Franciscan HEALTH
Dyer • Hammond

EMS System

EMR-EMT-Advanced-Paramedic
Standard Operating Procedures

8/9/2018

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Introduction from the EMS Medical Directors and EMS Coordinator

Franciscan Health Hammond and Dyer Hospitals are proud to update these evidence-based protocols for all affiliated Lake County Emergency Medical Service providers. The protocols continue to be developed by the Medical Direction Committee 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 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 treatments 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.

EMERGENCY MEDICAL RESPONDER

- EMERGENCY MEDICAL RESPONDER, EMT, EMT BA/ADVANCED EMT, and PARAMEDIC protocols

EMERGENCY MEDICAL RESPONDER STOP

EMT

- EMT, ADVANCED EMT, and PARAMEDIC protocols

EMT STOP

ADVANCED EMT

- ADVANCED EMT and PARAMEDIC protocols

ADVANCED EMT STOP

PARAMEDIC

- PARAMEDIC protocols

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 care should be completed before ALS. Advanced providers are responsible for all appropriate BLS interventions. If an intervention is completed at a lower level, it should not duplicated unless specified. Ex. Epi-pen (BLS) + 1:1000 Epi SQ (ALS)

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 unique orders or requests are present or communication is not possible with the physician at the receiving facility, use Base physician at Franciscan Health Hammond Hospital]

Statement Regarding Medication Shortages

Due to the Medications shortages that we have experienced throughout the region over the past year, and the expectation that this may continue, we have listed medications as preferred and acceptable.

- Preferred medications/concentrations should be used when available
- Acceptable medications/concentrations can be used as a backup only if preferred medications are not available

Every effort should be made to make available preferred medications/concentrations.

It is important to remember to double check the medication to be administered 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 Lake County

Franciscan Health Hammond and Dyer 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 this protocol format will help make your job easier and better assist you in the care of your patients. We would like to thank everyone who provided input which contributed to these protocols.

Protocol signatures of approval dated this 9th day of August, 2018.

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Franciscan Health Hammond	Franciscan Health Dyer	Franciscan Health H/D
EMS Medical Director	EMS Medical Director	EMS Coordinator

Medical Emergencies

1.0 Cardiac Emergencies

1.1 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)
- For all other patients in cardiac arrest, in whom appropriateness of resuscitation is questionable, the EMS provider MUST start BLS care, including defibrillation awaiting arrival of a paramedic unit.

EMERGENCY MEDICAL RESPONDER/EMT/ADVANCED EMT STOP

PARAMEDIC

- Consider Field terminations of resuscitation ONLY if a patient meets ALL of the following:
  - **Completed protocol appropriate for asystole with NO response to interventions in 20 minutes**
  - 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

- Sections A and B outline the patient’s code status in the POST
- The Temperature of the patient is not an indication of definitive death

1.2 Cardiac Arrest: PEA and Asystole

EMERGENCY MEDICAL RESPONDER

- Recognize
- CPR and AED
- Check for DNR or POST directive
- Perform 2 minute cycles of high quality CPR (hard and fast) Rate should be around 100-120 beats per minute, at least 2 inches deep in an adult

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 mg in 10 mL) : dose 1 mg IV/IO**; repeat every 3 - 5 minutes
    - Optional: **Epinephrine (1 mg in 1 mL)** may be diluted with **9ml of normal saline**.
- Place advanced airway as appropriate
- Refer to the 1.1 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 CO_2 recommended 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 be given as soon as possible as ROSC is reduced by 4% for every minute it is delayed

1.3 Cardiac Arrest: V-Fib/Pulseless V-Tach

EMERGENCY MEDICAL RESPONDER

- Recognize
- CPR and AED
- Check for DNR or POST directive
- Perform 2 minute cycles of high quality CPR (hard and fast) Rate should be around 100-120 beats per minute, at least 2 inches deep in an adult

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

- **Defibrillate** every 2 minutes as long as rhythm persists
- **Epinephrine (1 mg in 10 mL): dose 1mg IV/IO**; repeat every 3 - 5 minutes
    - Optional: **Epinephrine (1mg in 1 mL)** may be diluted with **9ml of normal saline**.
- Administer **Lidocaine 1.5 mg/kg IV/IO**; may repeat .75 mg/kg in 3 - 5 minutes Max 3 mg/kg
- Consider: **Magnesium sulfate 1-2 grams diluted in 10 mL NS IV/IO**, for Torsade's de Pointes
- Refer to the 1.1 Cardiac: Termination of Resuscitation Protocol as needed

Key Points/Considerations

- 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
- 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 CO_2 is recommended for assessment of chest compression effectiveness, advanced airway placement, and ROSC.
- If sufficient personal, intubation may be performed with limited interruption of CPR

1.4 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 purple top 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
- Additional IV access as needed while enroute if time permits

Key Points/Considerations

- Do not administer nitroglycerin if the patient has taken Sildenafil (Viagra) of Vardenafil (Levitra) within the last 6 hours or Tadalafil (Cialis) within the last 48 hours
- Franciscan Health Hammond and Dyer will never divert a STEMI patient while on bypass

1.5 Cardiac: Cardiogenic Shock

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Place patient supine unless dyspnea is present

EMERGENCY MEDICAL RESPONDER STOP

EMT

- 12 lead ECG and transmit

EMT STOP

ADVANCED EMT

- Vascular access, with purple top 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 second 500 mL bolus may be given
        - Check for signs of pulmonary edema, DO NOT give if rales present

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

1.6 Cardiac: Wide Complex Tachycardia with a Pulse

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Have AED available

EMERGENCY MEDICAL RESPONDER STOP

EMT

- 12 lead ECG and transmit

EMT STOP

ADVANCED EMT

- Vascular access

ADVANCED EMT STOP

PARAMEDIC

UNSTABLE (Rate >150)

- Refer to 2.4 General: Procedural Sedation protocol if time permits
- **Synchronized cardioversion** (120-200J); may repeat (360J) if 1st attempt unsuccessful
- If cardioversion fails, follow drug regiment for STABLE patient

STABLE (Rate > 150)

- **Lidocaine 1 - 1.5 mg/kg Slow IVP**; may repeat 0.5 - 0.75 mg/kg slow IVP (Max 3 mg/kg)
    - If rhythm converts hang **Lidocaine Drip up to 4 mg/min**

Torsade de Pointes

- **Magnesium Sulfate 2 grams** dilute in 10mL NS over 5-10 minutes IV push

Key Points/Considerations

- UNSTABLE is defined as ventricular rate greater than 150 bpm with symptoms of Severe chest pain, severe 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
- Always record initial rhythm strip and deliver to physician
- Do not delay synchronous cardioversion while awaiting IV access

1.7 Cardiac: Narrow Complex Tachycardia

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Have AED available

EMERGENCY MEDICAL RESPONDER STOP

EMT

- 12 lead ECG and transmit

EMT STOP

ADVANCED EMT

- Vascular access (proximal site preferred)
- Valsalva Maneuvers

ADVANCED EMT STOP

PARAMEDIC

UNSTABLE (Rate > 150)

- Refer to 2.4 General: Procedural Sedation protocol if time permits
- **Synchronized cardioversion** (120-200J); may repeat (360J) if 1st attempt unsuccessful
- If cardioversion fails, follow rhythm appropriate drug regimen for STABLE patient

STABLE (Rate > 150)

- **Adenosine (Adenocard) 6 mg rapid IV** push followed by 20ml NaCl bolus; if unsuccessful:
  - **Adenosine (Adenocard) 12 mg rapid IV push**; repeat 1-2 minutes 12 mg if needed

Key Points/Considerations

- UNSTABLE is defined as ventricular rate greater than 150 bpm with symptoms of severe chest pain, dyspnea, altered mental status, pulmonary edema, or hypotension (systolic BP less than 90 mmHg)
- Cardioversion at manufacturers recommended setting
- Always record initial rhythm strip and deliver to physician
- Do not delay synchronous cardioversion while awaiting IV access

1.8 Cardiac: Symptomatic Bradycardia / Heart Blocks

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Have AED available

EMERGENCY MEDICAL RESPONDER STOP

EMT

- 12 lead ECG and transmit

EMT STOP

ADVANCED EMT

- Vascular access

ADVANCED EMT STOP

PARAMEDIC

- **Atropine 0.5 mg IV**; repeat every 3 - 5 min to max 3 mg
- Begin **transcutaneous pacing** if atropine is ineffective
    - Refer to 2.4 General: Procedural Sedation protocol as needed
- If Hypotensive, and no signs of pulmonary edema, **500 mL bolus NaCl** may be given
- Consider immediate pacing for 2nd degree Type II or 3rd degree Heart Blocks

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 severe 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
- Unit will not pace unless pads AND limb leads are applied

Medical Emergencies

2.0 General/Medical Emergencies

2.1 General: Acute Abdominal Pain / Vomiting

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Consider 12 lead ECG and transmit

EMT STOP

ADVANCED EMT

- Vascular access, **Normal Saline 500-1000 mL IV bolus** as needed

ADVANCED EMT STOP

PARAMEDIC

- **Ondansetron (Zofran) ODT 4 - 8 mg SL**
- **Ondansetron (Zofran) 4 mg IV or IM**; may repeat once in 10 minutes

Key Points/Considerations

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

2.2 General: Pain Management

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Consider 12 lead ECG and transmit

EMT STOP

ADVANCED EMT

- Consider vascular access

ADVANCED EMT STOP

PARAMEDIC

- Continuous cardiac monitoring
- Administer ONE of the following narcotic analgesics
  - **Morphine 2 - 5 mg IV,IM**; repeat every 5 min to max 10 mg
  - **Fentanyl 25-100 mcg slow IV, IN**; repeat every 5 min to max 200 mcg

Key Points/Considerations

- For patients with:
  - Severe burns without hemodynamic compromise
  - Suspected isolated extremity injuries with severe pain
  - Abdominal pain
  - Back pain
- 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 2.4 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 or Fentanyl

2.3 General: Patient Agitation

EMERGENCY MEDICAL RESPONDER

EMT

- Call for Law Enforcement
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Consider 8.3 Special Procedures: Involuntary Restraint protocol if needed

EMT STOP

ADVANCED EMT

- Vascular access if possible and safe for provider

ADVANCED EMT STOP

PARAMEDIC

- Continuous cardiac monitoring
- 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 push; repeat every 5 minutes to max 4 mg amount NS slow IV
  - **Valium (diazepam) 5 mg IV,IM, IN**
  - **Benadryl 25 - 50mg IV, IM** for possible Synthetic THC

Key Points/Considerations

- If the patient is in police custody and/or has handcuffs on, they should 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
- ***Medication sedation is intended for behavioral emergencies. Call medical control if the field impression involves trauma or a significant medical problem***

2.4 General: Procedural Sedation

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER STOP

EMT

EMT STOP

ADVANCED EMT

- Vascular access

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor with continuous pulse oximetry
- 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)
  - **Midazolam (Versed) 0.05 mg/kg IV**; repeat every 5 minutes to max of 10mg
- 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
- For ranged doses, titrate to desired effect

2.5 Medical: Allergic Reaction / Anaphylaxis

EMERGENCY MEDICAL RESPONDER

- ABC Vital signs
- Apply appropriate oxygen therapy

EMERGENCY MEDICAL RESPONDER STOP

EMT

- If severe reaction (Wheezing/stridor, face/airway swelling, altered mental status)
  - Administer the **Patient's Epi Pen** or
  - **Epinephrine (1 mg in 1 mL): dose 0.3 mg (0.3 mL) Intramuscular**

EMT STOP

ADVANCED EMT

- Vascular access; **Normal Saline 500-1000 mL IV bolus** as needed
- If wheezing, **Albuterol 2.5 mg via nebulizer**; repeat once

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**
- **Moderate symptoms**: Wheezing, nausea, vomiting, diarrhea, face, neck, tongue flushing, swelling
  - **DuoNeb (Albuterol 2.5 mg + Atrovent 0.5 mg in 2.5 mL mixed together), via Nebulizer**
  - **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
  - **Epinephrine (1mg in 10 mL): dose 0.01 mg/kg (0.3 mg max) IV**, *If no other Epi Given.*
  - If BLS and less invasive ALS airway maneuvers fail, attempt Intubation
    - 7.5 Procedure: Quick Track Cricothyrotomy may be considered *only after all other Airway interventions have been exhausted.*

2.6 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 less than normal and patient is able to swallow on command, give **Oral Glucose PO**
- Call for ALS Intercept if patient is unable to swallow on command, or mental status is altered.

EMT STOP

ADVANCED EMT

- Vascular access
- Blood glucose level above 400 mg/dL
  - **Normal Saline 500-1000 mL IV bolus**
- Blood glucose level below normal range (< 60-80 mg/dL) and signs and symptoms of hypoglycemia
  - **Dextrose 50% 25 grams IV**; repeat 10 minutes
    - Unable to obtain vascular access, **Glucagon 1 mg IM**, Subcutaneous

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor

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 a sugar substitute

2.7 Medical: Overdose / Toxic Exposure

EMERGENCY MEDICAL RESPONDER

- Opiate OD: **Naloxone 2mg IN**; 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 STOP

EMT

- Check blood glucose level, If level is abnormal refer to 2.6 Medical: Diabetic Emergencies protocol.
- Consider 12 lead and transmit

EMT STOP

ADVANCED EMT

- Vascular access
    - Opiate OD: **Naloxone (Narcan) 0.5 mg IV, IM**; repeat to max 6 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
    - Calcium channel or Beta blocker OD: **Glucagon 1 mg IM**, Subcutaneous
    - Synthetic THC OD: **Benadryl 25 - 50mg IV, IM**
    - Tricyclic antidepressant OD: **Sodium Bicarbonate 1 mEq/kg IV**
    - Sympathomimetic OD (cocaine/amphetamines): **Midazolam (Versed) 2 - 5 mg IV, IM, IN**

Key Points/Considerations

- Patients experiencing a Carfentanyl overdose may require multiple doses of Narcan
- Use Narcan with caution with cancer patients
- Do not use Narcan on intubated patients
- Organophosphate poisoning: SLUDGE: Salivation, Lacrimation, Urination, Diarrhea, Gastric cramps, Emesis

2.8 Medical: Seizures

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Check blood glucose level; If level is abnormal refer to 2.6 Medical: Diabetic Emergencies protocol.

EMT STOP

ADVANCED EMT

- Vascular access

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 mg 5 minutes to max 4
        - **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 6.3 OB/GYN: Eclampsia protocol if patient is pregnant or recently post-partum

2.9 Medical: Shock / Hypoperfusion

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Place patient in supine position unless dyspnea is present
- Cover the patient to maintain body temperature

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Consider 12 lead ECG and transmit

EMT STOP

ADVANCED EMT

- Vascular access
- If no pulmonary edema (rales): **Normal Saline 500 - 1000mL bolus IV**
- Obtain additional vascular access as time permits

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor
- A second 500 cc bolus may be given, if no signs of pulmonary edema

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, trauma, or others ectopic pregnancy, trauma or others

2.10 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

EMERGENCY MEDICAL RESPONDER STOP

EMT

Consider 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

Key Points/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

2.11 Medical: Suspected Stroke

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Perform an initial Stroke Scale such as the Cincinnati Stroke Scale
- If the patient fails the initial Stroke Scale, consider a LVO Scale such as RACE or Fast-ED

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Check blood glucose level, if level is abnormal refer to 2.6 Medical: Diabetic Emergencies protocol.
- If the patient fails the initial stroke screen but passes the LVO Scale, consider transport to the nearest **Primary or tPA-ready Stroke Facility** *(if less than 25 minutes away)*
- If the patient fails both stroke scales, consider transport to a **Comprehensive or Thrombectomy-ready Stroke Facility** *(if less than 25 minutes away)*
- Advise the receiving facility of a STROKE ALERT as soon as possible

EMT STOP

ADVANCED EMT

PARAMEDIC

Vascular access

Key Points/Considerations

Rapid Arterial oCclusion Evaluation (RACE Scale) Scoring: 0-9 ≤ 4 PASS ≥5 FAIL

Test Item	Score = 0	Score = 1	Score = 2
Facial Palsy	Absent	Mild	Moderate/Severe
Arm Motor	Normal/Mild	Moderate	Severe
Leg Motor	Normal/Mild	Moderate	Severe
Head/GazeDeviation	Absent	Present	N/A
Aphasia* (if righthemiparesis)	Performs Both Tasks	Performs 1 Task	Performs Neither Tasks
Agnosia* (if lefthemiparesis)	Patient Recognizes Arm and Impairment	Unable to Recognize Arm or Impairment	Unable to Recognize BOTH Arm and Impairment

- Aphasia: Ask the patient to 1. “Close your eyes” and 2. “Make a fist”
- Agnosia: Ask the patient 1. “Whose arm is this?” and 2. “Can you lift both arms and clap?”

Medical Emergencies

3.0 Respiratory Emergencies

3.1 Respiratory: Acute Asthma and COPD with Wheezing

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

EMT STOP

ADVANCED EMT

- Vascular access
- Albuterol 2.5 mg via nebulizer; may repeat once
- **Epinephrine (1 mg in 1mL): dose 0.3 - 0.5 mg IM**, if severe distress (call MC for order)

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor
- Consider starting 7.6 CPAP for moderate to severe distress.
- **DuoNeb (Albuterol 2.5 mg + Atrovent 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) **ONE** of the following:
    - **Epinephrine (1 mg in 1 mL): dose 0.3 - 0.5 mg IM**, if severe distress
    - **Epinephrine (1 mg in 10 mL): dose 0.5 mg IV**

Key Points/Considerations

- Not all wheezing is caused by 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.
- Solu-Medrol contraindicated in patients with a fever

3.2 Respiratory: Acute Pulmonary Edema

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Sit patient upright, if possible

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Consider 12 Lead ECG and transmit

EMT STOP

ADVANCED EMT

- Vascular access
- **Nitroglycerin 0.4 mg**; repeat every 3 - 5 minutes, if systolic mmHg BP greater than 90
- If wheezing, **Albuterol 2.5 mg**; repeat once

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor
- Consider starting CPAP for moderate to severe distress.
- **Furosemide (Lasix) 40 mg IVP** or **double** the patient's home dosage up to 80 mg
- If Wheezing, DuoNeb (Albuterol 2.5 mg + Atrovent 0.5 mg in 2.5 mL mixed together), via nebulizer

Key Points/Considerations

- 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
- Nitro and Lasix and potentiate each other causing vasodilatation and hypotension. **Assess** blood pressure before administration of each medication

3.3 Respiratory: Medication Facilitated Intubation

PARAMEDIC

PARAMEDIC ONLY

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 and **requires base station physician approval**.

- Cardiac Monitor and pulse oximetry

Pre-intubation Sedation

- Administer **Etomidate (Amidate) 0.4 mg/kg (40 mg max) rapid IV push**
- **Intubate** if sufficient sedation has been achieved
    - Confirm Placement via auscultation, CO2 detector and ETCO2 monitor if available and secure tube
        - 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.

Post-intubation Sedation

- Administer **Versed 5 mg**
    - **May repeat ONCE if needed as long as B/P is greater than 100 systolic**

Key Points/Considerations

- Pre-oxygenation and oxygenation are important when possible.
- Indications for Medication Facilitated Intubation include (but are not limited to) Hypoxia or inability to protect airway despite all other airway procedures, Traumatic injury with GCS < 8

Trauma

4.0 Trauma Guidelines and Emergencies

4.1 Trauma: Transport Guidelines

EMERGENCY MEDICAL RESPONDER

EMT

EMT BA/ADVANCED EMT

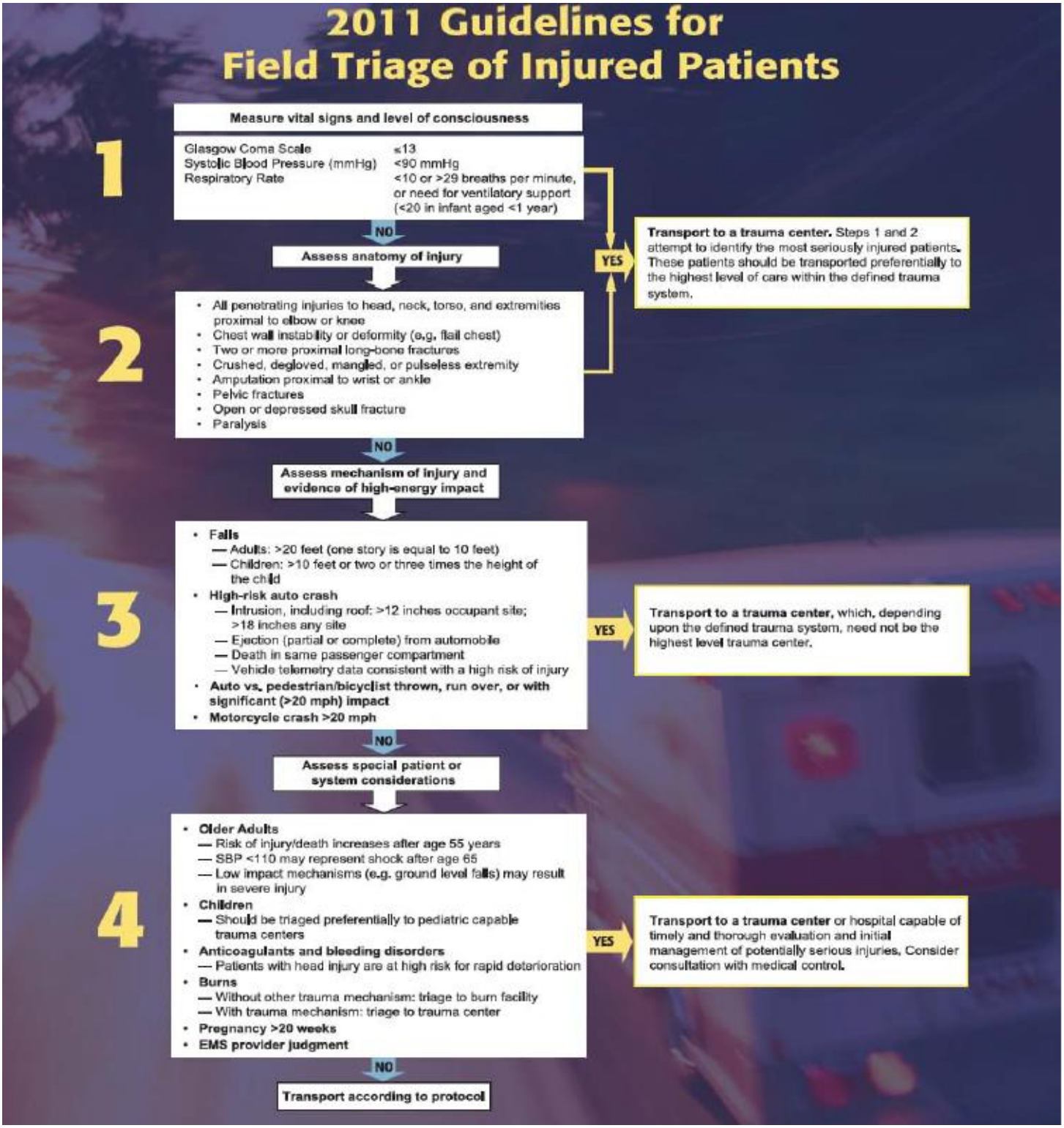
PARAMEDIC

- Assess patient according to the 4.2 Trauma: 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 **Step 1 or 2** criteria of Field Triage Guidelines 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:
- Patients meeting **Step 3 or 4** criteria should be transported to the nearest **Level III Trauma Center**
    - Via Ground Transport if less than 45 minutes:
- Exceptions in which patient should be transported via ground to the closest Emergency department:
    - Ground or Air transport time greater than 45 minutes
    - Weather or other local conditions prohibit ground or 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 should not be transported via aeromedical transport
- Consider TXA for extended transport >15minutes See 4.11 Trauma: Hemorrhage / Hypovolemia

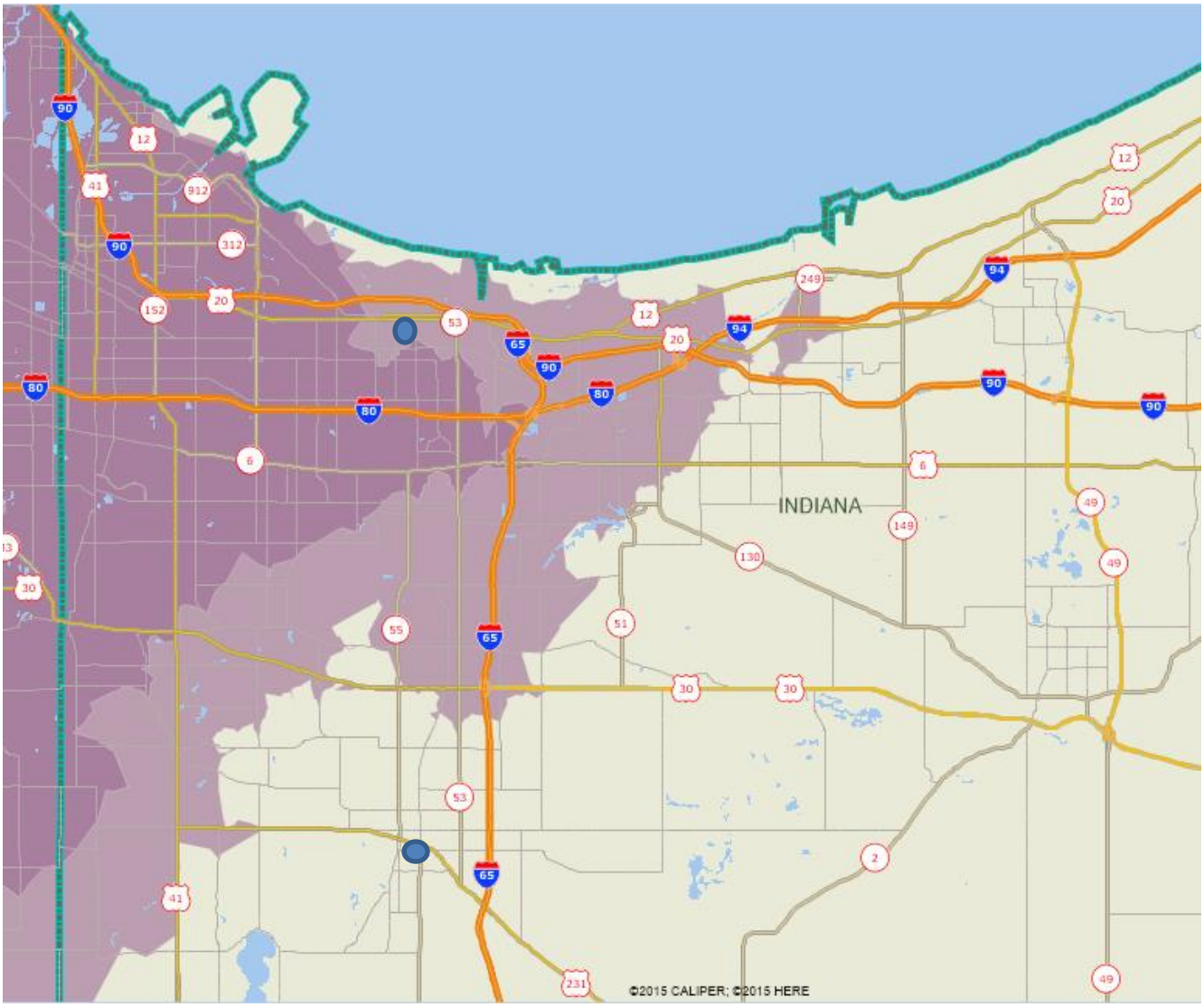
Key Points/Considerations

- 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.

4.2 Trauma: Field Triage Guidelines



4.3 Trauma: Coverage Maps



Level 1

- University of Chicago
- Advocate Christ

Level 3

- Gary Methodist
- Franciscan Health Crown Point

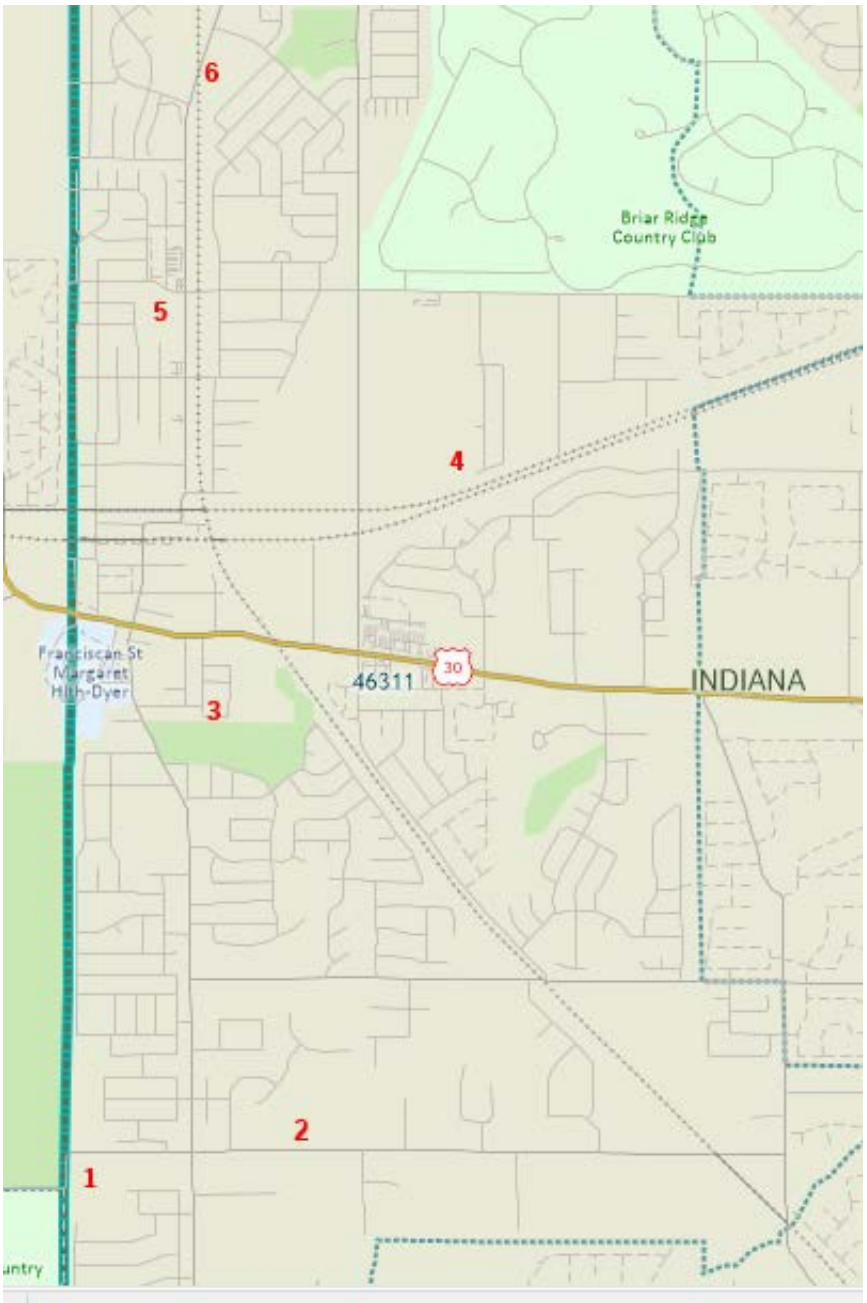
4.4 Trauma: Pre-established Landing Zones (Hammond)

1	N 41° 41' 15"	W 87° 30' 2"	777 Casino Center Drive	Horseshoe Casino Heliport
2	N 40° 40' 8"	W 87° 30' 36"	2400 Sheffield Ave	Wolf Lake Park
3	N 40° 40' 23"	W 87° 30' 28"	2211 Calumet Ave	Clark Athletic Field
4	N 41° 39' 43"	W 87° 29' 29"	129th St. And White Oak	AMOCO Park
5	N 41° 38' 11"	W 87° 30' 54"	4221 Towle	Lincoln Elementary School
6	N 41° 37' 41"	W 87° 29' 41"	1519 Hoffman	Bishop Noll High School
7	N 41° 36' 24"	W 87° 30' 57"	Waltham St. and Harrison	Eggers Elementary School
10	N 41° 35' 12"	W 87° 26' 24"	6915 Grand Ave	Morton High School Parking Lot
11	N 41° 35' 9"	W 87° 30' 37"	6931 Madison Ave	Edison Elementary Parking Lot
12	N 41° 34' 53"	W 87° 28' 30"	2239 173rd St	Purdue University Parking Lot
13	N 41° 34' 35"	W 87° 29' 11"	1670 175th St.	Gavit High School
14	N 41° 34' 39"	W 87° 27' 9"	175th St. and Parish	Dowling Park
15	N 41° 34' 18"	W 87° 30' 1"	River Drive and Columbia	Riverside Park
16	N 41° 31' 3"	W 87° 28' 57"	7700 Cabela Dr.	Cabela's Parking Lot
17	N 41° 36' 54"	W 87° 31' 26"	5454 Hohman Ave	FH Hammond Helipad

- The Highlighted Zones (1 and 17) are dedicated helipads. It is always preferable to utilize these over makeshift helipads.
- Other areas not on this list may be used as landing zones as long as they meet the criteria in the 4.5 Trauma: Helicopter Utilization Protocol
- LZ 8 & 9 have been removed (Sept 2018)

4.4 Trauma: Pre-established Landing Zones (Dyer)

LZ1	N 41° 31.052'	W 87° 31.77’	100 W 81st Ave	Faith Church Parking Lot
LZ2	N 41° 28.371'	W 87° 30.839'	14600 W 81st Ave	Bibich Soccer field
LZ3	N 41° 29.418'	W 87° 31.024'	2231 Nondorf St.	Pheasant Hills Parking Lot
LZ4	N 41° 30.052'	W 87° 30.213'	1000 Seberger Way	Central Park Field
LZ5	N 41° 30.464'	W 87° 31.216'	1330 Sheffield Ave	Stardust Bowling Parking Lot
LZ6	N 41° 31.052'	W 87° 30.970'	500 Northgate Dr	St. Maria Goretti Parking Lot



Other areas not on this list may be used as landing zones as long as they meet the criteria in the 4.5 Trauma: Helicopter Utilization Protocol

4.5 Trauma: Helicopter Utilization

EMERGENCY MEDICAL RESPONDER

EMT

EMT BA/ADVANCED EMT

PARAMEDIC

- Once a request for a helicopter has been made
  - Make medical direction contact and advise of your intention to initiate air transport
  - Continue to follow appropriate patient care protocols
- Establish an appropriate LZ (Landing Zone)
  - 100' X 100'
  - Flat and clear of overhead obstructions such as trees, poles and wires
  - Mark landing zone with a marker at each corner and one upwind
- Communicate with flight crew
  - Identify obstacles close to the landing zone and communicate all pertinent information about the landing zone
  - If it is dark, shine lights on potential obstacles such as power lines. DO NOT shine lights directly at the aircraft
- Once the aircraft has landed
  - Do not approach aircraft until signaled to do so
  - Always approach Helicopter from the front in a crouched position

Key Points/Considerations

- Helicopters will not transport a patient in cardiac arrest
- If using Franciscan Health Hammond's helipad
  - Contact the Emergency Department to allow security enough time to prepare the helipad and escort the medics to the helipad
  - The patient must be brought directly to the helipad (not through the Emergency Department. The medics must park just outside of the door to the parking garage and wait for security to escort them to the helipad

4.6 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 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

- Consult MEDICAL CONTROL physician for direct transport to a Burn Center via aeromedical transport service if needed

EMT STOP

ADVANCED EMT

- Vascular access at 2 sites (if severe) Normal saline 500 - 1000mL
    - It is acceptable to insert through burned skin if necessary
- Cardiac monitor

ADVANCED EMT STOP

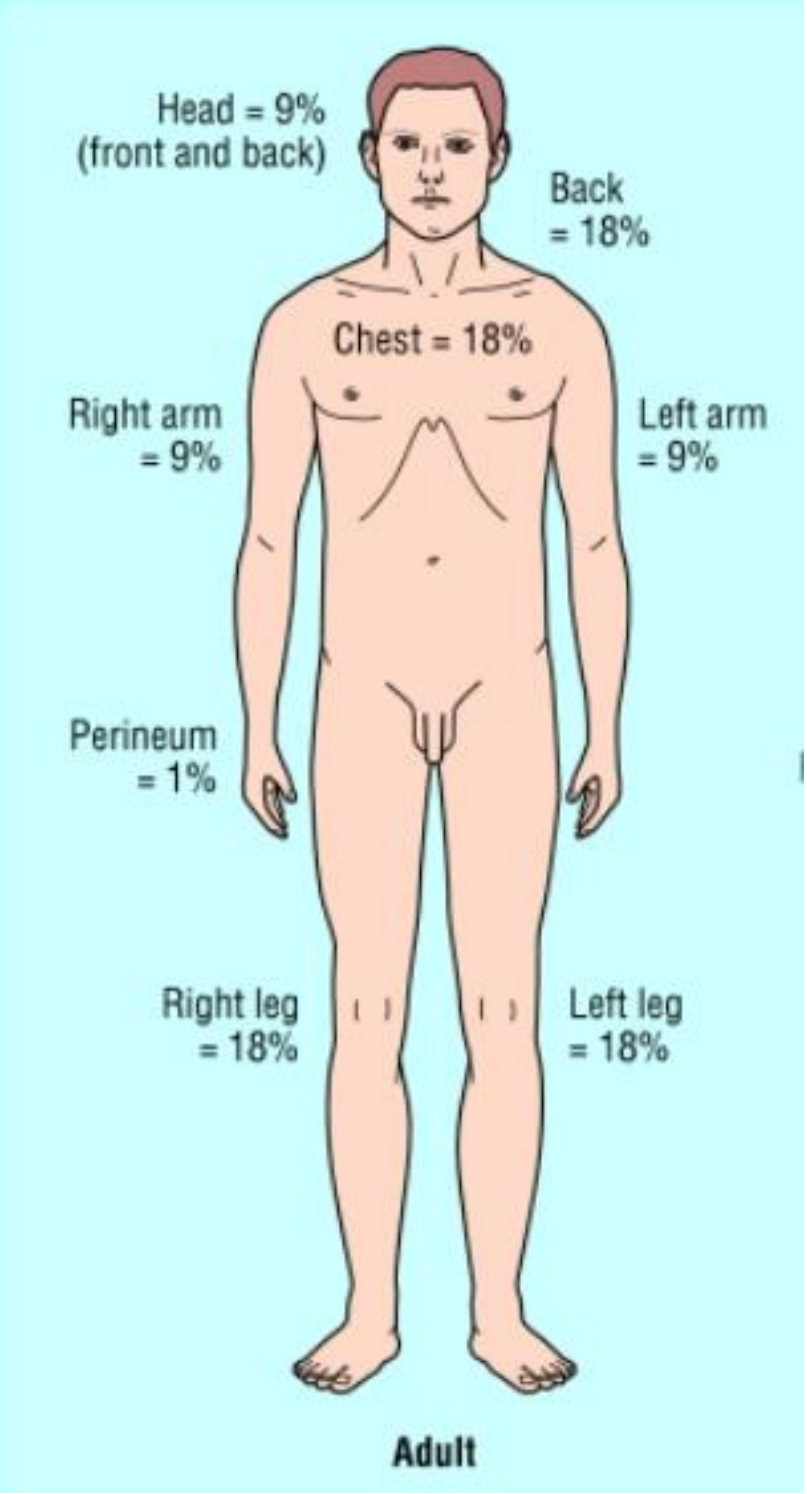
PARAMEDIC

- If patient has signs of airway involvement be prepared to intubate
    - Refer to 3.3 Respiratory: Medication Facilitated Intubation protocol as needed
- Refer to 2.2 General: Pain Management protocol as needed

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
- When considering total area of a burn, DO NOT count first degree burns
- Consider Cyanide Toxicity and Carbon Monoxide poisoning
- Parkland Formula, 4ml x %BSA x weight KG : Half given in first 8 hrs

4.7 Trauma: Adult Rule of Nines



4.8 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

- Consider transport to a Trauma Center using 4.1 Trauma: Transport Guidelines protocol

EMT STOP

ADVANCED EMT

- Vascular access, with blood draw; use the side opposite the injury if possible
- Refer to 4.11 Trauma: Hypoperfusion / Hypovolemia protocol for fluid administration

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor
- 7.7 Needle decompression if patient has signs and symptoms consistent with Tension Pneumothorax AND hemodynamic compromise
  - 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 2.2 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

4.9 Trauma: Crush Injuries

EMERGENCY MEDICAL RESPONDER

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

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Consider transport to a Trauma Center using 4.1 Trauma: Transport Guidelines protocol

EMT STOP

ADVANCED EMT

- Vascular access at 2 sites, with blood draw;
- **If blood pressure < 90 systolic or patient shows other signs of hypoperfusion**
    - **Normal saline 500 - 1000mL IV bolus**

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor
- If one complete extremity crushed more than 2 hours or two extremities crushed more than 1 hour:
    - One minute prior to extrication: Sodium Bicarbonate 50 mEq IV
- Refer to 2.2 General: Pain Management protocol as needed

Key Points/Considerations

- "5 P's" of crush injuries: **Pain, Paresthesia, Paralysis, Pallor, Pulselessness**
- Consider 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.

4.10 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 with saline unless open globe injury present
- Vital Signs

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

4.11 Trauma: Hemorrhage / Hypovolemia

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Control external bleeding with direct pressure. *Apply a tourniquet for severe hemorrhaging to an extremity*
- Wrap amputated and avulsed parts in sterile gauze and seal in a plastic bag then place in another container with ice. Keep parts dry, sterile and cool. DO NOT place directly on ice

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Consider transport to a Trauma Center using 4.1 Trauma: Transport Guidelines protocol

EMT STOP

ADVANCED EMT

- Vascular access, (2 sites, large-bore if possible)
- **Permissive hypotension**: only give fluids for BP<90 SBP or other signs of hypoperfusion
    - refrain from excessive amounts of saline due to clotting factor wash out.

ADVANCED EMT STOP

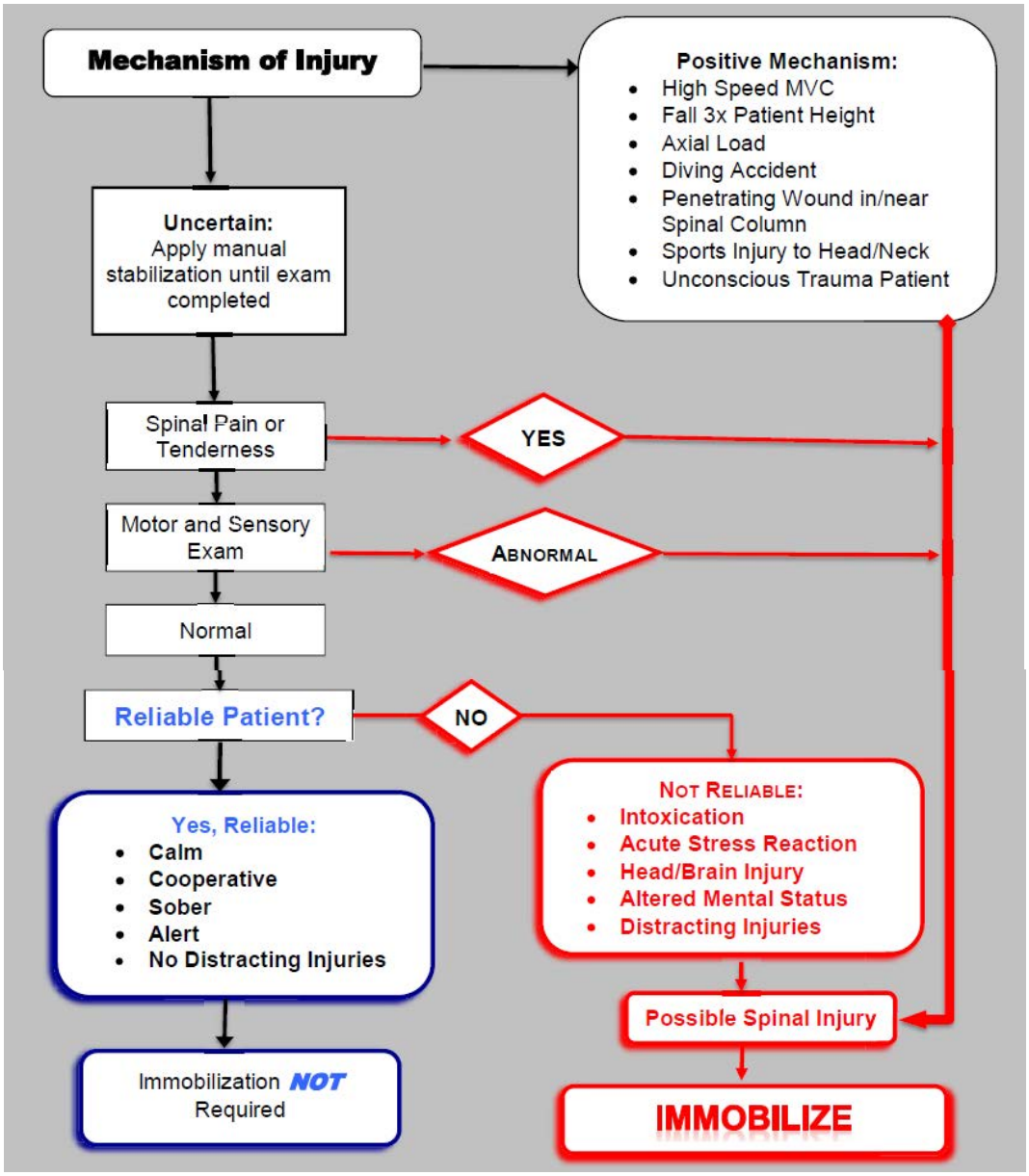
PARAMEDIC

- Cardiac monitor
- **TXA Administration**. All Trauma patients appearing to be **at least 16 years of age** with ongoing significant hemorrhage (systolic BP < 90 or HR > 110 bpm) or who are considered to be a significant risk of hemorrhage and are **within 3 hours of the injury** should receive TXA.
- **LOADING DOSE : Mix 1 gram TXA in 100 ml NS and piggyback over 10 min (see drip rates below)**
- **CONTRAINDICATIONS FOR TXA :**
- Past history of thrombotic disorder such as deep venous thrombosis or pulmonary embolus.
- ****** Do Not Delay Transport to administer TXA***
- ****** TXA Should not be administered to patients with less than 15 minutes of transoport***

Key Points/Considerations

- Apply tourniquet proximal to the wound and NOT across any joints
- Tighten tourniquet until bleeding stops. If too loose, it may increase bleeding
- Once applied correctly, a tourniquet should only be removed by the receiving hospital
- Drip Rates for TXA: 10 Drop set = 1.5 drops / second
  15 Drop set = 2.5 drops / second
  20 Drop set = 3.5 drops / second

4.12 Trauma: Spinal Immobilization



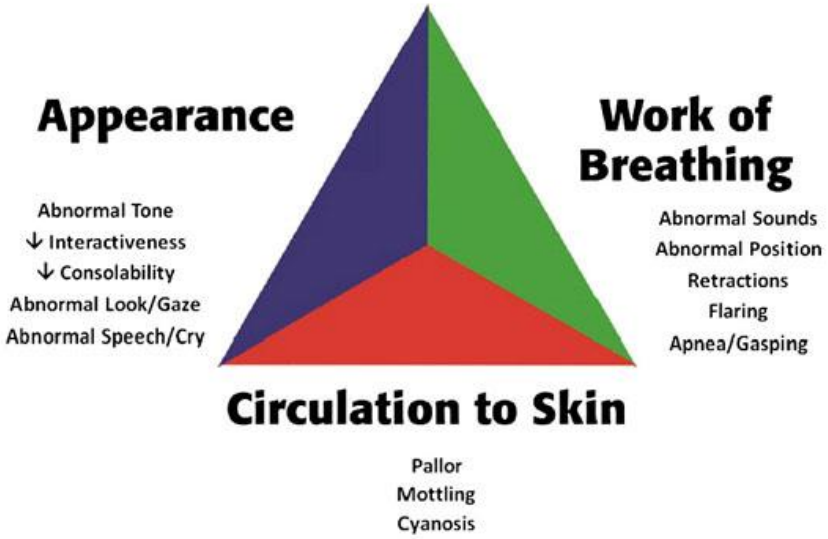
Key Points/Considerations

Cervical collar may be appropriate without the use of Long Spine Board, if:

1. No cervical spine tenderness or anatomic abnormality.
2. No neurologic findings or complaints.
3. No significant distracting injury.
4. No intoxication with alcohol or drugs
5. No penetrating trauma to head, neck, or torso and no evidence of spinal injury.
6. Patients ambulatory on scene from blunt head trauma.
7. Isolated neck pain with no back injury.

5.0 Pediatric Emergencies

- For these protocols, pediatric patients are defined as children having puberty (underarm hair development in males and breast development in females
- Pediatric Primary Assessment Triangle:



- Have Broselow Pediatric Tape or similar device available to accurately determine the correct size of the patient
- Pediatric Medication Dosages SHOULD NOT EXCEED adult dosages
- Normal Vitals:

Age	Respirations	Pulse	Systolic BP
Newborn	30 – 60	100 - 180	>60
Infant (< 1 year)	30 – 60	100 - 160	>60
Toddler (1 – 3 years)	24 – 40	90 - 150	>70
Preschooler (3 – 5 years)	22 – 34	80 - 140	>75
School-aged (6 – 8 years)	18 – 30	70 - 120	>80

5.1 Pediatric Trauma: Hypovolemic Shock

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Control external bleeding with direct pressure
- Vital signs
- Keep the patient warm

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

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

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor

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, 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

5.2 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

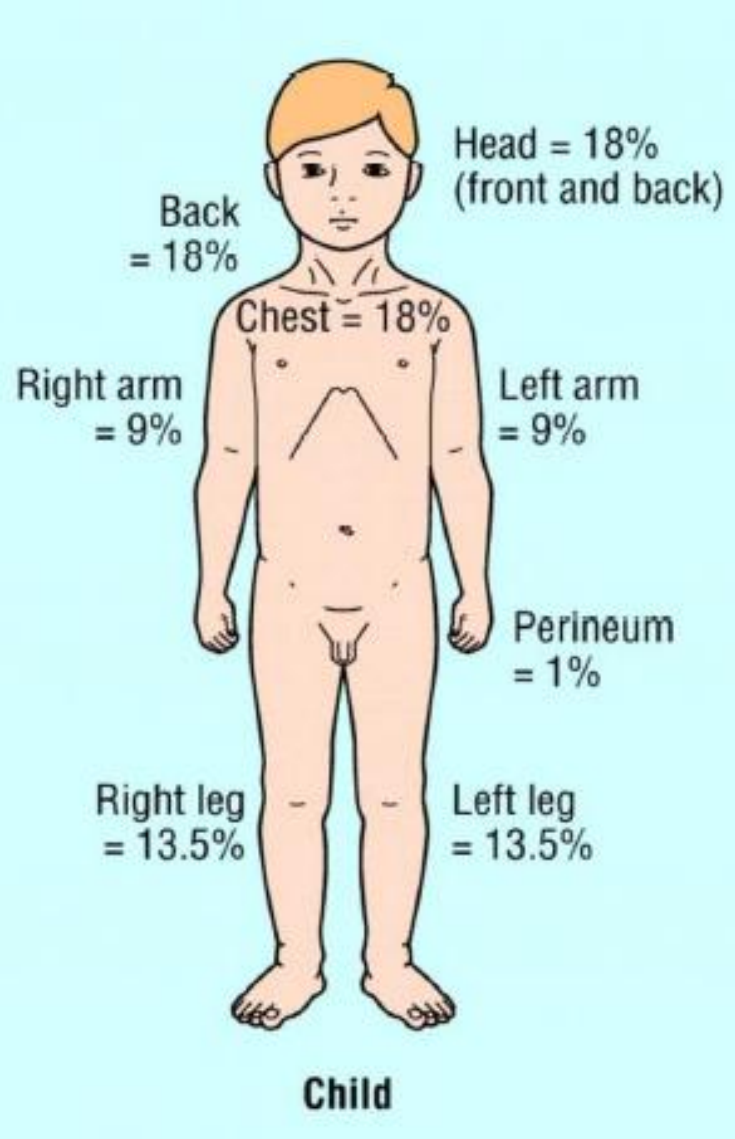
PARAMEDIC

- Cardiac Monitor
- If patient has signs of airway involvement be prepared to intubate
- See 5.15 Pediatric: Pain Management OR 5.16 Pediatric: Procedural Sedation protocols as needed

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
- Consider Cyanide Toxicity and Carbon Monoxide poisoning
- Consider aeromedical transport to scene for transport to a pediatric burn center
- Parkland Formula, 4ml x %BSA x weight KG : Half given in first 8 hrs

5.3 Pediatric Trauma: Burns Rule of Nines



5.4 Pediatric Cardiac Arrest: Asystole or PEA

EMERGENCY MEDICAL RESPONDER

- ABC: Recognize the need for CPR and AED
- Perform 2 minute cycles of high quality CPR (hard and fast)

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

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

ADVANCED EMT STOP

PARAMEDIC

- Cardiac monitor
- Consider and treat (H's and T's) as appropriate
- **Epinephrine (1 mg in 10 mL): dose 0.01 mg/kg IV**; repeat every 3-5 minutes
    - Optional: Epinephrine (1 mg in 1 mL): may be diluted with 9 mL of normal saline
- Place advanced airway as appropriate

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
- Minimize CPR interruptions
- H's and T's Include: 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.

5.5 Pediatric Cardiac Arrest: V-Fib / Pulseless V-Tach

EMERGENCY MEDICAL RESPONDER

- ABC: Recognize need for CPR and AED
- Perform 2 minute cycles of high quality CPR (hard and fast)

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

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

ADVANCED EMT STOP

PARAMEDIC

- Cardiac monitor
- Consider (H's and T's) as appropriate
- Initial defibrillation at 2 J/kg, repeat every two minutes at 4 J/kg
- **Epinephrine (1 mg in 10 mL): dose 0.01 mg/kg IV/IO**; repeat every 3 5 minutes
    - Optional: Epinephrine (1 mg in 1 mL): may be diluted with 9ml of normal saline
- **Lidocaine 1mg/kg IV/IO** (Max dose 3mg/kg); repeat every 3 - 5 min
- Place advanced airway when appropriate

Key Points/Considerations

- Consult MEDICAL CONTROL physician and begin transport to the closest hospital as soon as possible
- Minimize chest compression interruptions
- Use the small pediatric pads if available for patients less than 10 kg
- V-fib cardiac arrest is rare in children. Consider 5.14 Pediatric Medical: Overdose / Toxic Exposure protocol including tricyclic antidepressants.

5.6 Pediatric Cardiac: Symptomatic Bradycardia

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- If heart rate is less than 60 bpm and patient's mental statue and respiratory rate are decreased, ventilate with BVM
- If no improvement with ventilations, start CPR

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Consider 12 lead and transmit

EMT STOP

ADVANCED EMT

- Vascular access (*IO if CPR in progress*); **Normal Saline 20 mL/kg IV/IO** bolus, as needed

ADVANCED EMT STOP

PARAMEDIC

- Cardiac monitor
- Consider and treat reversible H's and T's
- **Epinephrine (1 mg in 10 mL): dose 0.01 mg/kg IV/IO**; repeat every 3-5 minutes
    - Optional: Epinephrine (1 mg in 1 mL): 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 5.16 Pediatric: Procedural Sedation protocol
- Place advanced airway as appropriate

Key Points/Considerations

- Consult MEDICAL CONTROL physician as soon as possible
- Bradycardia Newborn/Infant -- pulse less than 80 bpm; child over 1 year of age - 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.

5.7 Pediatric Cardiac: Symptomatic Tachycardia

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Consider 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 5.16 Pediatric: Procedural Sedation protocol
- STABLE Wide QRS:
    - **Lidocaine 1mg/kg IV/IO** (Max dose 3mg/kg); repeat every 3-5 min
- 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.

5.8 Pediatric Respiratory: 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

EMT STOP

ADVANCED EMT

- **Albuterol 2.5 mg via nebulizer**
- (Advanced) Call Medical Control for,
  - **Epinephrine (1 mg in 1 mL): 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 proceed to next step;
  - Do not repeat Atrovent; may repeat 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
  - **Epinephrine (1 mg in 1 mL): dose 0.01 mg/kg IM** (0.5 mg max), *if in severe distress*

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

5.9 Pediatric Respiratory: Anaphylaxis / Allergic Reaction

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- If localized reaction, apply ice pack to affected area

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Determine if patient has been given his/her own Epi Pen
- If not and patient severe distress;
    - BLS administer **Epi Pen Jr. or**
    - **Epinephrine (1 mg in 1 mL): dose 0.15 mg IM**
        - if patient weighs more than 30 kg (66 lbs.), **Dose 0.3 mg IM**

EMT STOP

ADVANCED EMT

- Vascular access; **Normal Saline 20 mL/kg IV bolus** as needed
- If patient wheezing, **Albuterol 2.5 mg via nebulizer**

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor

MILD SYMPTOMS: Urticaria, itching, nasal congestion, watery eye

- **Diphenhydramine (Benadryl) 1 - 2 mg/kg (25 mg max) IV or IM**

MODERATE / SEVERE SYMPTOMS: Wheezing/stridor, swelling face, neck, tongue, hypotension, altered LOC

- **DuoNeb (Albuterol 2.5 mg + Atrovent 0.5 mg) via nebulizer**; Do not repeat Atrovent
- **Methylprednisolone (Solu-Medrol) 1 - 2 mg/kg IV**
- If BLS airway maneuvers fail, consider intubation; If unable to intubate, consider 7.4 Procedure: Needle Cricothyrotomy ***only as a last resort when all other airway interventions have failed***

Key Points/Considerations

- Consult MEDICAL CONTROL physician as soon as possible
- If the patient already used an Epi Pen, consult MEDICAL CONTROL prior to administering additional epinephrine or allowing the legal guardian to sign a refusal

5.10 Pediatric Medical: Seizures

EMERGENCY MEDICAL RESPONDER

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

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Check blood glucose level, if level is abnormal refer to 5.11 Pediatric Medical: 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
- IN administration of benzodiazepines is as effective as IV

5.11 Pediatric 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 and patient is able to swallow on command, give **oral glucose;** one unit dose age 5-8 years; ½ unit dose age 1mo – 4 years
- (BLS) Transport immediately or call for ALS Intercept if patient is unable to swallow on command or mental status is altered.

EMT STOP

ADVANCED EMT

PARAMEDIC

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

Patient's Age	Dose of Dextrose
<1 year old	D10% 0.5 gm/kg IV
1 – Puberty	D25% 0.5 gm/kg IV

Optional:

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

- **Glucagon 1 mg IM**, Subcutaneous *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

5.12 Pediatric Medical: Hypoperfusion

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs
- If no fever present, keep the patient warm

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

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

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor

Key Points/Considerations

- Consult MEDICAL CONTROL physician as soon as possible
- For patients with hypovolemia due to bleeding, vomiting, diarrhea or septic shock.
- Consult MEDICAL CONTROL physician if you suspect cardiogenic shock.
- Diagnostic criteria for hypotension includes: capillary refill time greater than 2 seconds, cool, clammy or mottled skin, inability to recognize parents, restlessness, tachycardia, tachypnea, systolic BP less than 70 mmHg (2 years and older) or systolic BP less than 60 mmHg (less than 2 years old).

5.13 Pediatric Medical: Abdominal Pain / Vomiting

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

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

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor
- Consider 5.15 Pediatric General: Pain Management protocol if needed
- > 6 months old; **Ondansetron (Zofran) 0.1 mg/kg IV/IM/ODT** (minimum dose 2 mg for ODT)

Key Points/Considerations

- Consult MEDICAL CONTROL physician as soon as possible

5.14 Pediatric Medical: Overdose / Toxic Exposure

EMERGENCY MEDICAL RESPONDER

- Decontamination as needed
- ABC
- Apply appropriate oxygen therapy
- Vital signs
- Determine what was taken, when and how much, if possible
- Consider contacting Poison Control 1-800-222-1222 for additional information

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

- Vascular access
- Opiate overdose: **Naloxone (Narcan) 0.1 mg/kg IV, IM, Subcutaneous**; 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
    - Sympathomimetic ingestion (cocaine/amphetamine): **Midazolam (Versed) 0.1 mg/kg IV or IM**
    - 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
- Cocaine/Methamphetamine signs and symptoms Seizures, hypertension, tachycardia
- Signs and symptoms of organophosphate poisoning consider SLUDGE
    - Salivation, Lacrimation, Urination, Diarrhea, Gastric cramps, Emesis

5.15 Pediatric General: 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)**
- **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 for orders CONTROL physician
- 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

5.16 Pediatric General: Procedural Sedation

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 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

OB/GYN

6.0 OB/GYN EMERGENCIES

6.1 OB/GYN Childbirth: Pre-delivery

EMERGENCY MEDICAL RESPONDER

- Vital Signs
- Determine the estimated date of expected birth, the number of previous pregnancies and number of live births (Gravida / Para / Abortio)
- Determine if the amniotic sac (bag of waters) has broken, if there is vaginal bleeding or mucous discharge.
- Determine the duration and frequency of uterine contractions
- If labor seems active based on above information:
    - Examine the patient for crowning or bulging of the perineum with contractions
- If delivery is imminent, prepare for an on-scene delivery.
- Prepare equipment and drape the mother

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

PARAMEDIC

- Consider Vascular Access

Key Points/Considerations

- If the amniotic sac has ruptured, the birth may not be imminent, but the mother *must* deliver the baby within 24 hours
- Gravida: number of pregnancies;
- Para: number of live births;
- Abortio: number of demised births (abortion, miscarriage, still-birth, etc.)

6.2 OB/GYN Childbirth: Delivery

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 oropharynx then nostrils with a bulb syringe.
- Feel for the presence of the umbilical cord around the neck
    - 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.
- 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.
- Carefully hold (catch) the infant as it continues to deliver
- Provide tactile stimulation by drying and wrapping the infant in a blanket
- Once the infant is crying or breathing adequately, 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 at 1 minute and 5 minutes after birth (See next page)

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.

6.2 OB/GYN Childbirth: Delivery (continued)

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

APGAR Score

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

Sign	0	1	2
Appearance (skin color)	Central Cyanosis	Pink torso with Distal Cyanosis	Completely Pink
Pulse	Absent	<100	>100
Grimace (flick soles of feet)	No response	Grimace, shudders or flinches	Vigorous cry
Activity (muscle tone)	Limp	Some flexion	Active motion
Respirations	No effore	Weak, Irregular	Strong Cry

Key Points/Considerations

- 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
- NEONATAL RESUSCITATION
    - If the Infant is not breathing adequately or heart rate is < 100 after 30 seconds of tactile stimulation, consider assisted ventilations.
    - If the infant's heartrate is less than 60 after one minute, start chest compressions

6.3 OB/GYN: Eclampsia

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Check blood glucose level, if level is abnormal refer to 2.6 Medical: Diabetic Emergencies protocol.

EMT STOP

ADVANCED EMT

- Vascular access

ADVANCED EMT STOP

PARAMEDIC

- Cardiac Monitor
- If patient is seizing administer **Magnesium Sulfate 4 g 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

6.4 OB/GYN: Pre-term Labor (24-37 weeks)

EMERGENCY MEDICAL RESPONDER

- ABC
- Apply appropriate oxygen therapy
- Vital signs

EMERGENCY MEDICAL RESPONDER

EMT

EMT STOP

ADVANCED EMT

- Vascular access; **Normal Saline 500-1000 mL IV bolus** as needed

ADVANCED EMT STOP

PARAMEDIC

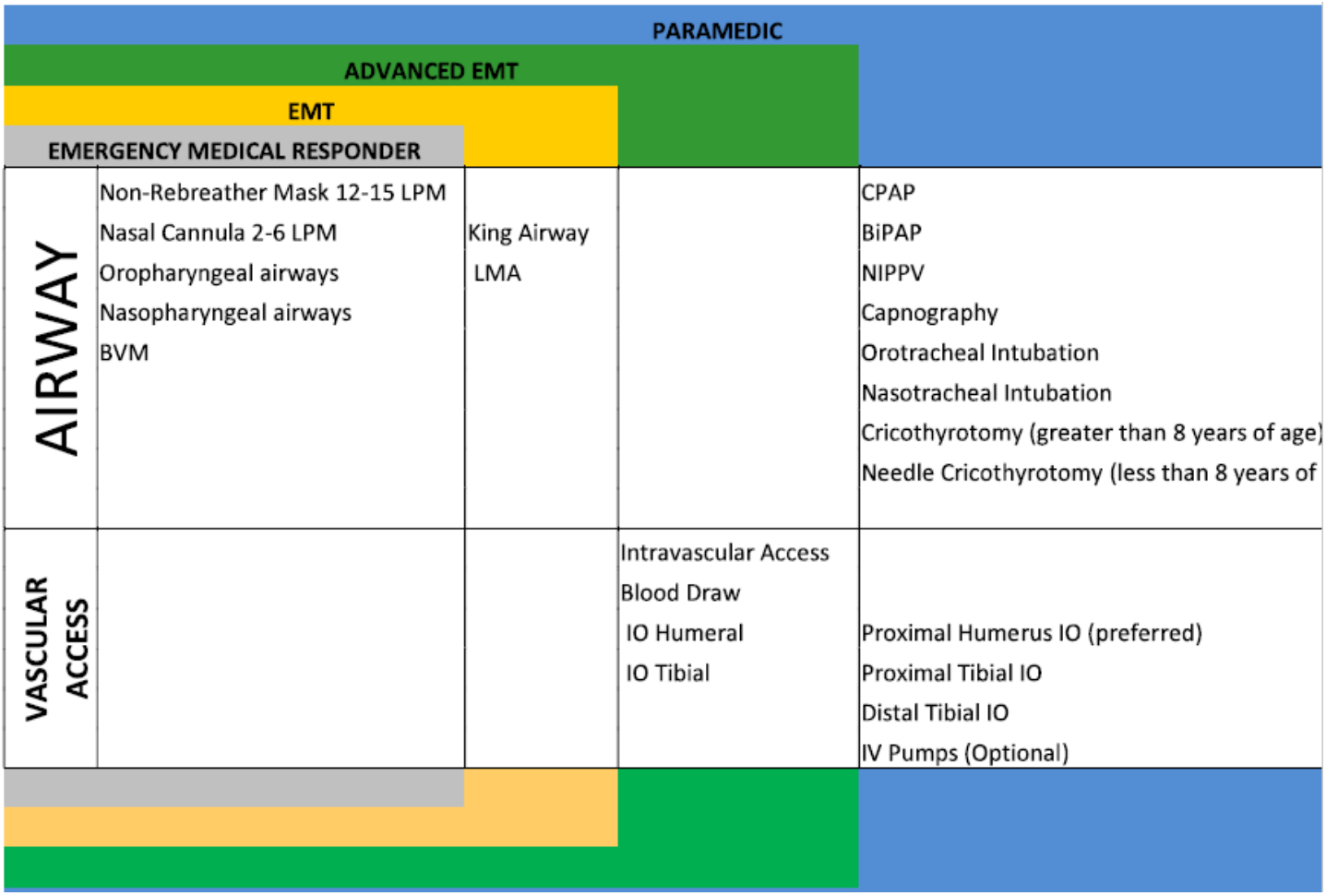
- Cardiac Monitor

Key Points/Considerations

- If the patient develops hypotension, transport her on her left side
- 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

Procedures

7.0



7.1 Procedure: Airway Management

EMERGENCY MEDICAL RESPONDER

- Oxygen therapy: The goal of oxygen therapy is to achieve adequate tissue oxygenation using the lowest possible FiO_2
  - 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;
  - 7.2 Procedure: Non-visualized Airway
    - LMA
    - King Airway

ADVANCED EMT STOP

PARAMEDIC

- Oral endotracheal intubation in unresponsive Adults and Pediatric patients
  - 7.3 Procedure: Endotracheal Intubation
- Continuous Positive Airway Pressure (CPAP) or Bi-Level Positive Airway Pressure (BiPAP)
  - 7.6 Procedure: CPAP
- Medication facilitated intubation;
  - 3.3 Respiratory: Medication Facilitated Intubation
- Pediatric Needle cricothyrotomy (< 8 yo)
  - 7.4 Procedure: Needle cricothyrotomy
- Quick Trach Cricothyrotomy (> 8 yo);
  - 7.5 Procedure: Quick Trach Cricothyrotomy

Key Points/Considerations

- 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.
- Re-confirm endotracheal placement after any patient transfer with at least two assessments and continuous Waveform/Quantitative Capnography (if available)

7.2 Procedure: Non-visualized Airway

EMT

EMT BA/ADVANCED EMT

PARAMEDIC

Indications:

- Airway control in the absence of other effective methods (e.g. failed airway)
- Situations involving a difficult mask (BVM) fit.

Contraindications:

- Patients at risk of aspiration
- Patients with massive thoracic injury
- Patients who are not profoundly unconscious and who may resist insertion
- Severe maxillofacial or oropharyngeal trauma
- Greater than 14-16 weeks pregnant

Insertion:

Step 1: Size selection
- Verify correct size of LMA for the patient

Step 2: Examine the LMA
- Visually inspect the LMA cuff for tears
- Inspect the tube to ensure that it is free of blockage
- Deflate cuff to ensure that it will maintain a vacuum
- Inflate cuff to ensure that it does not leak

Step 3: Lubrication
- Lubricate LMA with a water soluble lubricant.

Step 4: Positioning of Airway
- Extend the head and flex the neck
- Avoid LMA fold over
- Assistant pulls the lower jaw downwards
- Visualize the posterior oral airway
- Ensure that the LMA is not folding over in the oral cavity as it is inserted

Step 5: Insertion
- Place tip of LMA against the inner surface of the patient's upper teeth
- Using the index finger, keep pressing upwards as you advance the mask into the pharynx to ensure the tip remains flattened and avoids the tongue
- Guide the mask down into position
- Inflate the mask with recommended volume of air

Key Points/Considerations

- Use Caution with a possible foreign body airway obstruction.
- Attempt to remove obstruction before placing device

7.3 Procedure: Endotracheal Intubation

PARAMEDIC

- Assure that the patient is being adequately oxygenated/ventilated prior to intubation
- Have suction ready
- Continuous pulse oximetry and cardiac monitoring
- Select and prepare proper ETT: ET Tube is determined by comparison of the patients nares or little finger (refer to the Length Based Pediatric Tape for Pediatric population)
- Insert stylet
- Check ETT for cuff leakage
- Lubricate tube
- Prepare laryngoscope: select proper blade and check light
- Place patient in “sniffing position”, unless contraindicated
- Pre-oxygenate patient with 100% OXYGEN via BVM
- Apply continuous cricoid pressure (Sellick Manuever) if needed
- Insert laryngoscope: hold in left hand, insert blade into right side of mouth and sweep tongue to the left
- Visualize vocal cords:
    - Straight Blade- Direct blade below epiglottis and lift handle up and away from you
    - Curved Blade- Direct blade below into vallecula and tilt your hand towards yourself
- DO NOT USE TEETH AS A FULCRUM
- Using right hand, insert tube between vocal cords
- Remove stylet, if used
- Verify tube placement: auscultation of epigastrium and both axillae, obtain pulse oximetry and use appropriate CO2 detector
- Inflate cuff with 5-10 mL of air, if appropriate
- Secure ETT appropriately
- Reassess tube placement while ventilating patient

Key Points/Considerations

- Intubation may be attempted on a patient 2 times. If unsuccessful utilize a medically approved non-visualized airway or ventilate with BVM.
- Utilize 3.3 Respiratory: Medication Facilitated Intubation as needed

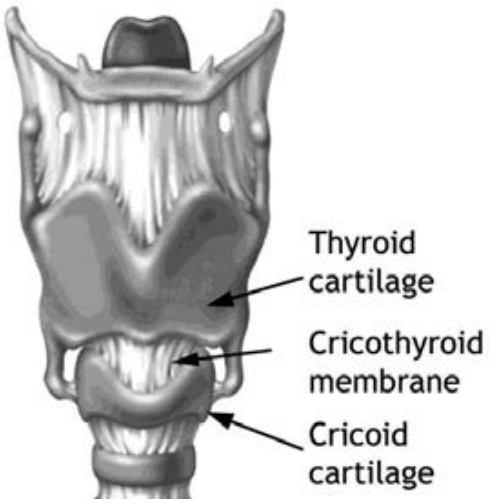
7.4 Procedure: Needle Cricothyrotomy

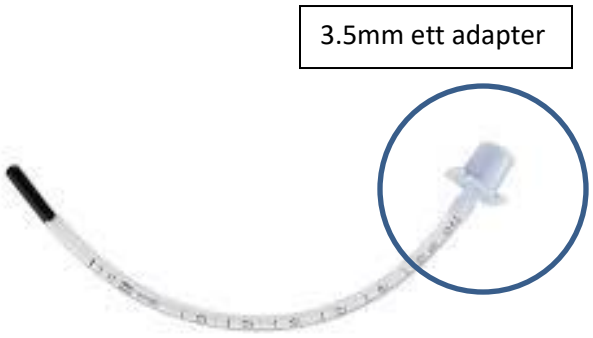
PARAMEDIC

- Establish that complete obstruction of airway has occurred.
    - Attempt BLS measures to relieve obstruction.
    - Attempt to visualize obstruction with laryngoscope.
    - If obstruction visible, remove with Magill Forceps.
- If still complete obstruction:
    - Prepare large bore angiocath (14 gauge) with 50cc syringe.
    - Palpate crico-thyroid membrane.
    - Prep area with antibacterial solution.
    - With angiocath on syringe, insert through crico-thyroid membrane, maintaining negative pressure on plunger of syringe.
    - Entry into trachea will be confirmed by escape of air into syringe.
    - Advance Catheter only in caudal direction (towards feet).
    - Attach bag-ventilator with 3.5mm endotracheal tube adaptor;
    - Ventilate patient with supplemental oxygen; listen for breath sounds bilaterally; visualize chest movements;
- Transport as soon as possible.

Key Points/Considerations

- Needle cricothyrotomy may provide ventilation Assistance for a short period of time only.
- Do not delay transport.

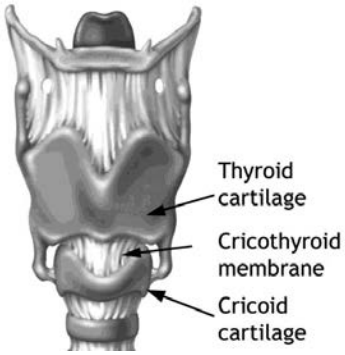




7.5 Procedure: Quick Trach Cricothyrotomy

PARAMEDIC

- Establish that complete obstruction of airway has occurred.
  - Attempt BLS measures to relieve obstruction.
  - Attempt to visualize obstruction with laryngoscope.
  - If obstruction visible, remove with Magill Forceps.
- If still complete obstruction:
  - Prepare large bore angiocath (14 gauge) with 50cc syringe.
  - Palpate crico-thyroid membrane.
  - Prep area with antibacterial solution.
  - Firmly hold Quick Trach device and puncture the cricothyroid ligament at a 90-degree angle.
    - Bevel of needle should be facing away from the head of patient.
    - Hold at 90 degree ONLY for initial puncture. DO NOT advance at 90 degrees past the plastic cannula.
  - Check the entry of the needle into the trachea by aspirating air through the syringe. If air is present the needle is within the trachea.
  - After air is verified, NOW change angle of insertion to 60 degrees and advance until the level of the plastic stopper. (the stopper reduces the risk of advancing the needle too deeply causing damage to the rear wall of the trachea)
  - Remove Stopper; DO NOT ADVANCE THE DEVICE FURTHER WHILE REMOVING STOPPER.
  - Hold the needle and syringe firmly while advancing ONLY the plastic cannula and removing the needle at the same time.
  - Advance cannula until the flange rests on the neck.
  - Secure the cannula with the neck tape, apply connecting tube to the 15mm connection and connect the other end to the resuscitation bag or ventilation device.
  - Ventilate patient with supplemental oxygen; listen for breath sounds bilaterally; visualize chest movements;
- Transport as soon as possible.



7.6 Procedure: CPAP (Flowsafe 2)

PARAMEDIC

- Oxygenate the patient with 15 liters via non-rebreather mask while setting up CPAP
- Chose correct size CPAP
- Attach CPAP tubing to oxygen source and obtain desired pressure (see chart below)
- Encourage patient to place mask over mouth and nose, then firmly attach mask using final connection on side of mask
    - Refer to 2.4 General: Procedural Sedation protocol as needed
- Monitor patient's level of consciousness and vital signs continuously.
    - If patient develops decreased mental status or decreased blood pressure- DISCONTINUE CPAP.
- Continuous cardiac monitoring and pulse oximetry required

Key Points/Considerations

- If port is available for Albuterol administration, follow manufactures guidelines
- Contraindications for CPAP include Unconsciousness, Children under 14, Hypotension facial / chest / upper airway trauma, apnea, inability to protect airway, vomiting, pneumothorax

Flow vs Pressure

Lightweight & Portable	80 grams nominal (less mask & harness) 90 mm X 53 mm X 65 mm (unit only)
Flow (LPM)	**CPAP/PEEP (approx. cm H_2O)**
6	2.0 - 3.0
10	6.0 - 7.0
12	8.0 - 9.0
15	11.0 - 12.0
8 - 9	5.0
10 - 12	7.5
13 - 14	10.0
Flush	13.0 (Max.)

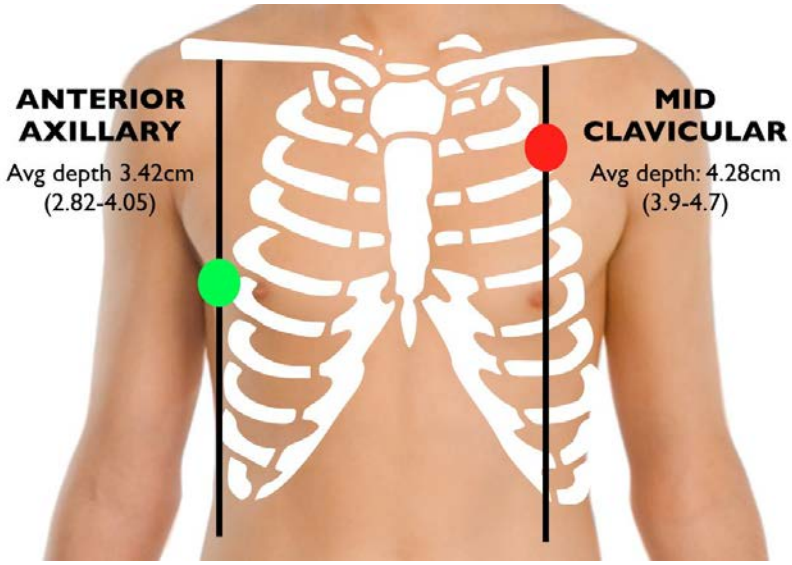
O_2 Tank Time Chart

Flow/L/Min.	D Cylinder	E Cylinder	M Cylinder
5	70	123	703
6	58	102	598
8	44	77	498
10	35	61	374
12	29	51	299
15	23	41	199

7.7 Procedure: Thoracic Decompression

PARAMEDIC

- Establish and Confirm Tension Pneumothorax
  - Absent breath sounds on affected side of chest.
  - hypoxia
  - Distended neck veins.
  - Extreme dyspnea
  - Subcutaneous emphysema.
  - Tracheal deviation from affected side.
- Needle decompression if patient has signs and symptoms consistent with Tension Pneumothorax AND hemodynamic compromise
  - Prepare (14 ga. Catheter or larger, alcohol prep/Betadine)
    - Be sure the needle is long enough to achieve proper depth (see below)
  - 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



7.8 Procedure: Intraosseous Access

EMT BA/ADVANCED EMT

PARAMEDIC

Indications:

- For fluid or medication administration in critically ill patients.
- TO BE USED IN FULL ARREST/TRAUMA FULL ARREST SITUATIONS.
  AFTER TWO UNSUCCESSFUL PERIPHERAL IV ATTEMPTS HAVE BEEN MADE

Contraindications:

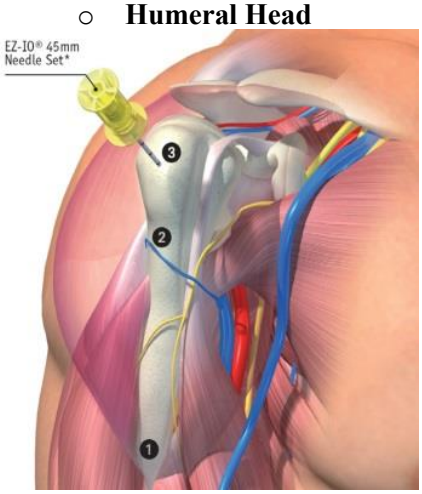
- Cellulitis
- Osteomyelitis
- Recent fracture of involved bone
- Previous IO insertion site within the last 24 hours.

Complications :

- Sepsis
- Fat Embolism
- Infiltration
- Bone Marrow Damage
- Bone Fracture
- Osteomyelitis

Technique:

- Locate the site of cannulation
  - **Proximal Tibia**
    - Identified by palpation
    - 1-3 cm below the tibial tuberosity on the medial flat surface of the tibia, approximately one finger's width below and just medial to **the tibial tuberosity**
  - **Humeral Head**



"Power driver" Insertion Steps:

- BSI.
- Aseptic technique
- Locate insertion site (Approved sites: proximal tibia or proximal humerous).
- Prepare insertion site.
- Prepare infusion system.
- Ensure that the driver and needle set are securely seated. (continued)

7.8 Procedure: Intraosseous Access (continued)

- Remove and discard the needle set safety cap from the IO needle set installed on the power driver.
- Prepare to insert
- Do not touch the needle set with your hand or fingers.
- Control the patient's movement prior to and during the needle set insertion
- Position driver at insertion site with needle set at a 90-degree angle to the bone.
- **Gently** power or press needle set until needle set tip touches bone
- Ensure at least 5mm of the catheter is visible.
- Penetrate bone cortex by squeezing the driver's trigger and applying **gentle, steady downward pressure**.
- Release driver's trigger and stop insertion process when:
    - A sudden "give" or "pop" is felt upon entry into the medullary space.
    - A desired depth is obtained.

Important: Use gentle-steady pressure. Do not use excessive force. Allow the catheter tip rotation and gentle downward pressure to provide the penetrating action. Note; if the driver stalls and will not penetrate the bone you may be applying too much downward pressure.

- Secure IO with Kerlex roll.

Successful Insertion

- Insertion is successful and the needle is clearly in the marrow cavity if the following conditions are present
    - Sudden decrease in resistance to insertion occurs as the needle passes through the bony cortex into the marrow
    - The needle can remain upright without support
    - Marrow can be aspirated into a syringe joined to the needle, although this is not consistently achieved.
    - Fluid flows freely through the needle without evidence of subcutaneous infiltration.

Key Points/Considerations

- The preferred site for infusion is peripheral. Before an intraosseous attempt is considered it will be ascertained that peripheral sites are not available. This information will be documented on the EMS response form
- There will only be TWO attempts on an extremity at establishing an intraosseous infusion. NO MORE THAN TWO attempts will be allowed.
- Scene time will not be delayed for intraosseous infusion attempts.
- Any Deviation from above points must be documented as to reason why.

7.9 Procedure: 12-Lead Acquisition and Transmission

EMT

EMT BA/ADVANCED EMT

PARAMEDIC

Clinical Indications:

♦Chest pain or other angio-equivalents such as dizziness, shortness of breath or other referred pain
♦Electrical Injuries

Precautions:

♦ Care must be taken to avoid an unnecessary extension of scene time. **Do not delay** scene time more than four (**4**) minutes to perform 12 lead ECG.
♦ Patients who require a 12 lead ECG should not refuse treatment.
♦ Treatment of patient with Aspirin, Nitroglycerin or any other medication should not be delayed while preparing to acquire 12 lead ECG

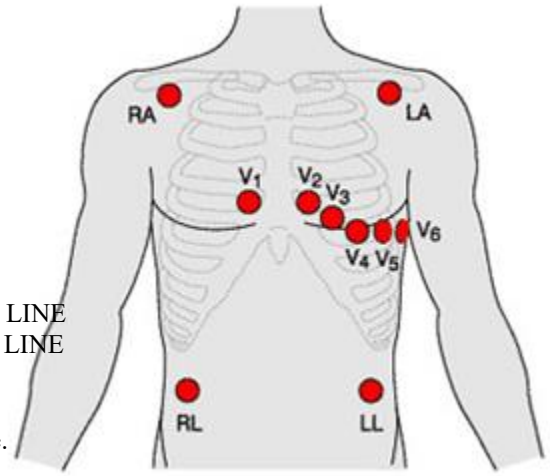
Contraindications:

♦ Trauma Patient
♦ Unstable Patient

Procedure:

♦ Place patient in position of comfort.
♦ Push "12" button, then "acquire" button.
♦ Enter patient demographic data if time allows.
♦ Remove patient clothing above waist. Use a gown or sheet to preserve patient modesty.
♦ Prepare patient's skin for electrode placement. (shave hair if necessary, clean oily skin with alcohol and drying briskly)
♦ Apply chest and limb leads as follows:

Limb Leads
RA-RIGHT ARM
LA-LEFT ARM
RL-RIGHT LEG (lower right abdomen, groin, thigh)
LL-LEFT LEG (lower left abdomen, groin, thigh)
Precordial Leads
V1- 4TH INTERCOSTAL SPACE RIGHT OF THE STERNUM
V2- 4TH INTERCOSTAL SPACE LEFT OF THE STERNUM
V3- DIRECTLY BETWEEN LEADS 2 AND 4.
V4- 5TH LEFT INTERCOSTAL SPACE AT MIDCLAVICULAR LINE
V5- LEVEL WITH V4 AT THE LEFT ANTERIOR AXILLARY LINE
V6- LEVEL WITH V5 AT THE LEFT MIDAXILLARY LINE



♦ Instruct patient to remain still.
♦ Obtain 12-lead ECG reading. Avoid acquiring ECG in a moving vehicle.
♦ **TRANSMIT 12-LEAD IF AVAILABLE**
♦ Document TIME of when12 lead acquired.
♦ Do Not remove limb/precordial electrodes after ECG acquisition; leave in place upon ED arrival.
♦ Contact Medical Control to notify them of the patient and the incoming 12 lead ECG. (Alert medical control ASAP if **STEMMI** is present)
♦ Monitor and assess the patient enroute and continue treatment protocol.
♦ **Upon arrival to the ED, the 12 lead must be handed to the attending physician only.**
♦ **Document *TIME, DATE*** and ***PHYSICIAN who received the 12 lead at facility.***

7.10 Medication Administration: Intranasal (IN)

EMERGENCY MEDICAL RESPONDER

EMT

EMT BA/ADVANCED EMT

PARAMEDIC

- Using a 1 ml or 3 ml syringe and needle, draw the appropriate amount of medication into the syringe. (Unless medication is already in a quick jet)
- Remove the needle and place the MAD tip onto the syringe. The MAD is a Luer lock device and twists into place
- 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 ear
- Briskly compress the syringe plunger and deliver approximately half of the medication
- Move the device over to the opposite nostril and administer the remainder of the medication as before.
- If an amount greater than 1 ml per nostril is needed, wait 2 3 minutes and administer the remaining medication

Key Points/Considerations

- The Mucosal Atomization Device (MAD) can be used for the Fentanyl, Midazolam, Ativan (ALS) and Naloxone in the event an IV a has not or cannot be initiated.
- Prior to using the IN route, inspect the patient's nostrils for significant amounts of blood or mucous discharge. The presence of these will limit medication absorption. Considering suctioning the nasal passages before IN administration in these cases
- Always deliver half of the medication dose up each nostril.
- Be aware there is approximately 0.1 ml of dead space in the MAD. It is important to make allowances for this dead space when calculating drug dosages

7.11 Medication Administration: Intramuscular (IM)

EMT

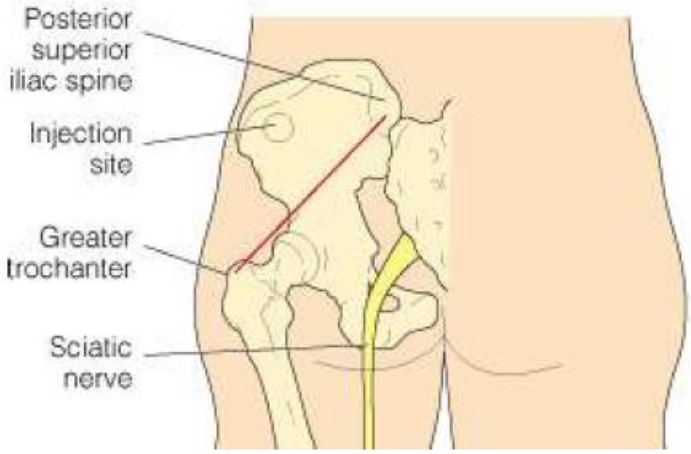
EMT BA/ADVANCED EMT

PARAMEDIC

- Prepare 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 / 2x2 with tape
  - **FILTER STRAW if drawing from a glass ampule**

Use only the following sites:

- **Posterior Deltoid** for injections of 2 mL or less (preferred site) in adults
- **Dorso-Gluteal** for injections of 2-5 ml in adults or 2ml or less in children



Key Points/Considerations

- Insert the needle into the muscle at a 90 degree angle
- Aspirate to assure that there is no blood return
- Inject the drug **SLOWLY**
- Withdraw the needle and apply pressure to the site

Special Procedures

8.0

8.1 Special Procedures: Documentation

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 or faxed to the Emergency Department. Please send reports as soon as possible. The state reports to be sent to the hospital within 24 hours. A $500 fine per day can be levied 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 promlem and further explanation of the chief complaint of presenting symptoms: Provocation, Quality, Radiation, Severity, and Time.
- **Past pertinent medical history:** As it relates to the current problem: Symptoms, Allergies, Medications, Pertinent medical history, Last oral intake and Events leading to the injury or Illness.
- **Physical exam:** Initial, rapid, focused and / detailed exams, including vital signs and EKG interpretations. Documentation of findings should be complete and detailed to thoroughly and objectively describe the condition of the patient. Be sure to include pertinent negatives and **time stamps for assessments such as vitals and 12-lead acquisitions.**
- **Treatment and Response:** All treatments must be documented chronologically to include Who, what where when, number of attempts and patient response. Also be sure to document and obtain proper refusals if a patient refuses a specific procedure. Document scene delays.
- **Transportation**: You should document how you moved the patient from the scene to the Ambulance. It is recommended that you document how the patient was secured to the stretcher, when and how the hospital was contacted, any orders received or denied and changes in the patient's condition. Also document which room you placed the patient in and who you transferred care to. Be sure to document any delays in transport either to the scene or to the hospital

8.2 Special Procedures: Informed Consent and Refusal of care

EMT

EMT BA/ADVANCED EMT

PARAMEDIC

- Conduct the following assessments:
  - Legal competence
  - Mental competence
  - Medical or situational competence
- Patient Incompetent:
  - Treat and transport with “implied consent”
  - Do not jeopardize safety of self or crew
  - Call for law enforcement if needed
    - See 8.3 Special Procedures: Involuntary Restraint protocol
- Who may sign for refusal?
  - Patient of legal age who is competent and not a threat to themselves or others
  - Parent
  - Legal Guardian
  - Medical Power of Attorney
- 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 (preferably not your partner)
  - Complete Patient Care Report
  - IF needed, contact medical control

8.3 Special Procedures: Involuntary Restraint

EMT

EMT BA/ADVANCED EMT

PARAMEDIC

Indication: If the mental status is judged to be abnormal, prehospital personnel must carry out treatment and transport in the patients' best interest.

- Prehospital personnel must **ALWAYS CONSIDER THEIR OWN SAFETY FIRST!**
- Consider 2.3 General: Patient Agitation protocol

Procedure:

- Attempt to verbally reassure the patient and seek their willing cooperation before committing to restraint
- If it is necessary to physically restrain a patient, perform the following:
    - Prepare all the necessary equipment
    - Always utilize police and/or fire personnel if possible.
    - If available, have one person assigned to each extremity and one to hold equipment.
    - Apply the restraints as loosely as possible to maintain a safe situation while preventing neurovascular compromise and undue patient discomfort. Apply restraints over clothing when possible.
    - Never place restraints over a patient's chest or on the abdomen of a pregnant patient.
    - Perform routine and specific medical care as indicated by the patient's condition.
    - Routinely document the neurovascular status of the patient's extremities distal to the restraints.
    - Notify the receiving the hospital of the situation, and request security assistance upon arrival.
    - Continue to attempt to verbally reassure the patient and seek their cooperation. Inform the patient's family of the reasons for the use of restraints.
    - Thoroughly document the situation including the reasons for using restraints and how they were applied.
    - At no time will towels, washcloths or other devices be placed over the mouth and/or nose of a restrained patient for any reason.
    - Never restrain a patient in the prone position.

For reasons of medical safety, any patient who is under police hold and requires handcuffs and must have a police officer accompany the patient in the back of the ambulance while enroute to the hospital or provide the transporting EMS personnel with keys to the handcuffs.

8.4 Special Procedures: Ventricular Assist Device

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.

EMERGENCY MEDICAL RESPONDER STOP

EMT

- Transport emergently to Emergency Department
- 12 lead ECG and transmit

EMT STOP

ADVANCED EMT

- Vascular access, with blood draw
- Controller Alarming (red heart)
    - Treat for cardiogenic shock per 1.5 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

Key Points/Considerations

- Contact Medical Control as soon as possible so they are aware of this special patient
- Compressions will likely result in dislodgement of the pump and are considered intervention of last resort
- The LVAD is a continuous flow device and you may or may not feel pulse
- Transport caregiver and all equipment. (The caregiver is the expert on the device)

8.5 Special Procedures: Taser Removal

EMERGENCY MEDICAL RESPONDER

EMT

EMT BA/ADVANCED EMT

PARAMEDIC

- Identify the location of the probes on the patient's body.
- **If any of the probes are embedded in the following areas do not remove them and transport the patient immediately to the Emergency Department.**
    - Face
    - Neck
    - Groin
    - Spinal Column
- Confer with the law enforcement officer and determine the patient's condition from the time of the taser discharge until prehospital personnel arrival.
- Vital sings
- Determine from the patient:
    - Last Tetanus Shot
    - Any Cardiac History
    - Any ingestion of a mild-altering stimulant (medication, drugs, alcohol, etc.)
- Document all of the above findings thoroughly in your patient care report.
- Gently remove probes unless severe pain or resistance is met
- Cleanse puncture sites and bandage as appropriate.

Key Points/Considerations

- If patient has not had a tetanus shot within the last five (5) years, advise that they should acquire one as soon as possible.
- If the patient is combative and may require chemical restraints, they must be transported to the Emergency Department.
- All patients with altered mental status will require a full assessment and Emergency Department evaluation.
- If a refusal is obtained, document carefully and have the officer sign as a witness

8.6 Special Procedures: Care of the Dialysis Patient

EMERGENCY MEDICAL RESPONDER

EMT

- ABC
- Consider appropriate oxygen therapy
- Vitals
    - DO NOT take a blood pressure in an extremity containing a graft or fistula.
- Control bleeding with direct pressure
    - DO NOT apply a tourniquet to an extremity with an AV fistula

EMT STOP

ADVANCED EMT

PARAMEDIC

- Vascular access if needed
    - Consider IO in full arrest or critical situations
    - May utilize an extremity with an AV graft if unable to maintain establish or maintain IV/IO Access in another location

8.7 Special Procedures: System Entry and Recertification

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 signed by the person responsible for the program.

For initial system entry, the candidate must:

- Become familiar with Franciscan Health Hammond/Dyer system protocols
- Complete a BLS protocol examination with a minimum score of 80%
- Update their Acadis Portal and National Registry accounts to reflect their new agency alignment
- Must have and maintain a valid AHA Healthcare Provider CPR certification

For recertification, the candidate must:

- Maintain a valid AHA Healthcare Provider CPR certification
- Maintain continuing education hours, audit hours and skills sessions as required by the State of Indiana certifications division
- The agency's training officer is required to maintain recertification paperwork

EMT STOP

ADVANCED EMT

PARAMEDIC

For initial system entry, the candidate must do all of the above PLUS:

- Complete a State Form 67 (Application for EMS Reciprocity and/or ALS Affiliation)
- Provide a letter of good standing from the Medical Director of their previous system.
- A medic transferring from another state must follow the appropriate procedures regarding temporary licensures and National Registry testing procedures as outlined by the IDPH Certifications Division.
- Complete the protocol test with a score of at least 80%.
- Successfully perform a skills session with the EMS Medical Director, EMS Coordinator or authorized educational staff
- Complete adequate, 3rd person ride-time with a system medic who is currently in good standing. The length of this preceptorship will be no less than 48 hours. These shifts are to be documented by the preceptor.
- Present current ACLS and PALS certifications

8.7 Special Procedures: System Entry and Recertification (Cont.)

EMT BA/ADVANCED EMT

PARAMEDIC

For recertification, the candidate must:

- Attend a minimum of 3 (75%) audit and review meetings a year. If this is not possible, the Medical Direction Committee may determine a possible alternative.
- Successfully complete (80%) the current ALS protocol test at least once every 2 years
- Be in good standing with the system.
- All continuing education hours must be approved by the EMS Coordinator. Hours that are acquired elsewhere will be accepted on a case-by-case basis.
- Hold a current ACLS, PALS certification.
- All medics must acquire a signature by the system Coordinator and the System Medical Director. Any falsification of documentation will be reported to the IDHS Certifications Division.
- A copy of all appropriate system documentation is to be maintained by the System Coordinator

8.8 Special Procedures: Supply / Medication Replacement

EMERGENCY MEDICAL RESPONDER

EMT

EMT BA/ADVANCED EMT

General Supplies

- Medics may utilize the Omnicell to replace the supplies used on the patient they transported into the hospital
- Medics may replace a *reasonable* cache of supplies and linen used on other patients
  - Omnicell transactions will be closely monitored by the EMS Coordinator
- To use the Omnicell
  - Log in
  - Choose “FLOOR STOCK SUPPLY” DO NOT add a patient
  - Press the corresponding green button for every item you take
  - Press exit

Non-controlled Medications

- Non-controlled medications (including Etomidate) may be replaced by an ED nurse out of the ED Pyxis as long as it was used on a patient
- Expired medications must be replaced in the pharmacy

ADVANCED EMT STOP

PARAMEDIC

Controlled Medications

- The unused medication must be wasted by an ED nurse who will then fill out the controlled substance log which the medic will also sign
- The run sheet must be taken to the pharmacy with the nurse’s signature confirming that the unused portion was wasted

Key Points/Considerations

- A non-controlled medication must be replaced by the hospital to which the patient was transported
- A controlled substance taken to another hospital or medications not transported (i.e. Dextrose Refusals, cardiac meds used on terminated resuscitation) must be replaced by supervising hospital

8.9 Medication Formulary

Medication	Routes	Volume	MG
EMERGENCY MEDICAL RESPONDER			
Naloxone	IN	2 mL	2 mg
Sterile Water	Irrigation	500 mL	
EMERGENCY MEDICAL TECHNICIAN			
Aspirin	PO	Tablet	81 mg
Epinepherine Auto Injector (only for BLS)	IM	1 Epi Pen-Adult .3 mg 1 Epi-Pen JR .15 mg	
Glucose (Gel)	PO		15 Grams
ADVANCED			
Epinepherine 1:1000	SQ	1 mL	1 mg
Glucagon	IM	1 mL	1 mg
Normal Saline 0.9%	250 mL, 500 mL and 1000 mL		
PARAMEDIC			
Adenosine	IV	2 mL	6 mg
Albuterol	Inhalation	3 mL	2.5 mg
Atropine	IV	10 mL	1 mg
Atrovent (Ipatropium Bromide	Inhalation	2.5 mL	1.25 mg
Dextrose 25%	IV	10 mL	2.5 g
Dextrose 50%	IV	50 mL	25 g
Diazepam (Valium)	IV, IM, IN	2mL	10 mg
Diphenhydramine (Benadryl)	IV, IM	1 mL	50 mg
Epinepherine 1:10000	IV	10 mL	1 mg
Etomidate	IV	20 mL	40 mg
Fentanyl	IV, IN, IM	2 mL	100 mcg
Furosemide	IV	4 mL	40 mg
Lidocaine	IV	5 mL	100 mg
Lidocaine Drip	IV	500 mL	2 g
Lorazepam (Ativan)	IV, IM, IN	1 mL	2 mg
Magnesium Sulfate	IV	10 mL	5 g
Methylprednisolone (Solu-M)	IV, IM	2 mL	125 mg
Midazolam (Versed)	IV, IM, IN	5 mL	5 mg
Morphine Sulfate	IV, IM	1 mL	10 mg
Nitroglycerine Tablets/Spray	SL		.4 mg
Ondansetron ODT	PO	Tablet	4mg
Ondansetron (Zofran)	IV, IM	2 mL	4 mg
Sodium Bicarbonate	IV	50 mL	50 mEq
Tetracaine Hydrochloride	Opthalmic	15 mL	0.50%
Tranexamic Acid (TXA)	IV Drip	100 mL	1 g

Controlled Substances

8.10 Special Procedures: District 1 Diversion Guidelines (copied)

I. Purpose

- To establish guidelines under which Hospital Emergency Departments divert ambulance patients when it has been determined, through pre-established criteria, that the hospital is unable to accommodate additional patients.
- To define procedures for communicating changes in diversion status.
- To establish guidelines for ambulance provider operations when a Hospital is on diversion.
- To define exceptions to the Diversion Guidelines when hospital(s) follow procedures as outlined herein.

II. DEFINITIONS

A. **Diversion**: Is an alert from an overwhelmed hospital to EMS Providers to consider the possible diversion of incoming ambulance patients to the next closest hospital. This request should be reasonably honored as a **COURTESY** in order to provide better care for our patients. Hospital resources, including emergency services may occasionally be overwhelmed. The hospital, based on its own criteria, may designate itself as being on "diversion or bypass".

EMS Guidelines require that unstable patients be transported to the nearest facility regardless of diversion status.

Unstable Patient:

- Unable to maintain an airway
- Unable to ventilate
- Unremitting shock
- Any patient presenting with signs and/or symptoms of acute cardiac syndrome or stroke
- As otherwise defined in appropriate EMS System protocols, (including as determined by medical control contact).

If in the EMS personnel's judgment in consultation with on-line medical direction, a patient's condition may be jeopardized by bypassing a facility on diversion, a unit may override the hospital's request for diversion for emergency stabilization of a patient. Any diversion override should be documented.

B. **Total Diversion:** When a hospital determines through pre-established criteria, that the Emergency Department is unable to provide care to additional ambulance patients. Resources of the ED/Hospital are overwhelmed and they are alerting pre-hospital providers to divert patients to the next closest facilities, if possible. Hospital must still accept unstable patients, if transport to the next closest facility jeopardizes the patient's condition.

C. **Hospital Disaster Diversion:** Request to divert **ALL** patients to the next closest facility due to the hospital/ED being unable to take any patients due to a disaster situation. This diversion is only used in cases (quarantine, damage to the facility, etc.) that require the hospital to call an external or internal disaster.

a. Overwhelming is not a valid cause for DISASTER DIVERSION.

b. An internal or external disaster occurs which compromises patient safety.

D. **Specialty Diversion:** This is an informational diversion based on equipment that is not available at the ED/hospital. Examples include, but are not limited to CT and MRI. The hospital MUST identify the specialty area on diversion when giving EMS notification with definition if needed.

8.10 Special Procedures: District 1 Diversion Guidelines (continued)

III. POLICY

- This policy shall not override or interfere with each facility's Emergency Preparedness Policies.
- The decision to initiate diversion shall be made according to each facility's policies and procedures.
- A record will be kept indicating the reasons for diversion according to hospital criteria. This record, including times of notification and termination of diversion, will be kept by the hospital. The record should include documentation of communication of diversion status to the Local 911 Centers, EMS Services, and Hospitals.
- Once diversion in initiated, the criteria and status for continued diversion will be reviewed no less frequently than every four hours.
- Unstable patients are to be transported to the closest hospital **unless** that hospital is on Hospital Disaster Diversion.
- If ALL geographically contiguous hospitals (catchment area) go on diversion, they will automatically negate each other relative to their shared provider area.
- Diversion status may NOT be honored if transport time by an ambulance to the next closest hospital jeopardizes patient care. EMS personnel will determine most appropriate facility based on the patient's best interest.
- If a patient adamantly requests a hospital on bypass, they must sign a refusal to accept hospital diversion form

DIVERSION COMMUNCIATION PROCEDURE

Hospitals and EMS shall follow the procedures outlined below whenever Hospital diversion status changes are deemed necessary.

A. Communication Procedure

1. The Hospital shall notify all Local 911 Centers, EMS Services, Hospitals, and other stakeholders of any diversion status changes every 4 hours.

V. SUSPENSION OF DIVERSION

Hospitals may determine that continuation of diversion might result in a danger to public health and safety. In consultation with other hospital administrations, the administrators may suspend diversion and require all hospitals to accept both critical and non-critical patients. This step would be taken only after consultation with the hospital administrators or designee and only if it was determined to represent an imminent danger to public health and safety.

VI. QUALITY ASSURANCE AND RECORD KEEPING

A. Problems related to the implementation of this policy shall be reported to the Franciscan Health Hammond EMS Coordinator

Intra-Facility Transports

9.0

9.1 Inter-Facility Transport

EMT

EMT BA/ADVANCED EMT

May Transport any of the following:

- PCA Pump with 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)

ADVANCED EMT STOP

PARAMEDIC

The following require paramedic-level transportation: See 9.2 Inter-facility Transfer Drug List

- Medication or fluid infusing through a peripheral or central IV via gravity or an infusing system that allows the operator or assistant to change the rate of infusion
- 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

Key Points/Considerations

- Always be certain to clarify orders regarding medication titration prior to departure
- Contact medical direction and refer to appropriate protocols if the patient develops any complications during transport

9:2 Inter-facility Transfer Drug List

The list of medications may be administered to patients during inter-facility transfers within the following guidelines. These medications will be identified into each group as per advisement of the Medical Director. Additions, deletions, and changes may be made on review of current standards of care:

- Group 1 – Requires an infusion pump but does not require an ECG monitor.
- Group 2 – Requires an infusion pump and ECG monitor.
- Group 3 – Require an infusion pump, ECG monitor and RN familiar with the medication.
- Group 4 – Requires an infusion pump, ECG monitor, and the patient intubated.
- Group 5 – specific requirements as listed with the medication.

Direct communication between the Base Station hospital and the transferring paramedic may be established if needed and capable of being maintained throughout the transfer.

- The transporting ambulance must have on board and accessible to the paramedic a written description of the medication being transported.

Any medications not listed in the Transfer Protocol have not been reviewed or approved. If in the Base Station Physician determines the transfer can be accomplished safely, the paramedic may transfer the patient with the medication infusing. During such transports:

- A communication link must be maintained by the transporting unit to the Base Station Physician.
- A copy of the medications pharmacological action, side effects, and complications must be given to the transporting crew by the transferring facility prior to loading the patient.
- Additional equipment or personnel may be specified by the Base Station Physician to accompany the transport for patient safety.

In the event of an untoward effect or deteriorating condition of the patient, the crew is to immediately notify the Base Station and prepare to discontinue the infusion unless directed otherwise.

Refer to 9.1 Special Procedures: Inter-facility Transport protocol as needed

9:2 Inter-facility Transfer Drug List (Continued)

The following medications require **No Special requirements** during ALS Transport:

5W0.9% Sodium Chloride

D5/0.2% Sodium Chloride

Vitamins

Antibiotics

Cortisone

Lactated Ringers

Plasmanate

Morphine (self contained pump)

Group 1 – Infusion Pump

5% Albumin

10% Dextrose infusion

Acetylcysteine (Mucomyst)

Heparin

Hetastarch (Hespan)

Hyperalimentation

Octretide Acetate (Sandostatin)

Pantoprazole Sodium (Protonix)

Potassium chloride less than 40 mEq/L

Regular Insulin infusions

Group 2 –Infusion pump + ECG monitor

Amiodarone (Cordarone)

Amrinone (Inocor)

Blood/Blood products

Diltiazem (Cardizem)

Dobutamine (Dobutrex)

Fentanyl

Isoproterenol (Isuprel)

Lidocaine (Xylocaine)

Magnesium Sulfate [Cardiac patient]

Mannitol (Osmitrol)

Methylpredisolone (Solumedrol)

Milrinone Lactate (Primacor)

9:2 Inter-facility Transfer Drug List (Continued)

Group 2 –Infusion pump + ECG monitor (continued)

Nesiriteride (Natrecor)
Morphine Sulfate
Nitroprusside (Nipride)
Abciximab (ReoPro)
Eptifibatide (Integrilin)
Tirofiban (Aggrastat)
Potassium Chloride >or = 40 mEq/L
Procainamide (Pronestyl)
Vasopressin (Pitressin)

Group 3 – Infusion pump + ECG monitor + RN familiar with the medication

Alteplase tPA (Activase)
Cardene
Dopamine (Intropin)
Epinephrine Infusion (Adrenalin)
Esmolol (Brevibloc)
Fendolopam Mesylate (Corlopam)
Fibrinolytic infusion
Labetolol trandate (Normodyne)
Nitroglycerine (Tridil)
Norepinephrine (Levophed)
Urokinase (Abbokinase)
Phenylephrine (Neosynephrine)

Group 4 –Infusion pump + ECG monitor + RN + the patient must be intubated.

Midazolam infusion (Versed)
Pentobarbital infusion (Nembutal)
Propofol (Diprivan)
Skeletal muscle paralyzers
Cisatracurium Besylate (Nimbex)
Pancuronium Bromide (Pavulon)
Vencuronium Bromide (Nocuron)

Group 5 – Specific requirements as listed. Infusion Pump + Fetal Monitor

oxytocin (Pitocin)
Magnesium Sulfate infusion (for maternity patient)

9:3 Stroke Transfer with tPA

PARAMEDIC

Purpose:

To provide guidance for safe transport of patients who are receiving or have received intravenous tissue plasminogen activator (tPA) for treatment of ischemic stroke. Transport must be done in a safe, smooth, and expedited manner, making sure the patient remains in a stable and comfortable position during transport.

History & Physical Exam:

- Perform and document initial neurological exam
- Perform and document vital signs prior to transport. If SBP >180 or DBP > 105 discuss treatment of Hypertension with sending hospital prior to transport and obtain necessary medications.

Treatment:

- Oxygen to maintain pulse oximetry > 95%
- Cardiac Monitor – must be placed on the patient prior to transport.
- If patient becomes hypoglycemic, refer to 2.6 Medical: Diabetic Emergencies protocol. Initially, it is preferable to use the blood glucose measurement obtained by the transferring hospital in order to avoid unnecessary delay.
    - Reminder patient must remain NPO. No oral glucose can be given to patient.
- Establish or maintain IV access.
- Patient must remain NPO, this includes any medications
- The Paramedic is NOT authorized to give tPA bolus, but IS authorized to maintain the tPA infusion. tPA may only be given if ordered and started at the sending facility.
- Once tPA has completed, Normal Saline Solution should be infused at a TKO rate for the remainder of the transport.
- Monitor and document neurological exam every 10 minutes. If patient develops worsened neurologic condition or if patient develops severe headache, acute hypertension, difficulty breathing, evidence of allergic reaction, or major bleeding then STOP the tPA infusion (if still infusing) and contact medical direction.
- Monitor and document vital signs every 10 minutes. If antihypertensive medication (Labetalol, Nicardipine, Metoprolol) are started or ordered at the sending facility, they may be continued for SBP > 180 or DBP > 105.
- Notify receiving hospital of any changes that occur while transporting.

Credits / References

Medication Formularies, Inter facility Drug List

- Meghan Jordan, PharmD, BCPS
  - Emergency Medicine Clinical Pharmacist, Franciscan Health Dyer ED
- Glenn Allen, PharmD, BCPS
  - Emergency Medicine Clinical Specialist, Franciscan Health Hammond ED
- https://www.fda.gov/downloads/Drugs/DrugSafety/InformationbyDrugClass/UCM562901.pdf

Overall Protocol Format

- Elkhart County EMS System Protocols

Inter-Facility Transport Protocols

- Tom Fentress, MBA, NRP, PI, CFI, Gary Methodist EMS System Protocols
- John Munier, NRP, Regional Operations Manager, Midwest Medical Transport
- Christopher Bollinger, EMT, Station Manager, Midwest Medical Transport

Delineation of Scope of Practice and General Consultation

- Mikel Fort, EMS District Manager, IN Department of Homeland Security
- https://www.in.gov/dhs/files/EMS%20Scope%20of%20Practice%202017.pdf

Helicopter Landing Zones

- Jeff Kochis, Assistant Chief, Hammond Fire Department
- David Hay, EMS Chief, Dyer Fire Department

Trauma Protocols

- https://www.in.gov/dhs/files/Indiana_Trauma_Field_Triage_and_Transport_Destination_Protocol.pdf

45 Minute Trauma Center Coverage Maps

- Maptitude 2016, Caliper Corporation

Unfortunately, the above list does not contain the large number of supervisory and front-line staff from Franciscan Health, the Hammond Fire Department, the Dyer Fire Department and Midwest Medical Transport who offered valuable recommendations and insight throughout the years which were used in the development of these protocols. Thank you all for your input.

Revisions

9/18

- Code 2.7
  - Narcan dose changed from “0.5 mg repeated to 2mg” to “repeated to 6mg”
  - Added comment about Carfentanyl needing multiple doses
- Code 4.4
  - Hammond LZs 8 & 9 have been removed

9/24/18

- Code 4.11
  - TXA Drip rates added

12/28/18

- Code 3.3
  - Versed dose changed from “2-5 mg” to “5mg - May repeat ONCE if needed as long as B/P is greater than 100 systolic”