that indicate the trauma patient should be taken to a trauma center unless an exception exists.

LOC:

Respirations

Pulse:

SBP:

9. Which of the following statements regarding care of fractures with absent pulses is false?
 - a. Apply gentle traction in an attempt to straighten it.
 - b. Gentle traction should never exceed 5 pounds of pressure.
 - c. If resistance is encountered, splint the extremity in the angulated position.
 - d. If the trauma center is near, always splint in the position found.
10. List 4 treatments that are always permissible, regardless of a patient's DNR status.
11. When using START Triage, which of the following findings in a patient causes them to be tagged RED?
 - a. Respiratory rate over 30/min
 - b. No radial pulse
 - c. Capillary refill greater than 2 seconds
 - d. Victim does not follow commands or is disoriented
 - e. Victim is unconscious
12. In the evaluation of chest pain patients, how should the pain be categorized?

2004 First Responder Pretest

13. When working cardiac arrest in pregnant patient, how do you minimize effects of the fetus on the Vena Cava and why?
14. Which phase of the heart beat (contraction or relaxation) does the systolic blood pressure indicate?
15. What method should be used to open the airway in an individual with a suspected neck injury?
16. What is the best method to use for control of external bleeding?
17. What is the first step to aid a patient who is not breathing?
- 18 - 20 Match the following sounds with the level of obstruction
18. Snoring a. spasm of larynx
19. Crowing b. tongue falling back in throat
20. Gurgling c. fluid in airway
21. Arrange the following steps in order when alone with an adult patient in arrest and you have an AED available.
 - a. Check for a pulse
 - b. Attach the AED
 - c. Send someone to call 911
 - d. Follow AED prompts
 - e. Provide 2 breaths
 - f. Open the airway
22. What pulse is used to determine cardiac arrest in an infant?
23. List three important aspects of care for the newborn.
24. List four signs/symptoms that make you suspect inhalation burns.
25. List 4 categories of patients that may be at risk to develop heat-related illness.
26. What age/weight restrictions are there for using an AED (not one with pediatric capabilities) on a pediatric patient?
27. What are the tachycardia rates for infants and for children under the age of 8?
28. In a child less than 8 years of age with poor perfusion, below what heart rate should CPR be begun?
29. In START Triage, what does the mnemonic RPM stand for?
30. List two things to check before and after splinting.

2004 First Responder Pretest

31. Of the following splinting devices, which is (are) NOT permitted for use by First Responders according to the Ohio Scope of Practice.
 - a. PASG
 - b. Long and short spine boards
 - c. Traction splint
 - d. CID
32. In treating a hypothermia patient in arrest, what is the maximum number of defibrillation attempts permitted?
33. When treating a patient with Frostbite, list three things NOT to do.
34. When assisting patient with severe allergic reaction with their own prescribed EpiPen, list the things you should do.
35. List three signs/symptoms in the young pediatric patient that are evidence of respiratory distress or failure.

**GREATER MIAMI VALLEY EMS COUNCIL
YEAR 2004 BASIC and FIRS RESPONDER SKILL SHEETS**

EMT-BASICS and FIRST RESPONDERS: Use these skill sheets and protocol to study for Skills Testing.

SKILLS TESTERS: Record Pass/Fail on Individual's Test Summary Sheet. Use these 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 Basic Mega Code sheets used for testing.

Orotracheal Intubation of Non-trauma patient (Basic Only)-----	130
Automated External Defibrillator -----	131

Pediatric Mega Code - Separate Basic Mega Code sheets used for testing.

Orotracheal Intubation -(Basic Only)-----	132
Use of Braslow Tape	

Trauma

Inline orotracheal intubation of the trauma patient -(Basic Only)-----	133
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Medications

Metered Dose Inhaler (Proventil) -----(Basic Only)-----	134
Nitroglycerin -----(Basic Only)-----	134
EpiPen -----	134

ADULT PROTOCOL SKILL EVALUATION
SUBJECT: Orotacheal Intubation of the Non-Trauma Patient

NAME _____ DATE _____

LEVEL: ___ Paramedic ___ Intermediate ___ Basic

STEPS	1st Testing Comments	2nd Testing Comments
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. Position the head.		
G. Demonstrate the performance of cricoid pressure.		
H. Assemble equipment.		
I. Insert Laryngoscope.		
J. Elevate the mandible.		
K. Insert the ET tube.		
L. Remove the stylet.		
M. Inflate the cuff with 5 to 10 ml. of air.		
N. Ventilate the patient.		
O. Confirm tube placement, using the End Tidal CO ₂ Detector for patients with a perfusing rhythm, or the Esophageal Detection Device for patients in cardiac arrest. Be able to discuss the indications and limitations of each device.		
a. *NOTE: EDDs will fill more slowly in humans than in manikins		
b. Compress EDD first, then place it on the ETT before ventilating pt.		
c. If bulb fills in <5 seconds, ETT is likely successful		
d. If bulb fails to fill, or takes >5 seconds, or fills with vomit, 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.		
Q. Secure tube in place & reassess placement after any movement of patient..		

EQUIPMENT

- | | | |
|----------------------------------|----------------------|--|
| 1. Proper size Endotracheal tube | 4. Magill forceps | 7. Stethoscope |
| 2. Stylet | 5. 10 ml. syringe | 8. Gloves & eye protection |
| 3. Laryngoscope and handle | 6. Suction equipment | 9. Commercial tube holder or proper taping method. |

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

ADULT PROTOCOL SKILL EVALUATION
SUBJECT: Automated External Defibrillators

NAME _____ DATE _____

LEVEL: ___ Paramedic ___ Intermediate ___ Basic ___ First Responder

STEPS	1st Testing Comments	2nd Testing Comments
A. Perform an initial assessment of the patient.		
B. Begin CPR with 100% oxygen if AED delayed.		
a. If witnessed arrest and no defibrillator available, precordial thump.		
b. 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. Deliver up to three (3) shocks if indicated.		
H. Resume CPR if no response to the shocks.		
I. Repeat steps E, F and G in one minute if needed.		

PEDIATRIC PROTOCOL SKILL EVALUATION
SUBJECT: Pediatric Endotracheal Intubation

NAME _____ DATE _____
 LEVEL: _____ Paramedic _____ Advanced _____ Basic

STEPS	1st Testing Comments	2nd Testing Comments
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. Position the head.		
G. Assemble equipment, choosing the proper size ETT and laryngoscope blade.		
H. Insert Laryngoscope.		
I. Elevate the mandible slightly to visualize the cords.		
J. Insert the ET tube.		
K. Remove the stylet.		
L. Ventilate the patient.		
M. Confirm tube placement, using at least three methods for verification.		
N. Secure the ET tube.		
O. Reassess the ET tube after any movements of the patient.		

EQUIPMENT

- | | |
|----------------------------------|----------------------------|
| 1. Proper size Endotracheal tube | 5. 10 ml. syringe |
| 2. Stylet | 6. Suction equipment |
| 3. Laryngoscope and handle | 7. Stethoscope |
| 4. Magill forceps | 8. Gloves & Eye protection |

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: Orotacheal Intubation of the Trauma Patient

NAME _____ DATE _____

LEVEL: _____ Paramedic _____ Intermediate _____ Basic

STEPS	1st Testing Comments	2nd Testing Comments
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. Keep head in an in-line neutral position.		
G. Demonstrate the performance of cricoid pressure.		
H. Assemble equipment.		
I. Insert Laryngoscope.		
J. Elevate the mandible.		
K. Insert the ET tube.		
L. Remove the stylet.		
M. Inflate the cuff with 5 to 10 ml. of air.		
N. Ventilate the patient.		
O. Confirm tube placement, using the End Tidal CO ₂ Detector for patients with a perfusing rhythm, or the Esophageal Detection Device for patients in cardiac arrest. Be able to discuss the indications and limitations of each device.		
a. *NOTE: EDDs will fill more slowly in humans than in manikins		
b. Compress EDD first, then place it on the ETT before ventilating pt.		
c. If bulb fills in <5 seconds, ETT is likely successful		
f. If bulb fails to fill, or takes >5 seconds, or fills with vomit, esophageal placement is probable.		
g. Contraindicated in pregnancy, or children under 5 yoa or 20 kg.		
P. Confirm tube placement with at least 3 other methods of verification.		
Q. Secure tube in place & reassess placement after any movement of patient.		

EQUIPMENT

- | | | |
|----------------------------------|----------------------|--|
| 1. Proper size Endotracheal tube | 4. Magill forceps | 7. Stethoscope |
| 2. Stylet | 5. 10 ml. syringe | 8. Gloves & eye protection |
| 3. Laryngoscope and handle | 6. Suction equipment | 9. Commercial tube holder or proper taping method. |

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: Metered Dose Inhaler (Proventil)

NAME _____ DATE _____

LEVEL: ___Paramedic ___Intermediate ___Basic

STEPS	1st Testing Comments	2nd Testing Comments
A. Obtain inhaler from the patient.		
B. Remove dust cap.		
C. Shake contents of inhaler.		
D. Place inhaler in patient's mouth.		
E. Instruct patient to depress the inhaler, inhale medication, and hold their breath for a few seconds.		
F. List the indications for the use of Proventil (Albuterol).		
G. List the contraindications and warnings for use of the Proventil aerosol.		

Note: Under the direction of a Physician, the EMT-Basic may access the BLS Bag for a patient who has currently prescribed EpiPen but has outdated, damaged, or contaminated medication on hand, or does not have their own medication with them at the time of the emergency. EMT-Intermediates may administer Proventil Metered Dose Inhaler if indicated to patients who do NOT have prescribed Proventil.

ADULT PROTOCOL SKILL EVALUATION
SUBJECTS: NITROGLYCERIN, and EPIPEN Administration

NAME _____ DATE _____

LEVEL: Intermediate _____ Basic _____ First Responder (Epi-pen Only) _____

SUBJECT: Assisting with Nitroglycerin Administration (EMT-Basic Only)

STEPS	1st Testing Comments	2nd Testing Comments
A. Evaluate the patient. Verify SBP > 100.		
B. Place patient on Oxygen.		
C. Verify patient has physician-prescribed Nitroglycerin (EMT-B).		
D. Verify patient alertness.		
E. Place one Nitroglycerin tablet under the patient's tongue.		
F. Reassess patient vital signs in 2-3 minutes.		
G. Document results of the drug being administered.		

SUBJECT: EpiPen Administration

STEPS	1st Testing Comments	2nd Testing Comments
A. Evaluate the patient, with attention to S&S of anaphylaxis.		
B. Obtain the patient's EpiPen auto-injector.		
C. Assure that it is prescribed to the patient.		
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.		

Note: First Responders may only assist patient with their own EpiPen . Under the direction of a Physician, the EMT-Basic may access the BLS Bag for a patient who has currently prescribed EpiPen but has outdated, damaged, or contaminated medication on hand, or does not have their own medication with them at the time of the emergency. . EMT-Intermediates may administer EpiPen if indicated to patients who do NOT have prescribed EpiPen.

I. DRUG BOX EXCHANGE PROGRAM**II. STANDING ORDERS**

Revised: November 1999; November 2000; May 2002, November 12, 2003

I. DRUG BOX EXCHANGE PROGRAM**PURPOSE**

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

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 Aspirin. 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 Aspirin.
- 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.

WASTED DRUG PROCEDURE

- Morphine, ***Versed*** 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. If a

I. DRUG BOX EXCHANGE PROGRAM**II. STANDING ORDERS**

Revised: November 1999; November 2000; May 2002, November 12, 2003

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 EMS 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 EMS providers will document:
 1. The drug name
 2. The amount used
 3. The amount wasted
 4. The signature of the two witnesses
- One witness will be the EMS provider 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 skill 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.
- 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.

Drug Box 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.

I. DRUG BOX EXCHANGE PROGRAM

II. STANDING ORDERS

Revised: November 1999; November 2000; May 2002, November 12, 2003

EMS providers:

- 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. The EMS provider will 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.
 3. The EMS Officer will contact the EMS Coordinator of the hospital in which the bag originated (hospital name on Blue Seal).
 4. The EMS Officer will 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 medicationsThe 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 number is 614.466.4143. Advise them you want to report a drug bag discrepancy and they will connect you to the appropriate person.
 5. If the drug is a controlled drug (Valium, **Versed** or Morphine), 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.
 6. The EMS Officer will 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.
 7. The EMS Officer will 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 copy of the police report if the bag was stolen, lost, or controlled meds are missing and /or any medications altered.

EMS Coordinators:

- 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:

I. DRUG BOX EXCHANGE PROGRAM

II. STANDING ORDERS

Revised: November 1999; November 2000; May 2002, November 12, 2003

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 medication
 The 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. 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, **Versed** 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.
 - c. 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.

I. DRUG BOX EXCHANGE PROGRAM**II. STANDING ORDERS**

Revised: November 1999; November 2000; May 2002, November 12, 2003

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.

I. DRUG BOX EXCHANGE PROGRAM**II. STANDING ORDERS**

Revised: November 1999; November 2000; May 2002, November 12, 2003

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. Complete DEA Form 106 within 30 days of notification and send electronically:
 - Original to the State Board of Pharmacy
 - Two copies to the DEA
 - 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.

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