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INTRODUCTION FROM THE EMS MEDICAL DIRECTOR AND EMS COORDINATORS

Goshen Hospital and Beacon Health Elkhart General Hospital are proud to update these evidence-based protocols for all affiliated Elkhart County Emergency Medical Service providers. The protocols continue to be developed by the Protocol Committee Research Teams after extensive review of the most recent American Heart Association Guidelines, other regional protocols, relevant medical research, and input from individual field providers. The following evidence-based medical care guidelines are designed to improve patient outcomes, while decreasing any potential risk to the patient as well as maximizing the interventions appropriate for each level of care.

The color coded format of the protocols allows all EMS professionals to easily follow the potential interventions and treatment available for each specific patient complaint. All provider levels are highlighted, with level-appropriate care below, while the corresponding protocol STOP line is clearly delineated.

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<thead>
<tr>
<th>EMERGENCY MEDICAL RESPONDER STOP</th>
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Key Points/Considerations
- Additional points specific to patients that fall within the protocol

These protocols are designed to serve the community as a whole and include all levels of field providers. As taught in every EMT class, BLS should be completed before ALS. Advanced providers are responsible for all appropriate BLS interventions.

Medical Control/Direction for all levels of EMS providers is defined as:
- System Medical Director, when present at the scene and in physical contact with the patient
- Base physician at the receiving hospital, by radio, landline, or cellular telephone

[When transport is to another facility, and communication is not possible with the physician at the receiving facility, use Base physician at Goshen Hospital or Elkhart General Hospital]

STATEMENT REGARDING PHYSICIAN(S) ON SCENE
Medical Direction from a Physician intervener present at the scene and in physical contact with the patient may be accepted ONLY after ALL of the following criteria have been met:

- Intervener provides appropriate identification
- Confirmation has been received from the base physician
- Communication between intervener and base physician has taken place by radio, land line, or cellular telephone
- Intervener agrees to accompany patient in the ambulance to the hospital

The Base physician may resume control at any time. The EMS provider will not serve as a mediator between intervener and base physician.

**STATEMENT REGARDING MEDICATION SHORTAGES**

Due to the Medication shortages that we have experienced over the past year, and the expectation that this may continue for up to five years, we have listed medications as preferred and acceptable:

- Preferred medications/concentrations should be used when available
- Acceptable medications/concentrations can be used as a back up only if preferred medications are not available from suppliers.

Every effort should be made to make available preferred medications/concentrations. This may mean seeking out alternative suppliers.

*It is important to remember that we must double check the medication we are administering for proper drug and dosage in light of the potential for new or alternative drugs and concentrations. Proper training should take place prior to placing an unfamiliar medication, packaging, concentration, etc. on the emergency vehicle.*

**Our Commitment to EMS in Elkhart County**

The Goshen Hospital and Beacon Health Elkhart General Hospital Protocol Committees will continue to evaluate current EMS and Medical literature to update the protocols to optimize the outcomes of our patients. We will continue to perform QI audits of patient care to develop training programs that will improve care as a whole throughout the region. We hope that these protocols make your job easier, and assist you in the care of your patients.

We would like to thank everyone who provided input that contributed to the 2019 protocols.

Protocol signatures of approval dated this ___1st_day of __Jan____ 2019.

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Cardiac Arrest: Termination of Resuscitation

**EMERGENCY MEDICAL RESPONDER**

**EMT**

**ADVANCED EMT**

- Resuscitative efforts for patients in cardiac arrest should **NOT** be initiated if:
  - Patient presents with significant dependent lividity, rigor mortis, decomposition and/or injuries incompatible with life (such as decapitation)
  - Family presents a signed Out of Hospital DNR (Do Not Resuscitate)
  - Family presents a signed Physician Orders for Scope of Treatment (POST)
  - Health care facility Staff presents a DNR order appropriate to that facility

- For all other patients in cardiac arrest, in whom appropriateness of resuscitation is questionable, the EMS provider MUST start BLS care, including defibrillation while awaiting arrival of a paramedic unit.

**PARAMEDIC**

- Consider Field termination of resuscitation **ONLY** if patient meets **ALL** of the following:
  - Completed protocol appropriate for presenting rhythm with NO response to interventions
  - Non-hypothermic
  - Older than 18 years old unless obvious SIDS case with lividly and rigor mortis
  - No communication failure with family
  - Scene is appropriate for termination order

- Consider “2 minute” warning to give family time to prepare for termination
- If at any time during ALS care, appropriateness of resuscitation is questionable, consult MEDICAL CONTROL physician for assistance.

**Key Points/Considerations**

- Health Care Facilities may have DNR forms appropriate to the level of facility. If identified by the facility staff as correct, these forms should be honored.
**Cardiac Arrest: PEA and Asystole**

### EMERGENCY MEDICAL RESPONDER
- Recognize
- CPR and AED
- Check for DNR
- Perform 2 minute cycles of high quality CPR (hard and fast) Rate should be around 100-120 beats per minute

### EMERGENCY MEDICAL RESPONDER STOP

### EMT
- Secure airway with medically approved non-visualized airway

### EMT STOP

### ADVANCED EMT
- Vascular access IV/IO

### ADVANCED EMT STOP

### PARAMEDIC
- Consider and treat Reversible Causes (H’s and T’s)
- Epinephrine 1:10,000 dose 1 mg IV/IO; repeat every 3 - 5 minutes
  - Optional: Epinephrine 1:1000 may be diluted with 9ml of normal saline.
- Place advanced airway as appropriate after first 8 minutes of CPR
- Refer to the *Cardiac: Termination of Resuscitation* Protocol as needed

### Key Points/Considerations
- IO access should be considered and may be established as initial access for patients in cardiac arrest.
- Do not allow IV/IO access, drug delivery, or advanced airway placement to cause delay > 10 sec. in chest compressions or defibrillation
- Consider and possibly treat contributing factors including: Hypoxia, Hypovolemia, Hypothermia, Hyper-/Hypokalemia, Hydrogen Ion (Acidosis), Tension Pneumothorax, Cardiac Tamponade, Toxins, Thrombosis Coronary and/or Pulmonary
- Waveform Capnography/End-Tidal CO₂ must be used for assessment of chest compression effectiveness, advanced airway placement, and ROSC.
- If sufficient personal, intubation may be performed with limited interruption of CPR.
- Epinephrine needs to given as soon as possible as ROSC is reduced by 4% for every minute you delay giving it.
**Cardiac Arrest: V-Fib / Pulseless V-Tach**

**EMERGENCY MEDICAL RESPONDER**
- Recognize
- CPR and AED
- Check for DNR
- Perform 2 minute cycles of high quality CPR (hard and fast) Rate should be around 100-120 beats per minute

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**
- Secure airway with medically approved non-visualized airway

**EMT STOP**

**ADVANCED EMT**
- Vascular access IV/IO

**ADVANCED EMT STOP**

**PARAMEDIC**
- Consider and treat Reversible Causes (H’s and T’s)
- Epinephrine 1:10,000 dose 1mg IV/IO; repeat every 3-5 minutes
  - Optional: Epinephrine 1:1000 may be diluted with 9ml of normal saline.
- Administer Amiodarone (Cordarone) 300 mg diluted in 30mL NS IV; repeat in 3-5 minutes 150 mg diluted in 15 mL NS
  - If Amiodarone is not available Lidocaine may be used
    - Lidocaine 1-1.5 mg/kg IV/IO
    - For refractory may repeat 0.5-0.75mg/kg IV/IO can repeat every 5-10 min for max of 3 doses or total of 3 mg/kg
- Place advanced airway as appropriate after first 8 minutes of CPR
- Consider: Magnesium sulfate 1-2 grams diluted in 10mL NS IV, for torsade’s de points

**Key Points/Considerations**
- IO access should be considered and may be established as initial access for patients in cardiac arrest.
- If patient in persistent V-Fib or Pulseless V-Tach, consult MEDICAL CONTROL physician for decision to transport or termination of field care
- Defibrillate at manufacturers recommended settings
- Consider and possibly treat contributing factors including: Hypoxia, Hypovolemia, Hypothermia, Hyper-/Hypokalemia, Hydrogen Ion (Acidosis), Tension Pneumothorax, Cardiac Tamponade, Toxins, Thrombosis Coronary and Thrombosis Pulmonary
- Do not allow IV/IO access, drug delivery, or advanced airway placement to cause significant delay in chest compressions or defibrillation
- Waveform Capnography/End-Tidal CO₂ must be used for assessment of chest compression effectiveness, advanced airway placement, and ROSC.
- If sufficient personal, intubation may be performed with limited interruption of CPR.
Cardiac: Acute Coronary Syndrome

**EMERGENCY MEDICAL RESPONDER**
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Have AED available

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**
- Aspirin 324 mg (4 x 81 mg tabs)
  - May withhold aspirin administration if patient has true allergy to ASA
- Assist patient with their own prescribed Nitroglycerin (up to 3 dose maximum), if systolic BP is greater than 90 mmHg
- 12 lead ECG and transmit within 5-10 mins of patient contact

**EMT STOP**

**ADVANCED EMT**
- Vascular access, with blood draw
  - IV access prior to administration of Nitroglycerin
  - Nitroglycerin 0.4mg SL: repeat every 5 min up to 3 doses
  - If systolic BP less than 90 mmHg; Normal Saline 500-1000 mL IV bolus

**ADVANCED EMT STOP**

**PARAMEDIC**
- Notify MEDICAL CONTROL physician AS SOON AS POSSIBLE if STEMI identified
  - If elevation in Leads II, III, aVF check for more than 1mm of ST elevation in V4R. If present, DO NOT give nitroglycerin
- If systolic BP greater than 90 mmHg
  - Nitroglycerin 0.4 mg SL; repeat every 5 minutes to max 3 doses
  - ONLY IF severe chest pain (> 8 on Pain Scale) administer ONE of the following:
    - Morphine 2 - 5 mg IV
    - Fentanyl 25 - 100 mcg slow IV
- Additional IV access as needed while enroute if time permits

**Key Points/Considerations**
- Focus on maintaining ABC, pain relief, rapid ID, rapid notification and rapid transport
- Vitals, including 12 Lead ECG, should be monitored frequently during transport
- Do not administer nitroglycerin if the patient has taken Sildenafil (Viagra) or Vardenafil (Levitra) within the last 6 hours or Tadalafil (Cialis) within the last 48 hours
- Consult MEDICAL CONTROL physician for additional doses of Morphine or Fentanyl
- Consult MEDICAL CONTROL physician for direct transfer to appropriate cardiac facility if needed
**Cardiac: Cardiogenic Shock**

**EMERGENCY MEDICAL RESPONDER**
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Place patient supine unless dyspnea is present

**EMERGENCY MEDICAL RESPONDER**

**EMT**
- 12 lead ECG and transmit

**EMERGENCY MEDICAL RESPONDER / EMT STOP**

**ADVANCED EMT**
- Vascular access, with blood draw
- If no signs of pulmonary edema: Normal Saline 500-1000 mL IV bolus

**ADVANCED EMT STOP**

**PARAMEDIC**
- If patient remains unstable following fluid bolus
  - A 500 cc bolus may be given
    - Check for signs of pulmonary edema, DO NOT give if rales present

  **Optional:**
  - Dopamine infusion 5 mcg/kg/min, titrate to effect, not to exceed 20 mcg/kg/min

**Key Points/Considerations**
- UNSTABLE is defined as systolic BP less than 90 mmHg and/or decreased level of consciousness
- Refer to appropriate Dysrhythmia protocol as needed
- Monitor lung sounds if present hold/stop fluid bolus
**Cardiac: Wide Complex Tachycardia with a Pulse**

**EMERGENCY MEDICAL RESPONDER**
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Have AED available

**EMERGENCY MEDICAL RESPONDER**

**EMT**
- 12 lead ECG and transmit

**EMT STOP**

**ADVANCED EMT**
- Vascular access, with blood draw

**ADVANCED EMT STOP**

**PARAMEDIC**

- **UNSTABLE**
  - Refer to *General: Procedural Sedation* protocol if time permits
  - *Synchronized* cardioversion; repeat to max 3 times
    - If cardioversion fails, follow drug regiment for STABLE patient
- **STABLE**
  - Preferred:
    - Amiodarone (Cordarone) 150 mg in 100 mL NS infused over 10 minutes (10mL/min); repeat if VT recurs
    - If rhythm is converted: Amiodarone (Cordarone) 1 mg/min IV infusion
  - Acceptable:
    - Procainamide 20 mg/min slow IV infusion to max 17 mg/kg
    - If rhythm is converted: Procainamide 1-4 mg/min IV infusion
- Magnesium Sulfate 2 grams dilute in 10mL NS over 5-10 minutes IV push for Torsade de Pointes

**Key Points/Considerations**
- UNSTABLE is defined as ventricular rate greater than 150 bpm with symptoms of chest pain, dyspnea, altered mental status, pulmonary edema, or hypotension (systolic BP less than 90 mmHg)
- Wide Complex is defined as a QRS complex greater than 0.12 seconds
- Cardioversion at manufacturers recommended setting
- Consider Adenosine *only* if regular and monomorphic – Initial dose 6mg, 2nd dose 12mg
## Cardiac: Narrow Complex Tachycardia

### EMERGENCY MEDICAL RESPONDER
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Have AED available

### EMT
- 12 lead ECG and transmit

### EMT STOP

### ADVANCED EMT
- Vascular access, with blood draw
- Valsalva Maneuvers

### ADVANCED EMT STOP

### PARAMEDIC

#### IF UNSTABLE
- Refer to General: Procedural Sedation protocol if time permits
- Synchronized cardioversion; repeat to max 3 times
  - If cardioversion fails, follow rhythm appropriate drug regimen for STABLE patient

#### IF STABLE
- **REGULAR** Rhythm:
  - Adenosine (Adenocard) 6 mg rapid IV push followed by 20ml NaCl bolus
  - Adenosine (Adenocard) 12 mg rapid IV push; repeat 1-2 minutes 12 mg
- **IRREGULAR** Rhythm: (Atrial Flutter or Atrial Fibrillation)
  - Ventricular rate greater than 150 bpm
    - Cardizem (Diltiazem HCL) Lyo-Ject 0.10 mg/kg slow IV push over 2 minutes, may repeat in 15 min 1 time if BP >110 SBP
  - Ventricular rate less than 150 bpm
    - Consult MEDICAL CONTROL physician for order: Cardizem (Diltiazem HCL) Lyo-Ject 0.10 mg/kg slow IV push over 2 minutes

#### Consider Wolff-Parkinson-White (WPW) if HR over 220 and young age
- AVOID Adenosine and Cardizem
- Preferred:
  - Amiodarone (Cordarone) 150 mg diluted in 15 mL NS IV over 10 min
- Acceptable:
  - Procainamide 20 mg/min; max 17 mg/kg

### Key Points/Considerations
- UNSTABLE is defined as ventricular rate greater than 150 bpm with symptoms of chest pain, dyspnea, altered mental status, pulmonary edema, or hypotension (systolic BP less than 90 mmHg)
- Cardioversion at manufacturers recommended setting
### Cardiac: Symptomatic Bradycardia / Heart Blocks

#### EMERGENCY MEDICAL RESPONDER
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Have AED available

#### EMT
- 12 lead ECG and transmit

#### EMT STOP

#### ADVANCED EMT
- Vascular access, with blood draw
- A 500 – 1000cc fluid bolus may be given if no signs of Pulmonary edema

#### ADVANCED EMT STOP

#### PARAMEDIC
- Consider and treat Reversible Causes (H’s and T’s)
- Atropine 0.5 mg IV; repeat every 3-5 min to max 3 mg
- Begin transcutaneous pacing if atropine is ineffective
  - Refer to General: Procedural Sedation protocol as needed
- If Hypotensive,
  - A 500 cc bolus may be given, if no signs of pulmonary edema, if dopamine not available
- Consider immediate pacing for 2nd degree Type II or 3rd degree Heart Blocks
- Optional: Dopamine infusion 5 mcg/kg/min, titrate to effect, not to exceed 20 mcg/kg/min

#### Key Points/Considerations
- Bradycardia is rate less than 60 bpm, but symptomatic is generally less than 50 bpm
- Only treat bradycardia if patient is symptomatic
- Use atropine with caution in ACS
- Symptomatic presentation includes chest pain, dyspnea, altered mental status, pulmonary edema, ischemia, infarction or hypotension (systolic BP less than 90 mmHg)
- Consider and possibly treat contributing factors including: Hypoxia, Hypovolemia, Hypothermia, Hyper-/Hypokalemia, Hydrogen Ion (Acidosis), Tension Pneumothorax, Cardiac Tamponade, Toxins, Thrombosis- Coronary and Pulmonary
GENERAL MEDICAL EMERGENCIES

General: Nausea and/or Vomiting

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<th>PARAMEDIC</th>
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<td>• Preferred:</td>
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<tr>
<td>o Ondansetron (Zofran) ODT 4-8 mg SL</td>
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<tr>
<td>o Ondansetron (Zofran) 4 mg IV or IM; may repeat once in 10 minutes</td>
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<td>• Acceptable:</td>
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<td>o Promethazine (Phenergan) 25 mg IM ONLY</td>
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Key Points/Considerations

• Consult MEDICAL CONTROL physician if patient has any of the following: systolic BP less than 90, pregnancy, or head trauma
General: Pain Management

**EMERGENCY MEDICAL RESponder**
- ABC
- Apply appropriate oxygen therapy
- Vital signs

**EMERGENCY MEDICAL RESponder**
**EMT**
- 12 lead ECG and transmit

**EMT STOP**

**ADVANCED EMT**
- Vascular access, with blood draw

**ADVANCED EMT STOP**

**PARAMEDIC**
- Administer ONE of the following narcotic analgesics
  - Morphine 2 - 5 mg IV,IM; repeat every 5 min to max 10 mg
  - Dilaudid 0.5 - 1 mg IV/IM max of 1 mg
  - Fentanyl 25-100 mcg slow IV,IN; repeat every 5 min to max 200 mcg
  - Toradol 30 mg IV or 60 mg IM one time only
    - Do not give to elderly or those with renal failure.
    - Also do not give if allergic to NSAIDs
- Ondansetron (Zofran) 4 mg IV or IM, if patient becomes nauseated OR
- Ondansteron (Zofran) 4mg ODT SL

**Key Points/Considerations**
- For patients with:
  - Severe burns without hemodynamic compromise
  - Suspected isolated extremity injuries with severe pain
  - Abdominal pain/ back pain: new onset. Caution with those with chronic pain issues or behavior that is concerning for drug diversion (Addiction)
- For all other painful conditions, paramedics must consult MEDICAL CONTROL physician for orders
- Contraindications to pain management protocol: altered mental status, hypoventilation, systolic BP less than 90, other traumatic injuries
- This protocol may NOT be used in conjunction with the General: Procedural Sedation protocol, unless MEDICAL CONTROL physician is consulted.
- Fentanyl should be used if there is any concern for potential hemodynamic instability.
- Consult MEDICAL CONTROL physician for additional Morphine, Fentanyl, Dilaudid or Zofran
**General: Patient Agitation**

**EMERGENCY MEDICAL RESPONDER**

**EMT**
- Call for Law Enforcement
- ABC
- Apply appropriate oxygen therapy
- Vital signs

**EMERGENCY MEDICAL RESPONDER / EMT STOP**

**ADVANCED EMT**
- Vascular access, with blood draw if possible and safe for provider

**ADVANCED EMT STOP**

**PARAMEDIC**
- May administer **ONE** of the following:
  - Midazolam (Versed) 2 - 5 mg IV, IM, IN
  - Lorazepam (Ativan) 1 - 2 mg IN, IM: IV dilute in equal amount NS slow IV push; repeat every 5 minutes to max 4 mg
  - Valium (diazepam) 5 mg IV, IM, IN
  - Benadryl 25-50mg IV, IM for possible Synthetic THC
    PO acceptable for IV/IM shortages

  For Acutely Psychotic Patients ONLY
  - Haldol 5mg IM (not for elderly or trauma patients)

**Key Points/Considerations**
- **If the patient is in police custody and/or has handcuffs on, they will not be transported by EMS without an officer present in ambulance or following directly behind Ambulance**
- Patient must NOT be transported in a face-down position
- For patients at risk of causing physical harm to emergency responders, the public and/or themselves
- EMS personnel may only apply “soft restraints” such as towels, cravats or commercially available soft medical restraints
- Haldol can cause prolongation of QT, which can lead to arrhythmia and death. Use with caution in those with known heart conditions
General: Procedural Sedation

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

- Vascular access, with blood draw

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor with continuous pulse oximetry
- May use pain protocol for pain management
- Cardioversion administer **ONE** of the following
  - Midazolam (Versed) 2 – 5 mg slow IV push; titrate to desired effect max 10mg
  - Etomidate (Amidate) 0.1 mg/kg IV; max 40 mg
- Transcutaneous pacing
  - Midazolam (Versed) 2 – 5 mg slow IV push; titrate to desired effect max 10mg
- Post Intubation (systolic BP greater than 100) administer **ONE** of the following
  - Midazolam (Versed) 0.05 mg/kg IV; repeat every 5 minutes to max of 10mg
  - Etomidate (Amidate) 0.1 mg/kg IV Max 40 mg
  - Fentanyl 50-100mcg IV may repeat every 5 min up to 200 mcg max.
- CPAP/BiPAP sedation administer **ONE** of the following
  - Midazolam (Versed) 1 – 2 mg slow IV push
  - Lorazepam (Ativan) 0.5 - 1 mg IV dilute in equal amount NS slow IV push

Key Points/Considerations

- Contact medical control for additional pain or nausea medications
**Medical: Allergic Reaction / Anaphylaxis**

**EMERGENCY MEDICAL RESPONDER**
- ABC Vital signs
- Apply appropriate oxygen therapy

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**
- Administer Adult Epi Pen
  - May use the 1:1000 prefilled syringe or draw up vial 0.3 mg

**EMT STOP**

**ADVANCED EMT**
- Vascular access, with blood draw; Normal Saline 500-1000 mL IV bolus as needed
- For wheezing
  - Albuterol 2.5 mg via nebulizer; repeat once
- For severe reaction with stridor (call Medical Control)
  - Epinephrine 1:1000 dose 0.01 mg/kg (0.3 mg max) SQ

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac Monitor
- **Asymptomatic**
  - Supportive care
- **Mild symptoms**: Urticaria, itching, nasal congestion, watery eyes, etc.
  - Diphenhydramine (Benadryl) 50 mg IV or deep IM, (PO acceptable)
- **Moderate symptoms**: Wheezing, nausea, vomiting, diarrhea, flushing, swelling face, neck, tongue
  - DuoNeb (Albuterol 2.5 mg + Atrovent 0.5 mg in 2.5 mL mixed together), via nebulizer: *if not effective then proceed to next step >*
    - Albuterol 2.5 mg via nebulizer; repeat once
  - Famotidine (Pepcid) 20 mg IV
  - Methylprednisolone (Solu-Medrol) 125 mg IV, IM if no IV access
- **Severe reaction** not relieved by initial treatment or patient presenting with Stridor, hypotension (systolic BP less than 90 mmHg), and/or Altered Mental Status
  - If BLS airway maneuvers fail, attempt less invasive ALS methods then attempt ETI. *Cricothyotomy may be considered only after all other Airway interventions have been exhausted.*
  - Administer ONE of the following:
    - Terbutaline (Brethine) 0.3 mg SQ
    - **If NO significant cardiac history**: Epinephrine 1:10,000 dose 0.01 mg/kg (0.3 mg max) IV IF no other Epi Given.

- Key Points/Considerations
- **If Epi has been administered you must call Medical Control before given more epi.**
## Medical: Diabetic Emergencies

### Emergency Medical Responder
- **ABC**
- Apply appropriate oxygen therapy
- Vital signs

#### Emergency Medical Responder Stop

### EMT
- Check Blood Glucose level
- If blood glucose is known or suspected to be low less than normal range 60-80mg/dl and patient is able to swallow on command, give oral glucose one unit dose
- Call for ALS Intercept if patient is unable to swallow on command, or mental status is altered.

#### EMT Stop

### Advanced EMT
- Vascular access, with blood draw
- Blood glucose level below normal range 60-80 mg/dL and signs and symptoms of hypoglycemia
  - Use one of the following:
    - Dextrose 50% 25 grams IV; repeat 10 minutes
    - Dextrose 10% 15 grams IV; titrate to effect not to exceed 25 grams
    - Dextrose 5% 7.50 grams IV; titrate to effect not to exceed 25 grams
  - Unable to obtain vascular access, Glucagon 1 mg IM, SQ
- Blood glucose level above 400 mg/dL
  - Normal Saline 500-1000mL IV bolus

### Key Points/Considerations
- If the patient has a history of CHF, the fluid bolus is contraindicated
- If the patient has taken sugar prior to arrival, ensure that the patient has not taken sugar substitute
Medical: Overdose or Toxic Exposure

**EMERGENCY MEDICAL RESPONDER**
- Opiate OD: Naloxone 2mg IN give 1ml in each nostril; For respiratory depression only
- Decontaminate as needed
- ABC, apply appropriate oxygen therapy, and vital signs
- Attempt to determine what was taken, when, and how much, bring containers to ED
- Contact Poison Control 1-800-222-1222 for additional information and treatment

**EMERGENCY MEDICAL RESPONDER**

**EMT**
- Check blood glucose level normal range 60-80mg-dl, If level is abnormal refer to Medical: Diabetic Emergencies protocol.
- 12 lead and transmit

**EMT STOP**

**ADVANCED EMT**
- Vascular access, with blood draw,
  - Opiate OD: Naloxone (Narcan) 0.5 mg IV, IM; repeat to max 2 mg for respiratory depression ONLY

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac monitor
- For symptomatic patients with known:
  - Organophosphate poisoning: Atropine 2 – 5 mg IV; repeat every 3-5 minutes
  - Dystonic reaction or synth THC: Diphenhydramine (Benadryl) 50 mg IV,IM, (PO Acceptable)
  - Calcium channel blocker OD: Glucagon 1 mg IM, SQ
  - Beta blocker OD: Glucagon 1 mg IM, SQ
  - Tricyclic antidepressant OD: Sodium Bicarbonate 1 mEq/kg IV
  - Sympathomimetic OD (cocaine/amphetamines): Midazolam (Versed) 2 - 5 mg IV, IM, IN

**Key Points/Considerations**
- Includes patients who are unconscious/unresponsive without suspected trauma or other causes
- Use caution with cancer patients, may be on large amounts of narcotics due to chronic pain.
- Dystonic reaction is uncontrolled muscle contractions of face, neck or tongue. Dystonic reactions may result from an allergic reaction to: Phenergan, Compazine, Haldol
- Be prepared to restrain patient after administration of Naloxone (Narcan). Don’t give to intubated patients
- Medics should be called for any OD
- Signs and symptoms of organophosphate poisoning consider SLUDGE
  - Salivation, Lacrimation, Urination, Diarrhea, Gastric cramps, Emesis
**Medical: Seizures**

### EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

### EMT

- Check blood glucose level normal range 60-80mg-dl, If level is abnormal refer to Medical: Diabetic Emergencies protocol.

### EMERGENCY MEDICAL RESPONDER / EMT STOP

### ADVANCED EMT

- Vascular access, with blood draw

### ADVANCED EMT STOP

### PARAMEDIC

- Cardiac Monitor
- Preferred
  - Lorazepam (Ativan) 1 - 2 mg IN, IV dilute in equal amount NS slow IV push; repeat every 5 minutes to max 4 mg
  - Midazolam (Versed) 2 mg slow IV push; May repeat in 5 minutes
  - If vascular access cannot be obtained may give ONE of the following:
    - Lorazepam (Ativan) 1-2 mg IM, IN; repeat every 5 minutes to max 4 mg
    - Midazolam (Versed) 5 mg IM, IN
- Acceptable
  - Diazepam (valium) 5 mg slow IV; repeat 2 – 5 minutes to max 10 mg
    - If vascular access cannot be obtained may give Diazepam (valium) 5 mg slow IM, or IN with nasal atomizer

### Key Points/Considerations

- Protect the patient and EMS crew from injury during the seizure
- Refer to the Eclampsia protocol if patient is pregnant or recently post partum
**Medical: Shock / Hypoperfusion**

<table>
<thead>
<tr>
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<tbody>
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</tr>
<tr>
<td>• Apply appropriate oxygen therapy</td>
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<tr>
<td>• Vital signs</td>
</tr>
<tr>
<td>• Place patient in supine position unless dyspnea is present</td>
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<tr>
<td>• Cover the patient to maintain body temperature</td>
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<tr>
<th><strong>EMT</strong></th>
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<tbody>
<tr>
<td>• 12 lead ECG and transmit</td>
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<tr>
<th><strong>EMT STOP</strong></th>
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<tr>
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<tr>
<td>• Vascular access, with blood draw</td>
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<tr>
<td>• If no pulmonary edema (rales): Normal Saline 500 - 1000mL bolus IV</td>
</tr>
<tr>
<td>• Cardiac Monitor</td>
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<tr>
<td>• Obtain additional vascular access as time permits</td>
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<tr>
<th><strong>ADVANCED EMT STOP</strong></th>
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<th><strong>PARAMEDIC</strong></th>
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<tr>
<td>• A second 500 cc bolus may be given, if no signs of pulmonary edema</td>
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Optional If available
- Dopamine infusion 5 mcg/kg/min, titrate to effect, not to exceed 20 mcg/kg/min

**Key Points/Considerations**
- Additional fluid bolus can be administered but patient needs to be reassessed for rales or signs of pulmonary edema.
- UNSTABLE is defined as Systolic BP less than 90 mmHg and/or decreased level of consciousness
- Monitor for signs and symptoms of pulmonary edema
- Consider causes of hypoperfusion, including anaphylaxis, toxic ingestions, cardiac rhythm disturbances, myocardial infarction, sepsis, ruptured AAA, ectopic pregnancy, trauma, or others
## Medical: Heat/Cold Related Illness

### EMERGENCY MEDICAL RESPONDER
- ABC
- Remove from the heat source or cold environment
- Remove all clothing
- If skin is hot and dry, cover with wet sheets
- If skin is cold and wet, cover with dry sheets
- Use air conditioning, fans, heater as needed
- Consider heat/cold packs under armpits, in groin, and on neck
- Apply appropriate oxygen therapy
- Vital signs

### EMT MEDICAL RESPONDER STOP

#### EMT
- 12 Lead ECG and transmit

### EMT STOP

#### ADVANCED EMT

#### PARAMEDIC
- Large bore IV; Normal Saline 500 - 1000mL IV bolus
  - Consider warmed fluids for cold emergencies

### Considerations
- Patient may exhibit Altered Mental Status (AMS), dry and/or hot skin, excessive diaphoresis or extremely dry skin
- Remember that certain medications or drugs may produce heat illness
- If patient in cardiac arrest, follow AHA guidelines
- Monitor for signs and symptoms of pulmonary edema
**Medical: Suspected Stroke**

**EMERGENCY MEDICAL RESPONDER**

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Determine the exact time of symptom onset and/or last time seen without symptoms by interviewing patient, family, and bystanders
- If time from symptom onset to ETA to ED will be less than 6 hours **then**
  - NOTIFY MEDICAL CONTROL physician ASAP to prepare for possible thrombolytic therapy

Call **CODE STROKE** *if less than 6 hours*
Call **STROKE ALERT** to *medical control if 6-24 hours*

Do fast ED if greater than 6 hours time of onset and if score is 4 or higher
Then recommend going to Memorial Hospital for possible Thrombectomy

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**

- Check blood glucose level normal range 60-80mg-dl, If level is abnormal refer to *Medical: Diabetic Emergencies* protocol.
- 12 Lead ECG and transmit

**EMT STOP**

**ADVANCED EMT PARAMEDIC**

- Vascular access, with blood draw

**Key Points/Considerations**

Cincinnati Pre-Hospital Stroke Scale:
1. Have the patient repeat “You can’t teach an old dog new tricks”. Assess for correct use of words, without slurring
2. Have the patient smile, assess for facial droop
3. Have the patient close eyes and hold arms straight out for 10 seconds. Assess for arm drift or unequal movement of one side

Fast ED app may be used to look for possible large vessel Occlusion that may warrant thrombectomy (clot removal)
Medical: Epistaxis (non-traumatic)

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- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Have patient sit forward and blow nose to remove any small loose clots
- Have patient hold head forward pinching the nostrils anteriorly OR apply nasal clamp device. (*Do not allow patient to lean head backwards*)

![Stop](image)

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<tr>
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- Administer 2 sprays oxymetazoline (Afrin) in each nostril
**RESPIRATORY EMERGENCIES**

*Respiratory: Acute Asthma and Status Asthmaticus*

### EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

#### EMERGENCY MEDICAL RESPONDER STOP

### EMT

- Assist patient with their own meter dose inhalation medications as appropriate
- 12 Lead ECG and transmit

#### EMT STOP

### ADVANCED EMT

- Vascular access, with blood draw
- Albuterol 2.5 mg via nebulizer; may repeat once
- Call for ALS intercept
- Epinephrine 1:1000 dose 0.3 – 0.5 mg IM, if severe distress (call MC for order)

#### ADVANCED EMT STOP

### PARAMEDIC

- Consider starting CPAP for moderate to severe distress.
- DuoNeb (Albuterol 2.5 mg + Atrvent 0.5 mg in 2.5 mL mixed together), via nebulizer once only, may repeat albuterol 2.5 mg once
- Methylprednisolone (Solu-Medrol) 125 mg IV, IM if no IV access
- If SEVERE (*Status Asthmaticus*):
  - Magnesium Sulfate 1-2 grams dilute in 10mL NS over 5-10 minutes IV push
  - Terbutaline (Brethine) 0.3 mg **SQ, if not effective then**
- ONE of the following:
  - Epinephrine 1:1000 dose 0.3 – 0.5 mg IM, if severe distress
  - Epinephrine 1:1000 dose 0.5 mg mixed with 3 mL Normal Saline, via nebulizer
  - Epinephrine 1:10,000 dose 0.5 mg IV

### Key Points/Considerations

- Remember, “All that wheezes is not asthma!” Consider allergic reaction, airway obstruction, Congestive Heart Failure, pulmonary edema, COPD exacerbation, Acute Pulmonary Hypertension
- Caution in using Epinephrine for patients with history of CAD.
### Respiratory: Acute Pulmonary Edema

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<td>- Vital signs</td>
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<td>- Sit patient upright, if possible</td>
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**EMERGENCY MEDICAL RESPONDER STOP**

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<td>- Nitroglycerin 0.4 mg; repeat every 3 - 5 minutes, if systolic BP greater than 90 mmHg</td>
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**ADVANCED EMT STOP**

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### Key Points/Considerations

- All patients with rales do not have pulmonary edema — consider the possibility of pneumonia or chronic obstructive pulmonary disease (COPD) exacerbation
- Do not administer nitroglycerin if the patient has taken medications such as Sildenafil (Viagra) or Vardenafil (Levitra) within the last 6 hours or Tadalafil (Cialis) within the last 48 hours
Respiratory: COPD Exacerbation

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<td>• Methylprednisolone (Solu-Medrol) 125 mg IV, IM if no IV access</td>
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<tr>
<td>o Please start early as it takes time for the drug to reach full potential</td>
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**Respiratory: Medication Facilitated Intubation**

**PARAMEDIC**

- **PARAMEDIC ONLY**

**INDICATIONS**

- Medication Facilitated Intubation may be utilized on standing orders when definitive airway control is necessary in an adult and requires the use of sedative medication or use of a neuromuscular blockade agent by approved services only.

**DRUG ASSISTED INTUBATION**

- Cardiac Monitor and pulse oximetry
- Lidocaine 1.5 mg/kg (100 mg max) – wait 60 seconds (for head injury patients only)
- Preferred:
  - Administer Etomidate (Amidate) 0.4 mg/kg (40 mg max) rapid IV push
- Acceptable:
  - Versed 3-5 mg IV to achieve sedation
- Intubate if sufficient sedation has been achieved or proceed to next step
- Administer Succinylcholine 1.5 mg/kg (150 mg max) IV
  - Onset of action 1 minute
  - Duration 5 - 8 minutes
- Intubate
- If intubation fails (2 attempts maximum) manage the airway and ventilate
  - Consider inserting a medically approved non-visualized airway device
  - If unable to adequately ventilate the patient, perform Cricothyrotomy only as a last resort when all other Airway interventions have failed.
- Attach an EtCO2 monitor, confirm ETT placement (confirm by waveform and quantitative analysis) and secure the ETT
- Document all ETI attempts and a minimum of 2 EtCO2 Waveform and Quantitative levels. Provide a Code Summary (if using Physio Monitors) for the Patient Care Record.
- Refer to General: Procedural Sedation protocol as needed

**Key Points**

- Be cautious with the use of Succinylcholine in patients with eye injuries, long standing crush injuries and skeletal muscle myopathy, most frequently Duchene’s muscular dystrophy.
- Pre-oxygenation and oxygenation are important when possible.
- Consider Atropine 0.5 IV for Bradycardia
**Trauma Transport Guidelines**

**EMERGENCY MEDICAL RESPONDER**
**EMT**
**EMT BA/ADVANCED EMT**
**PARAMEDIC**

- Assess patient according to the *Field Triage Guidelines of Injured Patients*
- Airway or ventilation concerns that cannot be adequately stabilized by available EMS providers for the anticipated transport time to a level I/II Trauma Center should be transported to the closest appropriate acute care facility.
- Patients meeting Steps 1 or 2 should be transported to nearest Level I / II Trauma Center
  - Via Ground Transport if less than 45 minutes:
  - Via Aeromedical Transport if ground transport time more than 45 minutes:

- Exceptions in which patient should be transported via ground to the closest appropriate facility:
  - Air transport time greater than 45 minutes
  - Weather or other local conditions prohibit air travel to the scene or to the closest Level I or II Trauma Center
  - Scene wait time for aeromedical transport provider would exceed time required to transport the patient to the closest appropriate acute care facility by ground. In this situation the air medical provider may be diverted to the receiving acute care facility.
  - Patients in cardiac arrest at the scene after blunt trauma should not be transported via aeromedical transport.
  - Patients meeting Step 3 and 4 criteria

**Key Points**
- This is a guideline and is not intended to specifically define every condition in which transport decisions concerning ground transport vs. air medical services may be needed. Good clinical judgment should be used at all times.
- The helicopter can be requested to respond to the scene when:
  - ALS personnel request the helicopter
  - BLS personnel request the helicopter, when ALS is delayed or unavailable.
- When EMS arrives, they must assess the situation. If it is determined by the most highly trained EMS provider ON THE SCENE that the helicopter is not needed, it should be cancelled as soon as possible.

REFER TO LANDING ZONE LIST BY TOWNSHIP
Field Triage Guidelines of Injured Patients

2011 Guidelines for Field Triage of Injured Patients

1. Measure vital signs and level of consciousness:
   - Glasgow Coma Scale: ≤13
   - Systolic Blood Pressure (mmHg): <80
   - Respiratory Rate: <10 or >29 breaths per minute, or need for ventilatory support (≤20 in infants aged <1 year)

   [Decision: Assess anatomy of injury]

2. Assess anatomy of injury:
   - All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee
   - Chest wall instability or deformity (e.g. flail chest)
   - Two or more proximal long-bone fractures
   - Crushed, degloved, mangled, or pulseless extremity
   - Amputation proximal to wrist or ankle
   - Pelvic fractures
   - Open or depressed skull fracture
   - Paralysis

   [Decision: Transport a trauma center, steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the defined trauma system.]

3. Assess mechanism of injury and evidence of high-energy impact:
   - Falls
     - Adults: >20 feet (one story is equal to 10 feet)
     - Children: >10 feet or two or three times the height of the child
   - High-risk auto crash
     - Impalement, including roof: >12 inches occupant seat; >18 inches any site
     - Ejection (partial or complete) from automobile
     - Death to same passenger compartment
     - Vehicle telemetry data consistent with a high risk of injury
   - Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
   - Motorcycle crash >20 mph

   [Decision: Transport to a trauma center, which, depending upon the defined trauma system, need not be the highest level trauma center.]

4. Assess special patient or system considerations:
   - Older Adults
     - Risk of injury/increase increases after age 65 years
     - SBP <110 may represent shock after age 65
     - Low impact mechanisms (e.g., ground level falls) may result in severe injury
   - Children
     - Should be triaged preferentially to pediatric capable trauma centers
   - Anticoagulants and bleeding disorders
     - Patients with head injury are at high risk for rapid deterioration
   - Burns
     - Without other trauma mechanism: triage to burn facility
     - With trauma mechanism: triage to trauma center
   - Pregnancy >28 weeks
   - EMS provider judgement

   [Decision: Transport according to protocol]

When in doubt, transport to a trauma center.

Find the plan to save lives, at www.cdc.gov/fieldtriage

National Center for Injury Prevention and Control
Division of Injury Response

ELKHART COUNTY EMS PATIENT CARE PROTOCOLS ver. 2019.01.01 Page 28
Landing Zones

Bristol:
1. BRIS1 Raber Golf Course SR 120
2. BRIS2 Bristol Elementary School
3. BRIS3 York Elementary School, SR 120 and CR 35
4. BRIS4 RV/MH Hall of Fame, CR17 Executive Drive

Clinton Township:
1. MILL1 Rock Run Church, CR 38 and CR 33
2. MILL2 Woodlawn Christian School Ball Field, CR 34 and CR 37
3. MILL3 Clinton Christian School, CR 35 and SR 4
4. MILL4 Amish School Ball Field, CR 30 and CR 37

Concord Township:
1. CONC1 Concord High School
2. CONC2 Concord East Side Elementary School
3. CONC3 Farmers Market, SR 19 and CR 26

Elkhart Township/Goshen Fire Department:
1. GOSH1 Goshen Airport
2. GOSH2 Grace Community Church, CR 36 and CR 21
3. GOSH3 Elkhart County Fairgrounds – farthest east parking lot
4. GOSH4 Brenneman Memorial Church, SR 15 and Goshen City north limits

Foraker:
1. FORK1 Nappanee Airport
2. FORK2 Union Center Church, 70535 CR 11
3. FORK3 Salem Mennonite Church, 23984 CR 46
4. FORK4 Ball Fields, 24647 CR 44

Jefferson Township:
1. JEFF1 Kropf SR 15 and CR 20
2. JEFF2 Marshland US 20 and CR 27
3. JEFF3 Crossroads Church CR 18 and CR 17

Harrison Township:
1. HARR1 Mount Moriah Worship Center, CR 30 between CR 15 and CR 13
2. HARR2 Goshen Evangelical Church, CR 17 south of CR 28
3. HARR3 Harrison Township Fire Department Station #2, CR 40 and CR 9

Middlebury:
1. MIDD1 Essenhaus Maintenance Building – entrance to covered bridge
2. MIDD2 Griner Church, CR 20 and SR 13
3. MIDD3 Living Stones Fellowship, CR 4 and SR 13
4. MIDD4 York Elementary School, SR 120 and CR 35
Landing Zones (continued)

Osolo:
1. OSOL1 Elkhart Airport
2. OSOL2 Osolo EMS, 25600 CR 4
3. OSOL3 RV Museum, US80/90 and CR 17

Baugo Township:
1. BAUG1 Baugo Fire Station 57955 CR 3 – between CR 20 and CR 118
2. BAUG2 Mishawaka Pilots Club, 29580 CR 20 – between Ash Rd and CR 1

Elkhart:
1. ELKH1 NIBCO soccer fields, 700 Riverview Ave
2. ELKH2 Northside Middle School, 300 Lawrence
3. ELKH3 Elkhart Airport, CR 6 – between John Weaver Pkwy and CR 7

Nappanee:
1. NAPP1 Nappanee Airport 41d 44’ 21” N 85d 56’ 18” W
2. NAPP2 Northwood High School 41d 27’ 40” N 86d 00’ 90” W
3. NAPP3 West Park 41d 28’ 48” N 86D 00’ 24” N

Wakarusa:
1. WAKA1 Northwood Middle School, 207 N. Elkhart – between CR 40 and CR 3
2. WAKA2 Olive Mennonite Church Cemetery, 61081 CR 3 – between CR 30 and CR 28
3. WAKA3 Twin Oaks Church, CR 44 – between SR 19 and CR 3

New Paris:
1. NEWP1 New Paris Grade School, CR 46 - west of CR 25
2. NEWP2 Bethany Church, SR 6 - west of CR 123
3. NEWP3 Pamida Store, SR 13 – south of Elkhart/Kosciusko County Line
4. NEWP4 Benton Grade School, CR 31 – south of CR 44
Trauma: Burns

EMERGENCY MEDICAL RESPONDER

- Stop the burning. Remove any clothing, jewelry, etc.
- ABC
- High Flow Oxygen 12-15 lpm via NRB
- Vital signs
- Consult MEDICAL CONTROL physician for direct transport to a Burn Center via aeromedical transport service if needed
- Use dry sterile dressings or appropriate specialized burn dressings
- Avoid wetting the patient due to the danger of hypothermia
- Burns to the eye require copious irrigation with Normal Saline — do not delay irrigation

EMERGENCY MEDICAL RESPONDER STOP

EMT

- 12 lead ECG and transmit

EMT STOP

ADVANCED EMT

- Vascular access at 2 sites, with blood draw; Normal saline 500 - 1000mL

ADVANCED EMT STOP

PARAMEDIC

- Cardiac monitor
- If patient has signs of airway involvement be prepared to intubate
- Refer to General: Pain Management protocol as needed
- May start parkland formula if time allows

Key Points/Considerations

- Be alert for other injuries, including cardiac dysrhythmias
- Be alert for smoke inhalation.
- Assure 100% oxygen. Oxygen saturation readings may be falsely elevated.
- If hazardous materials involved, notify the destination hospital immediately to allow for decontamination
- When considering total area of a burn, DO NOT count first degree burns
- Burns are only to be dressed with simple sterile dressings.
- Consider Cyanide Toxicity and Carbon Monoxide poisoning
- Parkland Formula, 4ml x %BSA x weight KG : Half given in first 8 hrs
Trauma: Burn Rule of Nines

Key Points/Considerations

- Head = 9% (front and back)
- Back = 18%
- Chest = 18%
- Right arm = 9%
- Left arm = 9%
- Perineum = 1%
- Right leg = 18%
- Left leg = 18%

Adult
**Trauma: Chest Trauma**

**EMERGENCY MEDICAL RESPONDER**

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- If sucking chest wound, cover with occlusive dressing; if dyspnea increases release the dressing momentarily during exhalation

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**

- 12 lead ECG and transmit

**EMT STOP**

**ADVANCED EMT**

- Vascular access, with blood draw; use the side opposite the injury if possible
- Refer to *Trauma: Hypoperfusion / Hypovolemia* protocol for fluid administration

**ADVANCED EMT STOP**

**PARAMEDIC**

- Cardiac monitor
- Needle decompression if patient has signs and symptoms consistent with *Tension Pneumothorax AND hemodynamic compromise*
  - Needle decompression
  - Prepare (14 ga. Catheter or larger, alcohol prep/Betadine)
  - Locate 2nd intercostal space midclavicular line
    - Alternate site 5th intercostal space mid-axillary line
  - Cleanse area with alcohol prep or Betadine
  - Insert catheter over top of rib and into the interspace
  - Advance catheter until air escapes
  - Remove the needle and leave catheter in place with a one way valve in place
- Refer to *General Pain Management* protocol as needed

**Key Points/Considerations**

- Begin transportation as soon as possible and perform ALS treatment enroute to the hospital
- Signs and symptoms of a Tension Pneumothorax: Absent lung sounds on one side, extreme dyspnea, jugular vein distention (JVD), cyanosis (even with 100% oxygen), tracheal deviation AND hypotension
- Hemodynamic compromise is defined: hypotension, narrowed pulse pressures and tachycardia
- Thoracic decompression is a serious medical intervention that requires a chest tube in the hospital
- Consider aeromedical transport for severe multi-system trauma
**Trauma: Crush Injuries**

**EMERGENCY MEDICAL RESPONDER**

- ABC
- Apply appropriate oxygen therapy
- Vital signs every 5 minutes

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**

- 12 lead and transmit

**EMT STOP**

**ADVANCED EMT**

- Vascular access at 2 sites, with blood draw; Normal saline 500 - 1000mL IV bolus as needed

**ADVANCED EMT STOP**

**PARAMEDIC**

- Cardiac Monitor
- If one complete extremity crushed more than 2 hours or two extremities crushed more than 1 hour:
  - Sodium Bicarbonate 50 mEq IV
  - One minute prior to extrication: Sodium Bicarbonate 50 mEq IV
- Refer to *General Pain Management* protocol as needed

**Key Points/Considerations**

- Contact the aeromedical transport at scene if anticipated prolonged extrication.
- Use one dedicated IV for Sodium Bicarbonate, the other IV for all other medications
- After extrication immobilize the extremity and apply cold therapy. Do not elevate the extremity.
- If patient needs Rapid Sequence Intubation (RSI), use caution with Succinylcholine
- If Paramedics will be on scene in a reasonable amount of time, wait for extrication
**Trauma: Eye Injuries**

**EMERGENCY MEDICAL RESPONDER**

**EMT**

**ADVANCED EMT**

- ABC
- Apply appropriate oxygen therapy
- Determine type of injury
- Have patient remove contacts if possible
- Irrigate affected eye as needed
- Vital Signs

**EMERGENCY MEDICAL RESPONDER / EMT/ ADVANCED EMT STOP**

**PARAMEDIC**

- Administer 1-2 drops tetracaine (Pontocaine) every 5 minutes as needed for pain
- 
  - DO Not administer if there is an open globe injury or the pupils are not equal in shape (ie: Tear drop)

**Key Points/Considerations**

- Do not allow eye injury to distract from other serious injury
- Do not remove foreign body imbedded in eye or orbit
- Stabilize protruding foreign body
- Exert no pressure on globe at any time
- If patient tolerates cover both eyes to minimize further trauma
- A tear drop shaped pupil indicates possible open globe injury. **DO NOT TOUCH EYE or APPLY MEDICATIONS**
**Trauma: Hypoperfusion / Hypovolemia**

### EMERGENCY MEDICAL RESPONDER
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Consider use of a tourniquet – refer to Key Points/Considerations section listed below

### EMERGENCY MEDICAL RESPONDER STOP

### EMT
- 12 lead and transmit

### EMT STOP

### ADVANCED EMT
- Vascular access, with blood draw;
- Permissive hypotension: only give fluids for BP<90 SBP refrain from excessive amounts of saline due to clotting factor wash out. May administer 500cc bolus

### ADVANCED EMT STOP

### PARAMEDIC
- Cardiac monitor: Optional if Available
- Consult MEDICAL CONTROL physician for Dopamine infusion 5 mcg/kg/min, titrate to effect, not to exceed 20 mcg/kg/min

### Key Points/Considerations
- A falling BP is a LATE sign of shock

### TOURNIQUETS

#### INDICATIONS
- A tourniquet or B/P Cuff should be used to control potentially fatal hemorrhagic wounds only after other means of stopping blood loss have failed

#### PRECAUTIONS
- A tourniquet applied incorrectly can increase blood loss and lead to death
- Damage is unlikely if the tourniquet is removed within an hour. Low risk to tissue is acceptable over death secondary to hypovolemic shock
- A commercially made tourniquet is the only acceptable tourniquet to be used

#### TECHNIQUE
- Attempt to control hemorrhage using direct pressure, elevation and indirect pressure on pressure points prior to considering the application of a tourniquet
- The tourniquet should never be obscured by clothing or bandages
- Apply tourniquet proximal to the wound and NOT across any joints
- Tighten tourniquet until bleeding stops
- Mark time and date of application on patient’s skin or on the tourniquet. Use permanent marker.
- Keep tourniquet on throughout hospital transport – a correctly applied tourniquet should only be removed by the receiving hospital
**Mechanism of Injury**

**Positive Mechanism:**
- High Speed MVC
- Fall 3x Patient Height
- Axial Load
- Diving Accident
- Penetrating Wound in/near Spinal Column
- Sports Injury to Head/Neck
- Unconscious Trauma Patient

**Uncertain:**
Apply manual stabilization until exam completed

**Spinal Pain or Tenderness**

**Motor and Sensory Exam**

**Normal**

**Reliable Patient?**

**Yes, Reliable:**
- Calm
- Cooperative
- Sober
- Alert
- No Distracting Injuries

**Immobilization NOT Required**

**NOT RELIABLE:**
- Intoxication
- Acute Stress Reaction
- Head/Brain Injury
- Altered Mental Status
- Distracting Injuries

**Possible Spinal Injury**

**IMMOBILIZE**
PEDIATRIC EMERGENCIES

- For these protocols, pediatric patients are defined as children having not yet reached puberty (underarm hair development in males and breast development in females)
- Procedures for EMS Providers are only for the following clinical situations:
  - Cardiac or Respiratory Arrest
  - Cardiac Dysrhythmias (Bradycardia, Tachycardia)
  - Asthma/Acute Bronchospasm
  - Anaphylaxis/Allergic Reaction
  - Seizures
  - Pain Management
  - Sedation
  - Nausea and Vomiting
  - Overdose
  - Diabetic Emergencies
  - Major Trauma
  - Burns
  - Hypoperfusion
- In all other clinical situations you must consult Medical Control physician
- Have a Broselow Pediatric Tape or similar device available to accurately determine the correct medication dosage
- Pediatric Medication Dosages **SHOULD NOT EXCEED** adult dosages
- Normal Vital Signs for Infants and Children:

<table>
<thead>
<tr>
<th>Age</th>
<th>Respirations</th>
<th>Pulse</th>
<th>Systolic BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborn</td>
<td>30 – 60</td>
<td>100 - 180</td>
<td>&gt;60</td>
</tr>
<tr>
<td>Infant (&lt; 1 year)</td>
<td>30 – 60</td>
<td>100 - 160</td>
<td>&gt;60</td>
</tr>
<tr>
<td>Toddler (1 – 3 years)</td>
<td>24 – 40</td>
<td>90 - 150</td>
<td>&gt;70</td>
</tr>
<tr>
<td>Preschooler (3 – 5 years)</td>
<td>22 – 34</td>
<td>80 - 140</td>
<td>&gt;75</td>
</tr>
<tr>
<td>School-aged (6 – 8 years)</td>
<td>18 – 30</td>
<td>70 - 120</td>
<td>&gt;80</td>
</tr>
</tbody>
</table>
### Pediatric Trauma: Hypoperfusion / Hypovolemia

**EMERGENCY MEDICAL RESPONDER**
- ABC
- Apply appropriate oxygen therapy
- Vital signs

**EMT STOP**

**ADVANCED EMT**

**EMT STOP**

**PARAMEDIC**
- Cardiac monitor
- Vascular access; Normal Saline 20 mL/kg IV bolus, may repeat once

**Key Points/Considerations**
- Diagnostic criteria for UNSTABLE includes: capillary refill time greater than 2 seconds, cool, clammy or mottled skin, inability to recognize parents, restlessness, listlessness, tachycardia, tachypnea, systolic BP less than 70 mmHg (2 years and older) or systolic BP less than 60 mmHg (less than 2 years old).
- A falling BP is a LATE sign of shock
**Pediatric Trauma: Burns**

**EMERGENCY MEDICAL RESPONDER**
- Stop the burning. Remove any clothing, jewelry, etc.
- ABC
- High Flow Oxygen 12-15 lpm via NRB
- Vital signs
- Use dry sterile dressings or appropriate specialized burn dressing.
- Avoid wetting the patient due to the danger of hypothermia
- Burns to the eye require copious irrigation with Normal Saline — do not delay irrigation

**EMERGENCY MEDICAL RESPONDER**

**EMT**

**EMT STOP**

**ADVANCED EMT**
- Vascular access at 2 sites; Normal saline 20 mL/kg IV bolus, may repeat once

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac Monitor
- If patient has signs of airway involvement be prepared to intubate
- See *Pediatric: Pain Management* protocol

**Key Points/Considerations**
- Be alert for other injuries, including cardiac dysrhythmias
- Be alert for smoke inhalation.
- Assure 100% oxygen. Oxygen saturation readings may be falsely elevated.
- If hazardous materials, notify the destination hospital immediately to allow for decontamination
- When considering total area of a burn, DO NOT count first degree burns
- Burns are only to be dressed with simple sterile dressings.
- Consider Cyanide Toxicity and Carbon Monoxide poisoning
- Parkland Formula, 4ml x %BSA x weight KG : Half given in first 8 hrs
Pediatric Trauma: Burn Rule of Nines

<table>
<thead>
<tr>
<th>Key Points/Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back = 18% (front and back)</td>
</tr>
<tr>
<td>Head = 18%</td>
</tr>
<tr>
<td>Chest = 18%</td>
</tr>
<tr>
<td>Right arm = 9%</td>
</tr>
<tr>
<td>Left arm = 9%</td>
</tr>
<tr>
<td>Perineum = 1%</td>
</tr>
<tr>
<td>Right leg = 13.5%</td>
</tr>
<tr>
<td>Left leg = 13.5%</td>
</tr>
</tbody>
</table>

Child
**Pediatric Cardiac Arrest: Asystole or PEA**

**EMERGENCY MEDICAL RESPONDER**
- Recognize CPR and AED
- Perform 2 minute cycles of high quality CPR (hard and fast)

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**

**EMT STOP**

**ADVANCED EMT**
- Vascular access; Normal Saline 20 mL/kg IV/IO bolus as needed

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac montior
- Consider and treat Reversible Causes (H’s and T’s) as appropriate
- Epinephrine 1:10,000 dose 0.01 mg/kg IV; repeat every 3-5 minutes
  - Optional: Epinephrine 1:1000 may be diluted with 9ml of normal saline
- Place advanced airway as appropriate
  - Use Broselow tape for proper sizing and dosages of drugs
  - Use pediatric sedation protocol for continuous sedation if needed.

**Key Points/Considerations**
- Consult MEDICAL CONTROL physician and begin transport to the closest most appropriate hospital as soon as possible
- Confirm asystole in more than 1 lead
- Do not interrupt compressions for placement of an advanced airway during the first 8 minutes of CPR
- Consider and possibly treat contributing factors including: Hypoxia, Hypovolemia, Hypothermia, Hyper-/Hypokalemia, Hydrogen Ion (Acidosis), Tension Pneumothorax, Cardiac Tamponade, Toxins, Thrombosis Coronary and Thrombosis Pulmonary
- Epinephrine needs to be given as soon as possible as ROSC is reduced by 4% for every minute you delay giving it.
- Broselow tape should be used to assure proper dosing of drugs. Over 36kg use adult dosage for drugs
**Pediatric Cardiac Arrest: V-Fib / Pulseless V-Tach**

**EMERGENCY MEDICAL RESPONDER**
- Recognize
- CPR and AED
- Perform 2 minute cycles of high quality CPR (hard and fast)

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**

**EMT STOP**

**ADVANCED EMT**
- Vascular access; Normal Saline 20 mL/kg IV/IO bolus, as needed

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac monitor
- Consider and treat Reversible Causes (H’s and T’s) as appropriate
- Initial defibrillation at 2 J/kg, repeat every two minutes at 4 J/kg
- Epinephrine 1:10,000 dose 0.01 mg/kg IV/IO; repeat every 3 – 5 minutes
  - Optional: Epinephrine 1:1000 may be diluted with 9ml of normal saline
- Administer Amiodarone (Cordarone) 5 mg/kg (dilute in NS 1.5 mg/mL) IV
- Place advanced airway when appropriate
  - Use Broselow tape for proper sizing and dosages of drugs
  - Use pediatric sedation protocol for continuous sedation if needed

**Key Points/Considerations**
- Consult MEDICAL CONTROL physician and begin transport to the closest hospital as soon as possible
- Do not interrupt compressions for placement of an advanced airway during the first 8 minutes of CPR
- Use the small (pediatric) pads for patients less than 10 kg
- V-fib cardiac arrest is rare in children. Consider toxic ingestions including tricyclic antidepressants.
- Broselow tape should be used to assure proper dosing of drugs. Over 36kg use adult dosage for drugs
## Pediatric Cardiac: Bradycardia

### EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- If heart rate is less than 60 bpm and patient’s mental status and respiratory rate are decreased, ventilate with BVM
- Start CPR (if no improvement with ventilations)

**EMERGENCY MEDICAL RESPONDER STOP**

### EMT

- 12 lead and transmit

**EMT STOP**

### ADVANCED EMT

- Vascular access; Normal Saline 20 mL/kg IV bolus, as needed

**ADVANCED EMT STOP**

### PARAMEDIC

- Cardiac monitor
- Consider and treat Reversible Causes (H’s and T’s) as appropriate
- Epinephrine 1:10,000 dose 0.01 mg/kg IV/IO; repeat every 3-5 minutes
  - Optional: Epinephrine 1:1000 may be diluted with 9ml of normal saline
- If bradycardia is due to increased vagal tone or primary AV block give atropine before giving epinephrine
  - Atropine 0.02 mg/kg (0.1 mg min dose) IV/IO; repeat 5 minutes to max 0.04 mg/kg
- Transcutaneous pacing
  - Refer to Pediatric: Procedural Sedation protocol
- Place advanced airway as appropriate

### Key Points/Considerations

- Consult MEDICAL CONTROL physician as soon as possible
- Definition: Newborn/Infant bradycardia -- pulse less than 80 bpm; child over 1 year of age bradycardia -- pulse less than 60 bpm
- Symptomatic includes poor systemic perfusion, hypotension, respiratory difficulty or altered level of consciousness
- Do not treat asymptomatic bradycardia. Consult MEDICAL CONTROL physician.
### Pediatric Cardiac: Tachycardia

**EMERGENCY MEDICAL RESPONDER**
- ABC
- Apply appropriate oxygen therapy
- Vital signs

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**
- 12 lead and transmit

**EMT STOP**

**ADVANCED EMT**
- Vascular access, Normal Saline 20 mL/kg IV bolus, as needed
  - Valsalva Maneuvers

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac monitor
- **UNSTABLE**
  - Synchronized cardioversion 0.5 – 1.0 J/kg; repeat 2 J/kg if unsuccessful
    - Refer to *Pediatric: Procedural Sedation* protocol
- **STABLE Wide QRS:**
  - Administer Amiodarone (Cordarone) 5 mg/kg (dilute in NS 1.5 mg/mL) IV over 20 minutes
- **STABLE Narrow QRS:**
  - Adenosine (Adenocard) 0.1 mg/kg IV
    - May repeat in 1-2 minutes at 0.2 mg/kg IV

**Key Points/Considerations**
- Consult MEDICAL CONTROL physician as soon as possible
- Newborn/Infant SVT if pulse greater than 220 bpm; child over 1 year of age SVT if pulse greater than 180 bpm, with no discernable p-waves
- UNSTABLE includes cardio-respiratory compromise, hypotension, or altered level of consciousness
- The most common causes of Sinus Tachycardia in children are fever and dehydration
- Do not treat asymptomatic tachycardia. Consult MEDICAL CONTROL physician.
**Pediatric: Acute Asthma**

### EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Determine if patient has been given his/her own asthma medications

### EMERGENCY MEDICAL RESPONDER STOP

### EMT

- Assist with patient prescribed metered dose inhaler
- 12 lead and transmit

### EMT STOP

### ADVANCED EMT

- Albuterol 2.5 mg via nebulizer
  - Call Medical Control for,
- Epinephrine 1:1000 dose 0.01 mg/kg SQ (0.5 mg max), if in severe distress

### ADVANCED EMT STOP

### PARAMEDIC

- Cardiac monitor
- DuoNeb (Albuterol 2.5 mg + Atrovent 0.5 mg) via nebulizer *if not effective then proceed to next step;*
- Albuterol 2.5 mg via nebulizer
- If patient not improving, obtain vascular access
- Methylprednisolone (Solu-Medrol) 1-2 mg/kg IV, IM if no IV access
- May administer one of the following:
  - Epinephrine 1:1000 dose 0.01 mg/kg IM (0.5 mg max), if in severe distress
  - Racemic Epinephrine 1:1000 dose 0.5 mg mixed with 3 mL Normal Saline
  - Terbutaline (Brethine) 0.005 – 0.01 mg/kg (0.3 mg max) SQ (only for >6yo)
- Consider Magnesium Sulfate 50 mg/kg (2 g max) IV

### Key Points/Considerations

- Consult MEDICAL CONTROL physician as soon as possible
- Absence of breath sounds can be indicative of status asthmaticus. Be prepared for imminent respiratory arrest
**Pediatric: Anaphylaxis / Allergic Reaction**

**EMERGENCY MEDICAL RESPONDER**

- ABC
- Apply appropriate oxygen therapy
- Vital signs

**EMERGENCY MEDICAL RESPONDER STOP**

**EMT**

- Determine if patient has been given his/her own Epi Pen
- BLS administer Epi Pen Jr.
  - May use the 1:1000 prefilled syringe or draw up vial 0.15mg

**EMT STOP**

**ADVANCED EMT**

- Vascular access; Normal Saline 20 mL/kg IV bolus as needed
- Albuterol 2.5 mg via nebulizer
- Consult MEDICAL CONTROL for administration of:
- Epinephrine 1:1000 dose 0.01 mg/kg IM (0.5 mg max), if in severe distress

**ADVANCED EMT STOP**

**PARAMEDIC**

- Cardiac Monitor
- **Asymptomatic**
  - Supportive care
- **Mild symptoms: Urticaria, itching, nasal congestion, watery eye**
  - Diphenhydramine (Benadryl) 1 – 2 mg/kg (25 mg max) IV or IM or PO
- **Moderate symptoms: Wheezing, nausea, vomiting, diarrhea, flushing, swelling face, neck, tongue**
  - DuoNeb (Albuterol 2.5 mg + Atrovent 0.5 mg), via nebulizer *if not effective then proceed to next step*;
  - Albuterol 2.5 mg via nebulizer
  - Methylprednisolone (Solu-Medrol) 1 - 2 mg/kg IV
  - Pepcid (Famotidine) 0.5 mg/kg IV (20 mg max)
- **Severe reaction not relieved by initial treatment or patient presenting with Stridor, hypotension (systolic BP less than 90 mmHg), and/or Altered Mental Status**
  - If BLS airway maneuvers fail, intubate, if unable to intubate perform needle Cricothyrotomy (patients <8yrs) *only as a last resort when all other Airway interventions have failed.*
  - Cardiovascular collapse: Epinephrine 1:10,000 dose 0.01 mg/kg (0.5 mg max) IV/IO
- If no IV, Epinephrine 1:1000 dose 0.01 mg/kg (0.5 mg max) SQ

- **Consult MEDICAL CONTROL physician as soon as possible**

**Key Points/Considerations**

- If an EMT has administered an Epi Pen, or the patient has administered their own epinephrine auto injector, consult MEDICAL CONTROL physician prior to administering additional epinephrine subcutaneously or allowing a patient to refuse medical treatment.
- It is not appropriate to sign off a patient when they have been given Epinephrine
**Pediatric: Diabetic Emergencies**

### EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

### EMT

- Check Blood Glucose level normal range 60-80mg-dl
- If blood glucose is known or suspected to be low and patient is able to swallow on command, give oral glucose one unit dose
- Call for ALS Intercept if patient is unable to swallow on command, or mental status is altered.

### EMT STOP

### ADVANCED EMT

### PARAMEDIC

- If blood glucose below normal range 60-80 and patient is showing signs and symptoms of hypoglycemia:

<table>
<thead>
<tr>
<th>Patient’s Age</th>
<th>Amount of Dextrose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year old</td>
<td>D10 – 0.5 gm/kg IV</td>
</tr>
<tr>
<td>1 – Puberty</td>
<td>D25 – 0.5 gm/kg IV</td>
</tr>
</tbody>
</table>

Optional:
- If D10 or D25 not available may use D5
  - 10cc/kg of weight IV

- Glucagon 1 mg IM, SQ (if unable to establish IV access)
- If blood glucose if above 400 and if signs of dehydration are present, fluid bolus:
  - 0 - 1 year old 10 mL/kg, may repeat
  - 1 – Puberty 20 mL/kg, may repeat

### Key Points/Considerations

- Consult MEDICAL CONTROL physician as soon as possible
- To make D10, add 12cc of D50 into 50ml NS
### Pediatric: Hypoperfusion

<table>
<thead>
<tr>
<th><strong>EMERGENCY MEDICAL RESPONDER</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• ABC</td>
</tr>
<tr>
<td>• Apply appropriate oxygen therapy</td>
</tr>
<tr>
<td>• Vital signs</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Key Points/Considerations</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Consult MEDICAL CONTROL physician as soon as possible</td>
</tr>
<tr>
<td>• For patients with hypovolemia due to bleeding, vomiting, diarrhea or septic shock.</td>
</tr>
<tr>
<td>• Consult MEDICAL CONTROL physician if you suspect cardiogenic shock.</td>
</tr>
<tr>
<td>• Diagnostic criteria for hypotension includes: capillary refill time greater than 2 seconds, cool, clammy or mottled skin, inability to recognize parents, restlessness, listlessness, tachycardia, tachypnea, systolic BP less than 70 mmHg (2 years and older) or systolic BP less than 60 mmHg (less than 2 years old).</td>
</tr>
</tbody>
</table>
**Pediatric: Nausea and/or Vomiting**

**EMERGENCY MEDICAL RESPONDER**
- ABC
- Apply appropriate oxygen therapy
- Vital signs

**EMT**

**EMT STOP**

**ADVANCED EMT**
- Vascular access; Normal Saline 20 mL/kg IV bolus, as needed

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac Monitor
- Ondansetron (Zofran) 0.1 mg/kg IV/IM/ODT (minimum dose 2 mg for ODT)
  - Patient age should be greater than 6 months of age

**Key Points/Considerations**
- Consult MEDICAL CONTROL physician as soon as possible
**Pediatric: Overdose or Toxic Exposure**

**EMERGENCY MEDICAL RESPONDER**
- For opiate overdose: Naloxone administer intranasal Narcan
- Decontamination as needed
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Determine what was taken, when and how much, if possible

**EMERGENCY MEDICAL RESPONDER**

**EMT**
- Check blood glucose level normal range 60-80mg-dl, If level is abnormal refer to *Medical: Pediatric Diabetic Emergencies* protocol.
- Consider contacting Poison Control 1-800-222-1222 for additional information and treatment options
- 12 lead ECG and transmit

**EMT STOP**

**ADVANCED EMT**
- Vascular access
- Opiate overdose: Naloxone (Narcan) 0.1 mg/kg IV, IM, SQ; Repeat to max 2 mg

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac monitor
- For *symptomatic* patient with:
  - Organophosphate poisoning: Atropine 1 mg IV; repeat every 3 – 5 minutes until secretions dry
  - Dystonic reaction: Diphenhydramine (Benadryl) 1 mg/kg (25 mg max) IV,IM,PO
  - Beta blocker OD: Glucagon 1 - 2 mg IM
  - Sympathomimetic ingestion (cocaine/amphetamine): Midazolam (Versed) 0.1 mg/kg IV or IM
  - Calcium channel blocker OD: Glucagon 1 - 2 mg IM (if hypotensive, 5 mL/kg NS bolus)
  - Tricyclic Antidepressants: Sodium Bicarb 1 mEq/kg if wide complex arrhythmia and prolonged QRS duration (if hypotensive, 10 mL/kg NS bolus)

**Key Points/Considerations**
- Consult MEDICAL CONTROL physician as soon as possible
- Dystonic reaction is uncontrolled contractions of face, neck or tongue
- Cocaine/Methamphetamine signs and symptoms: Seizures, hypertension, tachycardia
- Signs and symptoms of organophosphate poisoning consider SLUDGE
  - Salivation, Lacrimation, Urination, Diarrhea, Gastric cramps, Emesis
Pediatric: Pain Management

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

- Vascular access

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor
- Administer ONE of the following narcotic analgesics
  - Morphine 0.05 mg/kg IV or IM; repeat once to max 0.1 mg/kg
  - Fentanyl 0.5 – 1 mcg/kg Slow IV, IM, or IntraNasal (IN)
  - Dilauidid 0.01mg/kg IV or IM. Max 0.5 mg (greater than 2 yo)
- Ondansetron (Zofran) 0.1 mg/kg IV/ODT/IM, if patient becomes nauseous (minimum dose 2 mg for ODT)

Key Points/Considerations

- Consult MEDICAL CONTROL physician as soon as possible
- For patients with:
  - Severe burns without hemodynamic compromise
  - Suspected isolated extremity injuries, fractures or dislocations with severe pain
  - Abdominal pain
  - Back pain
- For all other painful conditions, providers must consult MEDICAL CONTROL physician for orders
- Contraindications to pain management protocol: altered mental status, hypoventilation, hypotension, other traumatic injuries
- This protocol may NOT be used in conjunction with the Pediatric: Procedural Sedation protocol, unless MEDICAL CONTROL physician is consulted.
- Consult MEDICAL CONTROL physician for additional pain or nausea medication
**Pediatric: Procedural Sedation**

**EMERGENCY MEDICAL RESPONDER**
- ABC
- Apply appropriate oxygen therapy
- Vital signs

**EMERGENCY MEDICAL RESPONDER**

**EMT STOP**

**ADVANCED EMT**
- Vascular access

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac Monitor
- Administer **ONE** of the following narcotic analgesics
  - Morphine 0.05 mg/kg IV or IM; repeat once to max 0.1 mg/kg
  - Dilaudid 0.01 mg/kg IV or IM; max of 0.5mg (greater than 2 yo)
  - Fentanyl 0.5 – 1 mcg/kg Slow IV, IN, IM
- Administer **ONE** of the following benzodiazepines (sedative)
  - Midazolam (Versed) 0.05 mg/kg IV, IN, IM (max 2 mg)
  - Lorazepam (Ativan) 0.05 mg/kg IV, IN, IM (max 2mg)

**Key Points/Considerations**
- Consult MEDICAL CONTROL physician as soon as possible
- Consult MEDICAL CONTROL physician for additional pain or nausea medication
**Pediatric: Seizures**

**EMERGENCY MEDICAL RESPONDER**
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- If child is warm, remove blanket or loosen clothing

**EMERGENCY MEDICAL RESPONDER**

**EMT**
- Check blood glucose level, normal range 60-80mg-dl, if level is abnormal refer to *Pediatric: Diabetic* protocol. **DO NOT DELAY TREATMENT OF SEIZURE TO OBTAIN BGL**

**EMT STOP**

**ADVANCED EMT**
- Vascular access

**ADVANCED EMT STOP**

**PARAMEDIC**
- Cardiac Monitor
  Give *one* of the Following
  - (Ativan) 0.1 mg/kg IV, IM, IN (max 2 mg)
  - Midazolam (Versed) 0.05 mg/kg IV, IM, IN (max 2 mg)
  - Valium (Diazepam) 0.1 mg/kg IV,IM,IN (max 5 mg)
- Place advanced airway as appropriate

**Key Points/Considerations**
- Consult MEDICAL CONTROL physician as soon as possible
- Protect the patient and EMS crew from injury during the seizure
- Paramedic may assist the patient’s family or caregivers with administration of seizure medications rectally
- IN administration of benzodiazepines is as effective as IV
OB/Gyn: Childbirth

**EMERGENCY MEDICAL RESponder**

**EMT**

**EMT BA/ADVANCED EMT**

**PARAMEDIC**

### Management of a Normal Delivery

- Support the baby’s head over the perineum.
- If the membranes cover the head after it emerges, tear the sac with your fingers or forceps to permit escape of the amniotic fluid. Suction meconium in amniotic fluid if baby is in respiratory distress. Suction oropharynx then nostrils with a bulb syringe. Depress the bulb syringe before placing in the baby’s mouth or nose.
- Gently guide the head downward until the shoulder appears. The other shoulder is delivered by gentle upward traction. The infant’s face should be upward at this point.
- If the cord is around the neck and cannot be easily removed, clamp it with two clamps, cut the cord between the clamps, and unwrap the cord from around the neck. This is an emergency, as the baby is no longer getting any oxygen either through the cord or by breathing.
- Clamp the umbilical cord, >60 seconds after birth, with a clamp at 4 inches and one at 6 inches from umbilicus and cut the cord between them.
- Assess APGAR score. See APGAR Chart on page 2 of OB/Gyn protocol.

### Management of a Breech Delivery

- Support the buttocks or extremities until the back appears.
- Grasp the baby’s **ILIAC WINGS** and apply gentle downward traction. **DO NOT** pull on the legs or back, as this may cause spine dislocation or adrenal hemorrhage.
- Gently move the infant’s body in the direction of least resistance. By moving anteriorly and posteriorly, both shoulders should deliver posteriorly.
- Splint the humerus bones with your two fingers and apply gentle traction with your fingers.
- Gentle downward compression of the uterus will assist in head delivery. Swing the legs upward until the body is in a vertical position. This will permit delivery of the head.

### Management of Prolapsed Cord or Limb Presentation

- Place the mother in a face-up position with hips elevated
- Place a gloved hand in the vagina and attempt to hold the baby’s head away from the cord.
- Keep the cord moist using a sterile dressing and sterile water
- Transport as soon as possible
OB/Gyn: Childbirth (continued)

APGAR Score

- Score should be recorded at 1 minute and 5 minutes after birth
- Do not withhold resuscitation efforts to determine APGAR score

<table>
<thead>
<tr>
<th>SIGN</th>
<th>0</th>
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<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Appearance</td>
<td>Blue, pale</td>
<td>Body pink, extremities blue</td>
<td>Completely pink</td>
</tr>
<tr>
<td>P - Pulse</td>
<td>Absent</td>
<td>Below 100 bpm</td>
<td>Above 100 bpm</td>
</tr>
<tr>
<td>G - Grimace</td>
<td>No response</td>
<td>Grimace</td>
<td>Vigorous cry</td>
</tr>
<tr>
<td>(flick soles of feet)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A - Activity</td>
<td>Limp</td>
<td>Some flexion</td>
<td>Active motion</td>
</tr>
<tr>
<td>(muscle tone)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R - Respirations</td>
<td>No effort</td>
<td>Weak, irregular</td>
<td>Strong cry</td>
</tr>
</tbody>
</table>

Key Points

- Determine the estimated date of expected birth, the number of previous pregnancies and number of live births
- Determine if the amniotic sac (bag of waters) has broken, if there is vaginal bleeding or mucous discharge, or the urge to bear down.
- Determine the duration and frequency of uterine contractions
- Examine the patient for crowning. If delivery is not imminent, transport as soon as possible. If delivery is imminent, prepare for an on-scene delivery.
- If multiple births are anticipated but the subsequent births do not occur within 10 minutes of the previous delivery transport immediately.
- After delivery of the placenta gently massage the uterus
- Bring the placenta and any other tissue to the hospital for inspection
- Suction meconium if baby is not vigorous (depressed respirations, depressed muscle tone, and/or a heart rate less than 100 bpm)
- If baby is born with meconium and has a normal respiratory effort, normal muscle tone, and a heart rate greater than 100 bpm, use bulb syringe to suction mouth and nose. (Mouth before Nose)
**OB/Gyn: Eclampsia**

**EMERGENCY MEDICAL RESPONDER**

- ABC
- Apply appropriate oxygen therapy
- Vital signs

**EMERGENCY MEDICAL RESPONDER**

**EMT**

- Check blood glucose level normal range 60-80mg-dl, if level is abnormal refer to *Medical: Diabetic Emergencies* protocol.

**EMT STOP**

**ADVANCED EMT**

- Vascular access, with blood draw

**ADVANCED EMT STOP**

**PARAMEDIC**

- Cardiac Monitor
- If patient is seizing administer Magnesium Sulfate 4 gm over 2 minutes IV (IM buttock if unable to establish IV)
- No response, administer Versed 2 – 5 mg IV

**Key Points/Considerations**

- Pre-eclampsia is defined as BP greater than 140/90 in a pregnant patient (or one who has recently given birth) with severe headache, confusion and/or hyper-reflexia
- Eclampsia includes the above information and includes seizure activity
- Females should be considered pregnant up to 6 weeks after delivery
**OB/Gyn: Pre-term Labor (24 – 37 weeks)**

**EMERGENCY MEDICAL RESPONDER**
- ABC
- Apply appropriate oxygen therapy
- Vital signs

**EMT STOP**

**ADVANCED EMT**
- Vascular access, with blood draw; Normal Saline 500-1000mL IV bolus as needed

**EMT STOP**

**PARAMEDIC**
- Cardiac Monitor

**Key Points/Considerations**
- Transport to the closest appropriate hospital
- Notify destination hospital ASAP
- If patient unwilling to go to closest hospital, consult MEDICAL CONTROL physician for assistance in determining appropriate destination
GUIDELINES,
PROCEDURES
AND
ADDITIONAL
INFORMATION
Procedure: Airway Management

FIRST RESPONDER

- Oxygen therapy: The goal of oxygen therapy is to achieve adequate tissue oxygenation using the lowest possible FiO₂
  - Non-rebreather mask 12 - 15 lpm, NRB
  - Nasal cannula, 2 - 6 lpm
  - Nasopharyngeal and/or Oropharyngeal airways
  - BVM assisted ventilation

FIRST RESPONDER STOP

EMT

ADVANCED

- Medically approved non-visualized airway
  - LMA
  - King Airway

EMT / ADVANCED STOP

PARAMEDIC

- Oral endotracheal intubation in unresponsive Adults and Pediatric patients
  - Waveform and Quantitative Capnography must be used and documented with all intubated patients
- Continuous Positive Airway Pressure (CPAP) or Bi-Level Positive Airway Pressure (BiPAP)
- Medication facilitated intubation
- Surgical airway procedure: (older than 8 yo)
  - Prepare (scalpel, size 6 ET tube or smaller, alcohol preps, and hemostat)
  - Cleanse site, make a vertical ½ inch incision through skin and cricothyroid membrane
  - Insert knife handle and rotate 90 degrees, insert hemostat, spread the opening
  - Insert a size 6 ET tube and inflate cuff
  - Attached BVM and ventilate
  - Observe for signs of subcutaneous emphysema, severe hemorrhage, and poor oxygenation
- Pediatric Needle cricothyrotomy (Less than 8 yo)
  - Prepare (alcohol preps, 14 ga IV catheters, 22mm connector, 3 cc syringe)
  - Extend head and place towel under shoulders
  - Locate spot by marking location with fingernail, cleanse side, insert 14 ga IV catheter, remove needle
  - Attach 22mm connector from a small ET tube or 3 cc syringe to normal ET tube
  - Secure catheter and reassess patient

Procedure: Airway Management (continued)
Key Points

- Oxygen therapy: The goal of oxygen therapy is to achieve adequate tissue oxygenation using the lowest possible FIO₂ with consideration for other respiratory function effectors (i.e., CO₂ levels, Hypoxic Drive, etc.)
- Always have a BVM available when using a portable transport ventilator.
- Intubation may be attempted on a patient 2 times. If unsuccessful, utilize a medically approved non-visualized airway or ventilate with BVM.
- A cervical collar should be placed on all intubated patients to assist secure placement of the airway device.
- Re-confirm endotracheal placement after any patient transfer with at least two assessments and continuous Waveform/Quantitative Capnography documentation.
**Procedure: Endotracheal Intubation**

- Airway control for unresponsive adults and pediatric patients.
- Confirm endotracheal tube placement with at least two assessment techniques.
- Capnography must be used and placed within 1 minute of Intubation.
- Cervical collar placement should be used to assist in secure tube placement.
- If unsuccessful after two (2) attempts, place a non-visualized airway for airway control.

**LEMON Airway Assessment**

The score with a maximum of 10 points is calculated by assigning 1 point for each of the following LEMON criteria:

- **L** = Look externally (facial trauma, large incisors, beard or moustache, large tongue)
- **E** = Evaluate the 3-3-2 rule (incisor distance-3 finger breadths, hyoid-mental distance-3 finger breadths, thyroid-to-mouth distance-2 finger breadths)
- **M** = Mallampati (Mallampati score > 3).
- **O** = Obstruction (presence of any condition like epiglottitis, peritonsillar abscess, trauma).
- **N** = Neck mobility (limited neck mobility)

*Patients in the difficult intubation group have higher LEMON scores.*
**Procedure: Cricothyrotomy**

**PARAMEDIC**

**INDICATIONS**
- Severe Respiratory Distress in which oropharyngeal and nasopharyngeal intubation attempts have failed.
- Can not intubate, can not ventilate and ALL OTHER RESCUE AIRWAY DEVICES FAIL

**ABSOLUTE CONTRAINDICATIONS**
- Patient can safely be orotracheally or nasotracheally intubated
- Child less than 8 years of age

**CONTRAINDICATIONS**
- Fracture of larynx

**PROCEDURE**
1. Gather Equipment
   - Scalpel
   - Size 6 ET tube or smaller
   - Alcohol prep pads
   - Hemostat
2. Locate incision site
3. Cleanse site
4. Make a vertical ½ inch incision through skin
5. Make small horizontal incision through cricoid membrane
6. Insert hemostats and spread opening
7. Insert ETT and inflate cuff
8. Attach BVM and ventilate
9. Assess:
   a. Breath sounds
   b. Signs of subcutaneous emphysema
   c. Hemorrhage
   d. Poor Oxygenation

Illustrations showing initial, subcutaneous and membranous incisions (dashed lines) for a surgical cricothyrotomy.
**Procedure: Pediatric Needle Cricothyrotomy**

<table>
<thead>
<tr>
<th>PARAMEDIC</th>
</tr>
</thead>
</table>
| 1. Prepare equipment  
  a. Alcohol prep pads  
  b. 14g IV catheter  
  c. 22mm connector  
  d. 3cc syringe |
| 2. Extend head |
| 3. Place towel under shoulders |
| 4. Locate spot, mark with fingernail |
| 5. Cleanse site |
| 6. Insert 14g catheter, remove needle |
| 7. Attach 22mm connector from small ETT |
| 8. Ventilate |
| 9. Secure catheter and reassess |

Any pre assembled Kit including the trocar version quick crich is acceptable. **Please make sure your department practices what they have.**
Procedure: *Intraosseous Access*

**Advance EMT/Paramedic**

**Indications**
1. Immediate venous access for delivery of fluids, drugs or blood products in children, ages 0-7 years of age including neonates
2. Reliable access site for emergent or resuscitative situations where peripheral venous access is unobtainable

**Contraindications**
1. Open fracture at proposed insertion site
2. Skin infection at proposed insertion site

**Materials**
1. Gloves
2. Prep solution
3. IV solution and tubing
4. Disposable 16- or 18-gauge intraosseous needle
5. Optional: lidocaine 1% for local anesthesia, with 25- or 27-gauge needle on a 3 cc syringe
6. Gauze, tape

**Pre-procedure patient education**
1. Obtain informed consent
2. Inform patient (or parent/guardian) of the possibility of major complications and their treatment
3. Explain the major steps of the procedure

**Procedure**
1. Assess need for placement of an intraosseous line, and obtain consent if appropriate.
2. Identify landmarks: don gloves; prepare IV tubing and fluid
3. Use prep solution to cleanse the skin over the insertion site
4. If appropriate, infiltrate skin and periosteum over insertion site with 1 cc of the lidocaine 1% using the 25- or 27-gauge needle with the 3 cc syringe
5. Open the intraosseous needle
6. Insert the needle through the skin at the selected insertion site, and advance until you reach the periosteum.
7. Advance the needle through the periosteum into the bone. A sudden “give” is felt when you enter the marrow cavity
8. Withdraw needle stylet, and attach IV tubing; open up IV flow

If IV fluid is seen extravasating from around the needle, it is not in the marrow cavity. Remove the needle and reposition it in the marrow cavity.

10. Secure the needle with gauze and tape
11. You may infiltrate the bone marrow for pain control by infusing 2% lidocaine up to 2mg/kg into the IO not to exceed 200mg.
Proximal Humerus

- The proximal humerus insertion site is located directly on the most prominent aspect of the greater tubercle. Ensure that the patient’s hand is resting on the abdomen and that the elbow is adducted (close to the body). Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle, this is the surgical neck. Approximately 1 cm (depending on patient anatomy) above the surgical neck is the insertion site. Vidacare recommends the 45 mm needle on patients >40 kg. This is the preferred site for patients who are responsive to pain. Once the insertion is completed secure the arm in place to prevent movement and accidental dislodgement of the IO catheter.

Proximal Tibia

- The proximal tibia insertion site is approximately 2 cm below the patella and approximately 2 cm medial to the tibial tuberosity (depending on patient anatomy).

Distal Tibia

- The distal tibia insertion site is located approximately 3 cm proximal to the most prominent aspect of the medial malleolus (depending on patient anatomy). Place one finger directly over the medial malleolus; move approximately 3 cm proximal and palpate the anterior and posterior borders of the tibia to assure that your insertion site is on the flat center aspect of the bone.

Complications, Prevention, and Management

- Local hematoma or cellulitis. Apply pressure dressing for bleeding.
- RARELY osteomyelitis; requires IV antibiotics.

Documentation in the medical record

- Consent if obtained, and who it was obtained from
- Indications and contraindications for the procedure on this patient
- The procedure used including prep, and size of intraosseous needle
- Any complications, or “none”
- Who was notified about any complication (family, attending physician)
### Approved Airway and Vascular Access Skills

<table>
<thead>
<tr>
<th>AIRWAY</th>
<th>PARAMEDIC</th>
<th>ADVANCED EMT</th>
<th>EMT</th>
<th>EMERGENCY MEDICAL RESPONDER</th>
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<td></td>
<td>Non-Rebreather Mask 12-15 LPM</td>
<td>CPAP</td>
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<td>Nasal Cannula 2-6 LPM</td>
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<td>Oropharyngeal airways</td>
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<tr>
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<td>Nasopharyngeal airways</td>
<td>Capnography</td>
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<td>BVM</td>
<td>Orotracheal Intubation</td>
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<td>Cricothyrotomy (greater than 8 years of age)</td>
<td>Needle Cricothyrotomy (less than 8 years of age)</td>
<td>Needle Cricothyrotomy (less than 8 years of age)</td>
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<td>VASCULAR ACCESS</td>
<td>Intravascular Access</td>
<td>Proximal Humerus IO (preferred)</td>
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<td>Blood Draw</td>
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<td>Distal Tibial IO</td>
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<tr>
<td></td>
<td>IO Tibial</td>
<td>IV Pumps (Optional)</td>
<td>IV Pumps (Optional)</td>
<td>IV Pumps (Optional)</td>
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</table>
**Cardiac: Ventricular Assist Device Failure**

**EMERGENCY MEDICAL RESPONDER**

- ABC
- Apply appropriate oxygen therapy
- LVAD Functioning?
  - Auscultate left upper abdominal quadrant. Continuous Humming sound = pump IS working
  - Vital signs (must use a Doppler or Elemano device to obtain HR and BP)
- Have AED available
- If the pump has stopped for 5 minutes or more, assess patient:
  - If patient hemodynamically unstable, re-establish power and contact the VAD coordinator or ED physician immediately.
  - If patient is hemodynamically stable, DO NOT re-establish power (a clot may have formed in the pump) and contact the VAD coordinator or ED physician immediately. Continue to monitor.

- Transport emergently to Emergency Department

**EMERGENCY MEDICAL RESPONDER**

- 12 lead ECG and transmit

**EMT STOP**

**ADVANCED EMT**

- Vascular access, with blood draw
- Controller Alarming (red heart)
  - Treat for cardiogenic shock per Cardiac: Cardiogenic Shock protocol

**ADVANCED EMT STOP**

**PARAMEDIC**

- Cardiac monitor
- Go to appropriate protocol as needed
  - Patient may be defibrillated/cardioverted and/or paced safely
- Contact Medical Control as soon as possible so they are aware of this special patient
- If the pump has stopped and will not re-start after re-establishing a power source, rapid transport to the nearest facility is indicated
  - Compressions will likely result in dislodgement of the pump and are considered intervention of last resort
Cardiac: Ventricular Assist Device Failure (continued)

**Key Points/Considerations**

- Turning the LVAD back on after it has stopped for 5 minutes can increase the possibility of clot formations being pushed around the system.
- Most patients are already on Coumadin and ASA.
- The LVAD is a continuous flow device and you may or may not feel a pulse.
- The patient needs to have their caregiver and all their equipment transported with them. (The caregiver is the expert on the device)
- Obtain BP with Elemano device (in black rescue bag) or with a Doppler.
- The goal mean arterial pressure (MAP) for VAD patients is between 60-90 mmHg.
  
  \[ \text{MAP} = \frac{\text{Systolic BP} + (\text{Diastolic } \times 2)}{3} \]

- This device is used as a bridge to transplant or may be destination therapy.
- For additional information on this device refer to:
MEDICATION ADMINISTRATION

PARAMEDIC

Intranasal (IN)

General Information:

- The Mucosal Atomization Device (MAD) can be used for the administration of Fentanyl, Midazolam, Ativan and Naloxone in the event an IV has not or cannot be initiated.
- Prior to using the intranasal route of administration, inspect the patient’s nostrils for significant amounts of blood or mucous discharge. The presence of these will limit the medication absorption. Suctioning the nasal passage prior to delivery and/or alternative delivery options should be considered.
- **Always** deliver half of the medication dose up each nostril.
- **Do not use** more than 1 ml of medication per nostril. If a higher volume is required, apply it in two separate doses allowing a few minutes for the initial amount to absorb.
- Be aware that there is approximately 0.1 ml of dead space in the MAD. It is important to make allowances for this dead space when calculating the volume to be administered.

Procedure:

1. Using a 1 ml or 3 ml syringe and needle, draw the appropriate amount of medication into the syringe.
2. Remove the needle and place the MAD tip onto the syringe. The MAD is a Luer lock device and twists into place.
3. Use your free hand to hold the crown of the head stable. Place the tip of the atomizer snugly against the nostril aiming slightly up and outward (toward the top of the ipsilateral ear).
4. Briskly compress the syringe plunger and deliver approximately half of the medication.
5. Move the device over to the opposite nostril and administer the remainder of the medication as before.
6. If an amount greater than 1 ml per nostril is needed, wait 2 – 3 minutes and administer the remaining medication.

**Intramuscular (IM)**

Injection is the most commonly used route of parenteral medication administration. The drug is injected into the muscle tissue, from which it is absorbed into the bloodstream. This method has a predictable rate of absorption, but its onset of action is considerable slower than IV.

**INDICATIONS**
- When the rate of absorption needs to be slower and/or prolonged in action.
- When other administration routes are unsuccessful or unavailable (i.e. IV).

**CONTRAINDICATIONS**
- Severe bleeding disorders (i.e. hemophilia) or recent thrombolytic therapy.
- States of severe hypoperfusion or shock (exception: Epi-auto-injector for anaphylaxis).
- When rapid absorption and action of a medication is required (i.e., when IV is preferred)

**PROCEDURE**
- Utilize Universal Precautions
- Prepare your equipment.
  - **Appropriate needle length**: 5/8 to 1 inch for deltoid and 1 to 1.5 inch for larger muscles.
  - **Appropriate needle gauge**: 22 to 25 gauge needles for aqueous and 21 gauge for oily or thicker medications.
  - 3 or 5 ml syringe
  - Medication
  - Alcohol swabs
  - Band-Aids.
- Check the label, date, and appearance of the medication to be administered.
- Locate the appropriate site for the injection. **Use only the following sites:**
  - **Posterior Deltoid** for injections of 2 mL or less (preferred site) in adults
    - Identify the landmarks of the upper arm. Find the bony portion of the shoulder where the clavicle and scapula meet (the acromioclavicular joint), then measure 3 to 4 fingers-width down the arm from the AC joint. Then slide one to two fingers-width posteriorly on the arm.
- Cleanse skin with alcohol and allow drying.
- Do not inject large volumes of irritating medications into this muscle (i.e. steroids, etc.).

- **Dorso-gluteal site** for injections of 2 to 5 ml in adults or 2 ml or less in children greater than age 3. •
  - Identify the posterior superior iliac spine. Draw an imaginary line to the head of the trochanter (have the patient lie prone and point his/her toes inward to help relax the muscles); the injection is given lateral and superior to this line.

- **Vastus Lateralis** for injections of 2 mL or less in children and adults. •
  - Sites are located on the anterior and lateral aspects of the thigh. Divide the area into thirds between the greater trochanter of the femur and the lateral femoral condyle. The injection should be given into the middle third (**preferred site for epi-pen injections**).

- **Ventrogluteal site** for injections of 2 to 5 ml in adults or 2 ml or less in children.
  1. Place the heel of your right palm on your patient’s greater trochanter of the femur. Place your **index finger on** the anterior superior iliac spine and spread your other fingers posteriorly. This injection is given in the **V formed** between the index finger and the second finger.
  2. With on hand, stretch or flatten the skin overlying the selected site (this allows for a smoother entry of the needle). Hold the syringe like a dart in the other hand and quickly thrust the needle into the tissue and muscle at a 90-degree angle.
3. Aspirate the syringe to ensure that an inadvertent venous administration is avoided. If any blood is aspirated into the syringe, withdraw the syringe and needle and dispose of the medication. Begin again at a new site. **DO NOT administer any medication mixed with blood.**

4. If no blood is aspirated, slowly inject the medication. After all of the medication is injected, quickly withdraw the syringe, dispose of the sharps in approved container, and gently massage over the injection site to increase absorption and medication distribution. Apply firm pressure and place a Band-Aid over the injection site.
INTRANASAL NARCAN

Patients that present with an opiate overdose

- Attach the atomizer to the syringe
- Screw narcan into the syringe
- Inject half (1ML) into each nostril
- Patient should respond in 2-3 minutes
- No response may be due to large amount of opiate ingestion
- Paramedics need to be in route when OD suspected
- No patient will be signed off if Narcan has been Given
- Law enforcement may have given Narcan Prior to EMS arrival
Quick Trach Instructions:

Emergency airway device that allows quick and safe ventilation of a patient in the presence of acute respiratory distress with upper airway obstruction.

Preparation:

1. Identify indications for use of the QuickTrach Cricothyrotomy Kit
   1. Rescue device for failed airways
   2. Acute upper airway obstruction that cannot be relieved by other airway maneuvers
2. Identify examples of acute upper airway obstruction
   1. Epiglottitis
   2. Laryngospasm
   3. Facial trauma/burns
   4. Laryngeal edema
   5. Fractured larynx
   6. Foreign body obstruction
3. Identify components of the QuickTrach Cricothyrotomy Kit
   1. 1 QuickTrach Syringe with stopper
   2. 1 Connecting tube with 15 mm adapter
   3. 1 Cushion neckband

Insertion Procedure*:

1. Demonstrate body substance isolation (BSI) procedures
2. Select appropriate size for the QuickTrach Cricothyrotomy Kit
   1. 2.0 mm for patients
   2. 4.0 mm for patients
3. Place patient in a supine position and assure stable positioning of the neck and hyperextend the neck (unless cervical spine injury suspected).
4. Secure the larynx laterally between thumb and forefinger. Fine the cricoid membrane (in midline between the thyroid cartilage and the cricoid cartilage). This is the puncture site.
5. Prep site by vigorously scrubbing with appropriate prep solution.
6. Firmly hold device and puncture the cricoid membrane at a 90 degree angle.
7. After puncturing the cricoid membrane, check the entry of the needle into the trachea by aspirating air through a syringe. If air is present, the needle is within the trachea.
8. Now change the angle of insertion to 45 degrees (from the head) and advance the device forward into the trachea to the level of the stopper. The stopper reduces the risk of inserting the needle too deeply and causing damage to the rear wall of the trachea.
9. Should no aspiration of air be possible because of an extremely thick neck, it is possible to remove the stopper and carefully insert the needle further until entrance into the trachea is made.
10. Remove stopper. After stopper is removed, be careful not to advance device further with needle still attached.
11. Hold the needle and syringe firmly and slide only the plastic cannula along the needle into the trachea until the flange rests on the neck. Carefully remove the needle and syringe.
12. Secure the cannula with the neck strap.
13. Apply connecting tube to 15 mm connection and connect the other end to BVM resuscitation bag or ventilation circuit.

*These instructions are for training purposes only to help familiarize one with the handling of the product and do not represent the product's full instructions for use, including its associated cautions and warnings. For a copy of complete instructions, please contact your Teleflex EMS Sales Representative.
SCENE REHABILITATION PROTOCOL

EMT/ADVANCED/PARAMEDIC

This protocol may be applied to adult patients on emergency scenes and any gathering approved by Medical Director (for example large sporting events, parades, concerts, fairs, and mass casualty incidents).

All firefighters must report to designated rehab area for any of the following criteria: (may also include training)

- 2 air bottles initially (then 1 additional bottle) or failure of SCBA equipment. (including running out of air on entry)
- 30 minutes of work time (including overhaul).
- Hazmat technicians working on a Hazmat scene.

Crime Scene/Standoffs:
- Bomb squad members who have been operating in heavy protective clothing.
- Police tactical unit members that have been working for extended period of time.

Upon entering the designated rehab area, the following will occur prior to returning to work related activity:

- Removal of all PPE: includes bunker pants pushed down on boots
- Active/passive cooling: cool/wet cloths to back of necks and/or lower arms – gradually lower temperature.
- Oral rehydration: one bottle (minimum of 16 oz.) of ambient temperature water or weak Gatorade.
- Assessment & vitals: Neuro evaluation and complete head-to-toe assessment. Also assess for any signs/symptoms of heat related illnesses. Treat and/or transport any injuries reported or discovered during assessment.
- Monitor for patterns of illness or unusual symptoms (including exposure to fire scene toxins) among firefighters/scene personnel: Report any to scene IC immediately and document findings on EMS report.

Public Events (Patrons): For Approved Gatherings

- This should be used for evaluating patrons of certain special events that may or may not otherwise meet the definition of a patient.
- Ems personnel have the authority in deciding when an individual meet the definition of a patient and/or requires further treatment or transport.
- A PCR is required on any individual that is evaluated at the rehabilitation center, ALS care more than just over-the-counter medications and/or transported to the emergency department.
- Establish rehab location such that it provides shelter, privacy and freedom from smoke or other hazards.
Criteria for mandatory rest

<table>
<thead>
<tr>
<th>Pulse</th>
<th>Blood Pressure</th>
<th>Respiration</th>
<th>Temperature</th>
<th>Pulse Oximetry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Rate</td>
<td>Systolic &lt;90 or &gt;200</td>
<td>&lt; 8</td>
<td>&gt;101°F (Tympanic)</td>
</tr>
<tr>
<td>20-25</td>
<td>170</td>
<td>Diastolic &gt;110</td>
<td>&gt;30</td>
<td>Consider possibility of carbon monoxide affecting accuracy (falsely high reading)</td>
</tr>
<tr>
<td>26-30</td>
<td>165</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-35</td>
<td>160</td>
<td></td>
<td></td>
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<tr>
<td>36-40</td>
<td>155</td>
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<td>41-45</td>
<td>152</td>
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<td></td>
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<tr>
<td>46-50</td>
<td>148</td>
<td></td>
<td></td>
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<tr>
<td>51-55</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56-60</td>
<td>136</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61-65</td>
<td>132</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If any firefighter, law enforcement, EMS responder, or Patron meets any of criteria for the mandatory rest, have firefighter rest 10 min then reevaluate.

If all vitals are no longer within criteria form mandatory rest after 10 min reevaluation, may release to return to scene activities.

If vitals remain in criteria for mandatory rest, continue mandatory rest/rehydration and reevaluate in 10 minutes intervals.

Monitor carboxyhemoglobin using the guidelines below:

- 0-5% Consider normal in non-smokers. When >3% with symptoms place on high flow and remove from the environment.
- 5-10% Normal in smokers. If symptoms are present place on high flow oxygen.
- 10-15% Abnormal in any patient. Assess for symptoms and place on high flow oxygen.
- >15% significantly abnormal for any patient. Place on high flow oxygen and transport to the closest appropriate facility.

Automatic transport criteria – Treat under appropriate protocols

- Vital signs remaining within criteria for mandatory rest after 30 minutes of total in rehab.
- Chest pain or suspected cardiac symptoms.
- Cardiac rhythm other than sinus or sinus tachycardia (unless prior documented evidence of other rhythm normal for patient).
- Shortness of breath unresolved by 10 minutes of high flow O2.
- Altered mental status, syncopal episode, unresolved dizziness, and headache or seizure activity.
- Inability to hold fluids down or an episode of vomiting.
- Severe muscle cramps.
EMT

- Assessment & vitals
- Active/passive cooling
- Oral rehydration

ADVANCED EMT/PARAMEDIC

- If ALS procedures are initiated, then a complete chart (including refusal if appropriate) is necessary.
- May initiate IV for rehydration if necessary up to 1 L normal saline until pulse is less than 100 and systolic BP is greater than 110.
- After 1 L, transport the firefighter, law enforcement, EMS responders, or Patron to ED if pulse greater than 100 or systolic BP less than 110. If pulse is less than 100 and systolic BP is greater than 110, firefighter, law enforcement, EMS responders may be released but restricted from any further activities and Patrons maybe released after doing a signed refusal.
- Medical control contract is not required to discontinue IV therapy to adult firefighter, law enforcement, EMS responder, or Patron treated under this protocol.
EBOLA

Dispatch will alert EMS provider about a possible patient with history of EBOLA exposure or recent travel to West Africa specifically Sierra Leone, Nigeria, Guinea, Liberia, or Senegal.

Medics should don their CDC approved PPE and remove nonessential items from the Ambulance. The patient encounter should include questioning about recent travel especially to one of the aforementioned countries, or recent contact with an Ebola affected patient.

If Patient is confirmed to be high risk or exposed to Ebola, the ED should be Contacted as soon as possible to allow ED to prepare for patient arrival.

A set of vital signs may be obtained using disposable BP cuff and stethoscope. The EMS crew may provide Oxygen or Ventilate the patient as necessary. You may use any of the Elkhart County Protocols as described above, however the EMS crew does not have to initiate lines or intubate the patient while in route to the hospital to prevent EMS crew contamination. Those procedures will be completed at the hospital by ED staff.

The Ambulance crew will doff their PPE and dispose of ambulance waste per CDC guidelines and procedures. The Ambulance will then need to be taken to the Elkhart County Sheriffs's Department and EMA garage for decontamination of the ambulance.

Note:
EFD has made one of their backup ambulances available to any EMS agency as well as PPE if needed to transport a suspected case of Ebola.

ANY Questions should be directed to MEDICAL CONTROL immediately.
INFORMED CONSENT AND REFUSAL OF CARE/TRANSPORT

EMT

ADVANCED EMT

PARAMEDIC

- Conduct the following assessments:
  - Legal competence
  - Mental competence
  - Medical or situational competence

- Patient Incompetent:
  - Treat and transport in “Good Faith”
  - Do not jeopardize safety of self or crew
  - Call for law enforcement if needed

- Who may sign for refusal?
  - Patient of legal age
  - Parent
  - Legal Guardian

- Refusal Assessment and Documentation:
  - Complete Assessment
  - Obtain complete set of vital signs
  - Explain risks and dangers
  - Advise them to seek medical attention
  - Complete patient refusal form
  - Review form with signer
  - Have patient sign form if possible
  - Obtain witness signature
  - Complete Patient Care Report
  - IF needed, contact medical control
INTER-FACILITY TRANSPORT

**EMT**

**ADVANCED EMT**

- Refer to [Medical Device Dependent Transport](#) (Non-Rule Policy Statement)

**EMT / ADVANCED EMT STOP**

**PARAMEDIC**

- Paramedics may transport a patient between hospitals with the following IV Infusions, provided the medication is ordered and provided by the transferring physician
- Be certain to clarify orders regarding medication titration prior to departure
- The IV medication must be run on an infusion pump

**GP IIb/IIIa RECEPTOR INHIBITORS**

- Integrilin (eptifibatide): 0.5 - 2 micrograms/kg/min (Or similar agents)
- Monitor patient for signs of bleeding around IV sites, hemoptysis, hematuria, or epistaxis
- Discontinue if any signs or symptoms of bleeding complications

**HEPARIN**

- Usual dosage: 18 units/kg/hr.
- Monitor patient for signs of bleeding around IV sites, hemoptysis, hematuria, or epistaxis
- Discontinue if any signs or symptoms of bleeding complications

**NITROGLYCERIN**

- Usual dosage: 10 - 200 mcg/min
- Monitor blood pressure every 5 minutes
- Discontinue and infuse a 500 mL of NS, if systolic blood pressure falls below 90 mm Hg, or if diminishing mental status occurs with diminishing blood pressure.
The Emergency Medical Services Commission recognizes the increasing numbers of medical-device-dependent patients. EMTs and -EMT BA/ADVANCED EMT may transport these patients. The following represents the EMS Commission’s “Non Rule Policy”

Long-term care providers should stop central venous and enteral on-going infusions prior to transport by the EMT or ADVANCED EMT. EMTs and EMT BA / ADVANCED EMT shall not manipulate these devices unless directed to do so by medical control.

EMTs and EMT BA/ADVANCED EMT may transport any of the following under control of the provider organization’s medical director:

- PCA Pump with any medication or fluid infusing through a peripheral IV
- Medication infusing through a peripheral IV or continuous subcutaneous catheter via a closed, locked system
- A central catheter that is clamped off (subclavian, Hickman, PICC, and Passport)
- A patient with a feeding tube that is clamped off
- A patient with a Holter monitor
- A patient with a peripheral IV infusing vitamins
- IV fluids infusing through a peripheral IV via gravity or an infusing system that allows the technician to change the rate of infusion are limited to NS, Lactated Ringers, Sodium Chloride (0.9% or less), Potassium Chloride (20mEq or less for EMTs, 40mEq or less for Advanced EMTs)

*The provider organization’s medical director may approve additional devices at his/her discretion.*

The following are determined by the Emergency Medical Services Commission to require Paramedic level transportation:

- Medication infusing through a peripheral or central IV or fluid infusing through a central IV via gravity or an infusing system that allows the operator or assistant to change the rate of infusion
- A patient with a chest tube
- A patient with a continuous feeding tube
- A vent dependent patient
TRANSFER OF CARE

EMT

- Documentation must be left at the hospital to include:
  - Agency ID, Crew ID
  - Patient Demographics: Name, Date of Birth
  - Initial assessment: chief complaint and past pertinent medical history
  - Interventions: Medications, procedures performed and patient response

ADVANCED EMT

PARAMEDIC

- Specimens left at the hospital:
  - Upon arrival at the ED, notify the receiving nurse if blood has been drawn.
  - Refer to Vascular Access Protocol key points for labeling
  - Do NOT leave blood tubes on a counter or give them to anyone who is not a licensed healthcare provider

Key Points

If patient Care Report (PCR) is not left with hospital at time of transfer, a completed PCR must be faxed to the receiving hospital within 4 hours.
**DOCUMENTATION POLICY**

**EMERGENCY MEDICAL RESPONDER**

**EMT**

**ADVANCED EMT**

**PARAMEDIC**

**Standard procedure:** After completion of each patient transport, the following information needs to be documented. A copy of the run form needs to be left with the patient chart in Emergency Department. Please send reports as soon as possible. The state law requires all reports to be sent to the Hospital within 24 hours. A $500 fine per day can be levied against the department for failure to turn in run report.

- **Chief complaint:** The patient's major presenting problem.

- **History of present illness or injury (HPI):** This should include events leading up to the chief complaint, a description of the onset of the problem, and further explanation of the chief complaint of presenting symptoms. This would include the; *Onset, Provocation or Palliation, Quality, Radiation, Severity, and Time.*

- **Past pertinent medical history:** As it relates to the current problem, and any pre-existing conditions of the medical problem, current medications and known allergies. This is the; *Symptoms, Allergies, Medications, Past medical history, Last oral intake, and Events leading up to the injury or illness.* The events section could be included in the HPI.

- **Physical exam:** This would include the, Initial, Rapid, Focused, and Detailed assessment including, all vital signs and ECG interpretations if appropriate. This should be very complete and detailed to thoroughly describe the condition of the patient. All objective findings along with pertinent negatives need to be included.

- **Treatment and response:** All treatments must be documented, preferably chronologically. What treatment was provided, the time, who performed the treatment, if pertinent the number of attempts and successes, the patient response to the treatment and further assessment. If the treatment has specific documentation requirements, then those must be included as well. Documentation of non-treatments is also required.

- **Transportation:** The position in the mode of transportation. It is recommended that you document the patient was secured on a stretcher and how the patient was secured. When the hospital was contacted and how they were contacted. Any orders received or denied in the patient response to any orders. Make sure document all times with these orders. Any changes in the patient condition or changes would be included. Arrival at the hospital which room the patient was placed in and whom you released care to at the receiving facility.
## MEDICATION FORMULARY (PAGE 1 OF 3)

<table>
<thead>
<tr>
<th>Medication Name</th>
<th>Routes</th>
<th>Volume/unit</th>
<th>Concentration</th>
<th>Mg/unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMERGENCY MEDICAL RESPONDER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naloxone (Narcan)</td>
<td>IN</td>
<td>2ml</td>
<td>1mg/ml</td>
<td>2mg</td>
<td>2</td>
</tr>
<tr>
<td>Sterile Water bottles</td>
<td>Irrigation</td>
<td>250mL or 500mL at depts. Discretion - total of 4000mL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EMT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin</td>
<td>Oral</td>
<td>Tablet</td>
<td>81 mg/tab</td>
<td>36 tabs</td>
<td>1</td>
</tr>
<tr>
<td>Epinephrine Auto Injector</td>
<td>IM</td>
<td></td>
<td>1 Epi Pen – Adult (0.3 mg) and 1 Epi Pen - Jr. (0.15 mg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epinephrine 1:1,000</td>
<td>SQ</td>
<td>1 mL</td>
<td>1 mg/mL</td>
<td>1 mg</td>
<td>2</td>
</tr>
<tr>
<td>Glucose (Gel)</td>
<td>Buccal</td>
<td>15 grams</td>
<td>As packaged</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Glucose (Tablets)</td>
<td>Oral</td>
<td>15 grams</td>
<td>As packaged</td>
<td></td>
<td>1 bottle</td>
</tr>
<tr>
<td><strong>ADVANCED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucagon</td>
<td>SQ, IM</td>
<td>1 mL</td>
<td>1 mg/mL</td>
<td>1 mg</td>
<td>2</td>
</tr>
<tr>
<td>Normal Saline 0.9%</td>
<td>IV</td>
<td>1000mL or 500mL at depts. Discretion - total of 7000mL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PARAMEDIC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adenosine (Adenocard)</td>
<td>IV</td>
<td>2 mL</td>
<td>3 mg/mL</td>
<td>6 mg</td>
<td>2</td>
</tr>
<tr>
<td>Adenosine (Adenocard)</td>
<td>IV</td>
<td>4 mL</td>
<td>3 mg/mL</td>
<td>12 mg</td>
<td>4</td>
</tr>
<tr>
<td>Albuterol (Proventil)</td>
<td>Inhalation</td>
<td>3 mL</td>
<td>0.83 mg/mL</td>
<td>2.5 mg</td>
<td>5</td>
</tr>
<tr>
<td>Amiodarone (Cordarone)</td>
<td>IV</td>
<td>3 mL</td>
<td>50 mg/mL</td>
<td>150 mg</td>
<td>4</td>
</tr>
<tr>
<td>Atropine</td>
<td>IV</td>
<td>10mL</td>
<td>0.1 mg/mL</td>
<td>1 mg</td>
<td>5</td>
</tr>
<tr>
<td>Atrovent (Ipratropium bromide)</td>
<td>Inhalation</td>
<td>2.5 mL</td>
<td>0.5 mg/mL</td>
<td>1.25 mg</td>
<td>3</td>
</tr>
<tr>
<td>Cardizem (Diltiazem)</td>
<td>IV</td>
<td>5 mL</td>
<td>5 mg/mL</td>
<td>25 mg</td>
<td>2</td>
</tr>
<tr>
<td>Dextrose 5%</td>
<td>IV</td>
<td>500 ml</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Dextrose 10%</td>
<td>IV</td>
<td>500 mL</td>
<td>100 mg/mL</td>
<td>50 g</td>
<td>2</td>
</tr>
<tr>
<td>Dextrose 25%</td>
<td>IV</td>
<td>10 mL</td>
<td>250 mg/mL</td>
<td>2.5 g</td>
<td>4</td>
</tr>
<tr>
<td>Dextrose 50%</td>
<td>IV</td>
<td>50 mL</td>
<td>500 mg/mL</td>
<td>25 g</td>
<td>4</td>
</tr>
<tr>
<td>Diazepam (Valium)</td>
<td>IV/IM/IN</td>
<td>2 ml</td>
<td>5mg/ml</td>
<td>5mg/ml</td>
<td>2-4</td>
</tr>
<tr>
<td>Medication Name</td>
<td>Routes</td>
<td>Volume/unit</td>
<td>Concentration</td>
<td>Mg/unit</td>
<td>Total</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>Dilaudid (Hydromorphone)</td>
<td>IV/IM</td>
<td>1ml</td>
<td>1mg/ml</td>
<td>1mg</td>
<td>2-4</td>
</tr>
<tr>
<td>Diphenhydramine (Benadryl)</td>
<td>IV, IM</td>
<td>1 mL</td>
<td>50 mg/mL</td>
<td>50 mg</td>
<td>4</td>
</tr>
<tr>
<td>DuoNeb (Ipratropium Bromide/Albuterol Sulfate)</td>
<td>Inhalation</td>
<td>(Ipratropium Bromide / Albuterol Sulfate Inhalation Solution 0.5 mg / 3 mg)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epinephrine (Racemic)</td>
<td>Inhalation</td>
<td>As packaged</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Epinephrine 1:10,000</td>
<td>IV</td>
<td>10 mL</td>
<td>0.1 mg/mL</td>
<td>1 mg</td>
<td>10</td>
</tr>
<tr>
<td>Etopame (Amidate)</td>
<td>IV</td>
<td>20 mL</td>
<td>2 mg/mL</td>
<td>40 mg</td>
<td>1-2</td>
</tr>
<tr>
<td>Famotidine (Pepcid)</td>
<td>IV</td>
<td>2 mL</td>
<td>10 mg/mL</td>
<td>20 mg</td>
<td>2</td>
</tr>
<tr>
<td>Fentanyl Citrate (Sublimate)</td>
<td>IV, IN, IM</td>
<td>2 mL</td>
<td>50 mcg/mL</td>
<td>100 mcg</td>
<td>2-4</td>
</tr>
<tr>
<td>Haldol Lactate (Haloperidol)</td>
<td>IM</td>
<td>5mg</td>
<td>5mg/ml</td>
<td>5mg</td>
<td>2</td>
</tr>
<tr>
<td>Lidocaine 2%</td>
<td>IV</td>
<td>5 mL</td>
<td>20 mg/mL</td>
<td>100 mg</td>
<td>2</td>
</tr>
<tr>
<td>Lorazepam (Ativan)</td>
<td>IV, IM, IN</td>
<td>1 mL</td>
<td>2 mg/mL</td>
<td>2 mg</td>
<td>3-9</td>
</tr>
<tr>
<td>Magnesium Sulfate</td>
<td>IV</td>
<td>10 mL</td>
<td>500 mg/mL</td>
<td>5 grams</td>
<td>1</td>
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<tr>
<td>Methylprednisolone (Solu-Medrol)</td>
<td>IV, IM</td>
<td>2 mL</td>
<td>62.5 mg/mL</td>
<td>125 mg</td>
<td>2</td>
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<tr>
<td>Midazolam (Versed)</td>
<td>IV, IN, IM</td>
<td>5 mL</td>
<td>1 mg/mL</td>
<td>5 mg</td>
<td>2-4</td>
</tr>
<tr>
<td>Morphine</td>
<td>IV, IM</td>
<td>1 mL</td>
<td>10 mg/mL</td>
<td>10 mg</td>
<td>2-5</td>
</tr>
<tr>
<td>Naloxone (Narcan)</td>
<td>IV, IN, IM</td>
<td>2 mL</td>
<td>1 mg/mL</td>
<td>2 mg</td>
<td>3</td>
</tr>
<tr>
<td>Nitroglycerin Tablets or Spray</td>
<td>SL</td>
<td>Tablet</td>
<td>0.4 mg/tab</td>
<td>1 bottle</td>
<td>1</td>
</tr>
<tr>
<td>Nitroglycerin Spray</td>
<td>SL</td>
<td>Spray</td>
<td>0.4 mg/spray</td>
<td>1 bottle</td>
<td>1</td>
</tr>
<tr>
<td>Ondansetron ODT (Zofran)</td>
<td>Oral</td>
<td>30 tablets</td>
<td>4 mg/tablet</td>
<td>120 mg</td>
<td>1 bottle</td>
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<tr>
<td>Ondansetron (Zofran)</td>
<td>IV, IM</td>
<td>2 mL</td>
<td>2 mg/mL</td>
<td>4 mg</td>
<td>4</td>
</tr>
<tr>
<td>Oxymetazoline (Afrin)</td>
<td>IN</td>
<td>As packaged</td>
<td></td>
<td>1 bottle</td>
<td></td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>IV</td>
<td>50 mL</td>
<td>1 mEq/mL</td>
<td>50 mEq</td>
<td>2</td>
</tr>
<tr>
<td>Succinylcholine (Anectine)</td>
<td>IV</td>
<td>10 mL</td>
<td>25 mg</td>
<td>250 mg</td>
<td>2</td>
</tr>
<tr>
<td>Terbutaline (Brethine)</td>
<td>SubQ</td>
<td>1 mL</td>
<td>1 mg/mL</td>
<td>1 mg</td>
<td>2</td>
</tr>
<tr>
<td>Tetracaine Hydrochloride Ophthalmic</td>
<td>Topical</td>
<td>15 mL/multi</td>
<td>0.6 mL/single</td>
<td>0.5%</td>
<td>1 bottle</td>
</tr>
<tr>
<td>Toradol</td>
<td>IV/IM</td>
<td>2ml</td>
<td>60mg</td>
<td>60mg/2</td>
<td>4</td>
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</table>

ACCEPTABLE MEDICATIONS IDENTIFIED FOR DRUG SHORTAGE SITUATIONS
<table>
<thead>
<tr>
<th>Medication Name</th>
<th>Routes</th>
<th>Volume/unit</th>
<th>Concentration</th>
<th>Mg/unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benadryl (tablets/liquid)</td>
<td>Oral</td>
<td>125ml/ 50 tab</td>
<td>25mg/12mg/5ml</td>
<td>bottle</td>
<td>1</td>
</tr>
<tr>
<td>Dopamine HCL, pre-mix infusion</td>
<td>IV</td>
<td>500 mL</td>
<td>1600 mcg/mL</td>
<td>800 mg</td>
<td>2</td>
</tr>
<tr>
<td>Procainamide</td>
<td>IV</td>
<td>2 mL</td>
<td>500 mg/mL</td>
<td>1000 mg</td>
<td>4</td>
</tr>
<tr>
<td>Promethazine (Phenergan)</td>
<td>IM</td>
<td>1 mL</td>
<td>50 mg/mL</td>
<td>50 mg</td>
<td>2</td>
</tr>
<tr>
<td>Levalbuterol (Xopenex)</td>
<td>Inhalation</td>
<td>3 mL</td>
<td>1.25 mg/3 mL</td>
<td>1.25 mg</td>
<td>2</td>
</tr>
</tbody>
</table>

Jason Bailey, MD  FACEP  
ECEMS Medical Director
**Medication Calculations**

**Procainamide Infusion:** 2g in 500 mL Normal Saline = 4 mg/mL

<table>
<thead>
<tr>
<th>Infusion Rate</th>
<th>Admin Set: 60 drops/mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mg/min</td>
<td>15 drops/min</td>
</tr>
<tr>
<td>2 mg/min</td>
<td>30 drops/min</td>
</tr>
<tr>
<td>3 mg/min</td>
<td>45 drops/min</td>
</tr>
<tr>
<td>4 mg/min</td>
<td>60 drops/min</td>
</tr>
</tbody>
</table>

**Procainamide Loading Dose**

Dilute 1 g Procainamide in 50 mL NS (concentration 20 mg/mL)

Using a 60 gtt set, infuse at a rate of one (1) gtt every second

Continue until:
- arrhythmia suppressed
- Hypotension ensues
- QRS widens by > 50%
- 17 mg/kg is given or 1 g is given

**Dopamine:** 800 mg in 500 mL Normal Saline = 1600 mcg/mL

<table>
<thead>
<tr>
<th>Infusion Rate (micrograms/kg/min)</th>
<th>Weight in kilograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>55</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>30</td>
<td>38</td>
</tr>
</tbody>
</table>

Drip rates/min, using a 60-drops/mL-administration set

**Dopamine quick calculation:**

Patient’s weight in lbs. (round to a 2 digit number and subtract 2) = gtts/min or mL/hr for 5 mcg/kg/min

Example: 168 lbs = 17 - 2 = 15 gtts/min or 15 mL/hr

**Amiodarone - Adult Tachycardia**

**Loading Dose:**

150 mg in 100 mL (1.5 mg/mL)

Give over 10 min (100 gtt/min with 10 gtt/mL tubing)

**Maintenance Infusion:**

150 mg in 100 mL (1.5 mg/mL) - 1 mg/min (40 gtt/min with 60 gtt set is (2) gtt every 3 seconds)

150 mg in 50 mL (3 mg/mL) - 1 mg/min (20 gtt/min with 60 gtt set is (1) gtt every 3 seconds)
CERTIFICATION/LICENSURE – LOCAL CREDENTIAL - IN- SERVICE REQUIREMENTS

EMERGENCY MEDICAL RESPONDER

EMT

State of Indiana and National Registry Certifications/Licenses are valid for a period of 2 years. Didactic, skill session, and audit and review hours must be documented and signed by the person responsible for the program.

1. Affiliation is good for up to one (1) year if there is a leave of absence and not preforming their duties. It will be at the discretion of the Department and Medical Director if remediation is needed prior to resuming duties.
2. Disciplinary action may be taken for violation of any these requirements including suspension and is at the discretion of the Medical Director and will be on a case-by-case basis.

3. Initial Elkhart County EMS Credentialing:
   3.1. Affiliation with either an Elkhart General Hospital or Goshen Hospital affiliated service provider.
   3.2. ECEMS Provider must submit a letter of intent to credential individual to the Medical Director or EMS Coordinator. Include copies of all EMS certifications.
   3.3. Become familiar with Elkhart County EMS Patient Care Protocols.
   3.4. The candidate must complete the Elkhart County EMS Patient Care Protocol exam with a minimum score of 80% for successful completion.
   3.5. Once 80% success has been achieved on the protocol exam, the candidate must complete five (5) patient contacts as lead patient care provider or have preformed Basic care for a patient that was then turned over to Paramedic. An additional credentialed personnel certified/licensed at the highest level of the ambulance provider certification must be available at the scene and in the ambulance during patient care to provide performance review as prescribed in 1.3 above. The department may, at their discretion, require more runs based on performance of candidate.
   3.6. Medical Director will recommend acceptance, remediation, or denial of credentialing. Remediation will be at the discretion of the Medical Director. If initial credentialing is denied, the individual must wait 60 days before reapplying for credentials in the ECEMS system.
   3.7. The Medical Director at his/her discretion may determine additional requirements.
   3.8. Candidate may appeal to the Medical Director or the EMS coordinator for any grievances with the department in reference to affiliation process.

4. Affiliated provider requirements for continued Credentialing:
   4.1. Maintain AHA Healthcare Provider CPR or American Red Cross Professional Rescuer CPR certification
   4.2. Maintain Continuing Ed. didactic hours as required for continued State of Indiana certification/Licensure
4.3. Maintain Minimum number of Audit & Review hours as required for certification/licensure level. A minimum of one (1) of those audit and reviews must be attended at the provider’s primary supervising hospital per year.

4.4. Verification of all skills as listed in the CEU book must be witnessed at an in-service training or actual clinical setting by the Medical Director or his/her designee.

4.5. Must have 4 airway managements per calendar year, which can be done with your department and/or live patients.

**ADVANCED EMT**

**PARAMEDIC**

5. Initial Elkhart County EMS Patient Care Protocol provider Credentialing:

5.1. Complete ten (10) patient care contacts utilizing Elkhart County EMS Patient Care Protocols at the ADVANCE or PARAMEDIC Level with supervising medic.

6. Affiliated provider requirements for continued Paramedic Local Credentials:

6.1. Current Advanced Cardiac Life Support (ACLS) Certification

6.2. Current Pediatric Advanced Life Support (PALS) or Pediatric Emergencies for Pre-Hospital Professionals (PEPP) Certification – (Or educational objective equivalent)

6.3. Current Pre-Hospital Trauma Life Support (PHTLS) or International Trauma Life Support (ITLS) – (Or educational objective equivalent)

6.4. Current Advanced Medical Life Support (AMLS) – (Or educational objective equivalent)

6.5. ADVANCE EMT’s must do four airway managements per calendar year, and may be done at their departments

6.6. PARAMEDICS must maintain airway proficiency of 80% intubation success rate with a minimum of eight (8) simulated or field intubations per calendar year as verified by members of the educational staff of the Supervising Hospitals, Medical Director, or patient care report documentation. Four (4) must be live or high fidelity simulator.

6.7. Validation of ALS Skill Competencies as required by State Licensure and / or National Registry requirements annually by the Medical Director and his/her designee. Required skills are at the discretion of the Medical Director.

6.8. NEW Medics coming from outside Elkhart County must do a Mega Code Simulation with the Medical Director before being released to work independently.

**Paramedic Skills** must be signed by members of the educational staff of the supervising hospitals as identified by the Medical Director and per Indiana Rules and Regulations. These individuals can only sign for skills that do not exceed their certification level.
**BLEEDING CONTROL**

*For life-threatening bleeding from an arm or leg and a tourniquet is NOT available OR for other traumatic bleeding. APPLY DIRECT PRESSURE ON THE WOUND*

1. Cover the wound with a clean bandage and apply pressure by pushing directly on it with both hands.
2. If the wound is large and deep, try to “Pack” the cloth down into the wound. (See Packing Wounds Below)
3. Apply continuous pressure with both hands directly on top of the bleeding wound.
4. Push down as hard as you can and hold pressure to stop bleeding.

**PACKING WOUNDS**

*Pack (stuff) the wound with a bleeding control (also called a hemostatic) gauze, plain gauze, or a clean cloth and then apply pressure with both hands*

1. Open the clothing over the bleeding wound and wipe away any pooled blood.
2. Pack (stuff) the wound with bleeding control gauze, plain rolled gauze or trauma dressings.
3. Your goal is to completely and tightly pack the wound cavity to stop hemorrhage. Begin packing the gauze into the wound with your finger, while simultaneously maintaining pressure on the wound.
4. The key to successful wound packing is that the wound be very tightly packed, applying as much pressure as possible to the bleeding vessel.
5. Apply steady pressure with both hands directly on top of the bleeding wound for at least 3 minutes.
6. Push down as hard as you can and hold pressure to stop bleeding.
7. **DO NOT USE LIQUID OR POWDERED CLOTTING AGENTS**

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**FOR LIFE-THREATENING BLEEDING FROM AN ARM OR LEG AND A TOURNIQUET IS AVAILABLE:**

- **INDICATIONS**
  - A tourniquet or B/P Cuff should be used to control potentially fatal hemorrhagic wounds only after other means of stopping blood loss have failed

- **PRECAUTIONS**
  - A tourniquet applied incorrectly can increase blood loss and lead to death
  - Damage is unlikely if the tourniquet is removed within an hour. Low risk to tissue is acceptable over death secondary to hypovolemic shock
  - A commercially made tourniquet is the only acceptable tourniquet to be used

- **TECHNIQUE**
  - Attempt to control hemorrhage using direct pressure, elevation and indirect pressure on pressure points prior to considering the application of a tourniquet
  - The tourniquet should never be obscured by clothing or bandages
  - Apply tourniquet proximal to the wound and NOT across any joints
  - Tighten tourniquet until bleeding stops
  - Mark time and date of application on patient’s skin or on the tourniquet. Use permanent marker.

- **Note:** A tourniquet will cause pain but it is necessary to stop life-threatening bleeding.
  - Keep tourniquet on throughout hospital transport – a correctly applied tourniquet should only be removed by the receiving hospital.